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19001

Distr.
LIMITED

ID/WG.515/4(SPEC.)
6 June 1991

United Nations Industrial Development Organization

ORIGINAL: ENGLISH

Workshop on Industrial Development in
the Least Developed Countries:
Towards an Industrial Action Plan

Vienna, 19-23 August 1991

STIMULATING RURAL SMALL-SCALE INDUSTRIES IN DEVELOPING COUNTRIES*

Prepared by

the UNIDO Secretariat

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V.91-25359

PREFACE

Pursuant to the Paris Declaration and the Programme of Action adopted at the Second United Nations Conference on the Least Developed Countries (LDCs) held at Paris from 3 to 14 September 1990 UNIDO, with financial support from the Government of Italy, decided to organize a Workshop on industrial development in the LDCs. The aim of the Workshop is to review the status of industry and to analyze key issues in industrial development in the LDCs. The proceedings of the Workshop will form the basis of an Industrial Action Plan for the LDCs to be submitted to the Fourth Session of the General Conference of UNIDO in November 1991.

One of the key issues facing the process of industrial development in LDCs have been identified for discussion during the Workshop. One of the basic issues relates to the task of stimulating rural small-scale enterprises developing countries in general and LDCs in particular. Rural small-scale industrial enterprises (RSIE) have received considerable attention in LDC policy-making and in debates on economic development and industrial issues in these countries. On the one hand, they contribute to rural development, increasing local production and employment; on the other, they help to avoid or reduce the polarization tendencies which have produced massive over-concentration of population and economic activities in large urban centres, with the attendant problems of congestion and social disruption. RSIE has therefore been the focus of a wide range of national, bilateral and multilateral support programmes.

Given its important economic role and the potentially large contribution of the sector to future industrial development, it is useful to analyze and summarize the characteristics of RSIE and the policy instruments used for their development in a wide range of developing countries. Apart from making reference to LDCs, this document also draws on the experience of middle-income developing countries, highlighting its implications for effective stimulation of RSIE development in LDCs.

This document contains three parts. First, the characteristics of RSIE are briefly outlined. Part two, the central part of the document, is devoted to an analysis of the policy framework in which RSIE functions, and of the main categories of special measures taken for its development. These measures cover a wider range of industries than RSIE, often covering all small-scale industries or the whole of rural development issues. The third part, finally, formulates a number of recommendations for RSIE development based on the previous analysis.

The present document is based on a survey prepared for the Regional and Country Studies Branch by Professor Ian Livingstone of the University of East Anglia (UK), as UNIDO consultant. Additional information was provided by UNIDO consultant Paul Hesp.

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LIST OF ABBREVIATIONS

The following abbreviations are used in this document:

BKK	Badan Kredit Kecamatan (Sub-district Credit Institution, Indonesia)
CIHSE	Cottage Industry and Handicraft Sales Emporium
EPVs	Export Processing Villages
FAO	Farmers' Organization Authority
GDP	Gross domestic product
GON	Government of The Netherlands
ILO	International Labour Organization
ISI	Import-substituting industrialization
LDC	Least Developed Countries
M\$	Malaysian dollar
MVA	Manufacturing value added
PDSU	Programme Development Support Unit
RSIEs	Rural Small-scale Enterprises
SEWA	Self Employed Women's Association
SIDOs	Small Industry Development Organizations
SMIDAs	Small and Micro Industry Development Agencies
SSEs	Small-scale Enterprises
SSIEs	Small-scale Industrial Enterprises
UNDP	United Nations Development Programme

1. RURAL SMALL-SCALE INDUSTRY IN DEVELOPING COUNTRIES: CONCEPTS AND CHARACTERISTICS

1.1 Definitions

While small-scale industrial enterprises (SSIE) may be categorized on the basis of employment or capital, employment is the most common basis for categorizations for reasons of data availability. The size categories employed vary considerably, but a fairly typical classification would probably consider units employing between 10 and 49 persons as SSIEs. Micro-enterprises (defined as employing less than 10 persons, but usually employing far less than that, as they are often family enterprises) are in most cases considered as a separate category, but SSIE will sometimes encompass this category as well, which in LDCs is by far the most important.

SSIE is generally not the most important category of small-scale (or micro) enterprise, small enterprises in the tertiary sector usually accounting for the majority. This should be kept in mind when evaluating or establishing support programmes for small-scale enterprise development. Ideally speaking, promotional programmes should be sector-specific, but in some of the smaller LDCs the activities to be supported may not be sufficiently differentiated to warrant such specific programmes.

The present document focuses on rural small-scale enterprises (RSIE) including micro-enterprises. While the term refers to non-urban location, it should be recalled that there are interdependencies between town and countryside. SSIE in urban centres may be of great importance for the development of the surrounding rural areas. Attempts to disperse them or to limit promotion to dispersed rural industries may be counterproductive. The important issue here is the geographical scope of rural development programmes - to what extent should they include urban centres?

A UN definition specifies as "rural towns" those with populations up to 20,000 inhabitants, and this has been adopted by others. But a recent UNDP/GON/ILO/UNIDO report (1988) also includes bigger towns "if these retain the characteristics of smaller towns". Recent work by UNIDO and other multilateral organizations on such widely divergent countries like Viet Nam, Niger, Nepal and Uganda shows that small enterprises in even relatively large urban centres retain close relationships with the surrounding rural areas, which serve as suppliers of raw materials and markets for part of their output.

In this document the term agro-allied industry will be used to refer to industries which may be located in rural areas or in towns. RSIE is a sub-category, and refers to industries actually located in rural areas.

Agro-allied industry may be divided into agro-based industry and agro-oriented industry. The former includes the agricultural processing industries and other forward linkages from agriculture, livestock and fisheries. Forest-based industries are sometimes also included under this heading but should probably be included separately as resource-based industry along with those derived from mining or from quarrying, including the production of bricks and tiles. Agro-oriented industry refers to backward linkages from agriculture, involved in the manufacture of agricultural inputs, such as animal feed or fertilizer, and agricultural implements, including their repair.

With regard to location, even in the case of informal sector micro-enterprises, there is a strong tendency to form clusters or 'agglomerations', presumably due to perceived externalities in coming together. Within each agglomeration, subsidiary clusters incorporating several hundred small establishments may be specialized in particular activities, such as metal-working or furniture-making. Thus even in respect of very small enterprises there may be an efficiency argument favouring location within an urban area, albeit economically interdependent with the surrounding area.

It may be comparatively easy for rural consumers to find their way into towns using fast and cheap local transport. Producing goods at low cost in the most favourable location may help such consumers by turning the rural-urban terms of trade in their favour. In this context the development of appropriate technologies and products for the rural economy may be critical to its growth and agglomerations of micro-enterprises may be, with product development and extension, a useful vehicle for achieving this.

Finally, in many LDCs, African and Asian, households are divided between rural and urban employment, husbands or other members of the family obtaining employment in small and informal sector enterprise in urban areas. This makes the definition of a 'rural household' more difficult. In Kenya the proportion of 'female-headed rural households' created in this way has recently been estimated as one-third. (IFAD, 1990) and other African countries probably exhibit the same phenomenon to substantial degrees. Thus the promotion of SSI in rural towns may be important in maintaining rural household viability.

In trying to estimate the importance of rural non-farm enterprises, statisticians have collected data relating to rural household income, separating this into farm and non-farm income, the latter derived from non-farm activities. Frequently confusion arises between 'off-farm income' and 'non-farm income'. While the farmer could include income from wage employment on other people's farms, non-farm income should include only income from self-employment outside farming or wage employment outside agriculture or other primary activity. Non-farm activities are mostly, as already indicated, in trade, services or catering. Manufacturing activities will be smaller components of the total. Non-farm manufacturing employment may consist either of part-time or full-time household or cottage industry, carried on in or near to the household, or of employment in independent small enterprises, located in rural market centres or towns.

There is an element of ambiguity in what is subsumed under the heading of non-farm activities. For example, frequent reference is made to the positive experience of the Grameen Bank in Bangladesh in extending credit for non-farm activities. The activities supported in fact include cow-fattening, fishpond cultivation and gardening, which would not fall under this heading. Rural credit institutions targeting female-headed or other poor rural households may well find that these activities do represent the most suitable ones to assist: it is entirely appropriate that such institutions define their goals as aiming to support viable activities, whether farm or non-farm.

General features of rural household industries are limited markets for most products, low costs due to the use of cheap labour and relatively free entry into any activity. Competition is therefore very heavy and returns are low, close to the opportunity cost of labour. These factors make it difficult to formulate proper assistance projects. There is a special need to identify niches in overseas or domestic markets which could offer better returns. The goods for such niches must be suitable for household rather than large-scale

production - otherwise, as the example of many LDCs shows, low-cost factory production will become a serious competitor for household production.

Most efforts to formulate proposals for the development of rural, small-scale or cottage/household industry or enterprise as a whole encounter a general lack of the required statistical information. What has been collected often suffers from failure to make or follow clear definitions or distinctions as above, sometimes rendering the data unusable or misleading. Cost limitations lead to limited area coverage. Often, surveys are based on enterprises found at market centres and leave out dispersed rural manufacturing activities, particularly those based on non-agricultural resources. Household enterprises will usually be omitted or seriously underestimated. For these reasons estimates of non-farm employment and income based on household survey data generally diverge from those based on enterprise surveys.

1.2 The structural role of rural industry

1.2.1 Importance and scale

Comparative data on the role of rural industry from developing countries can provide important indications as to the range of options open to the industrial policy-maker. However, given the many categories of non-farm activities, manufacturing and non-manufacturing, rural and urban, small and large scale, household and non-household, just described, it becomes quite difficult to find systematic and unambiguous data detailing the precise quantitative importance of each.

Rural households depend to a very large extent on non-farm as well as farm income. Non-farm income consists of trade, services, including catering, apart from manufacturing activity. Also included is non-farm income obtained outside farming but as a secondary activity. Figures showing the proportion of the labour force engaged outside agriculture as a primary occupation are still significant, between 18 and 33 per cent (Table 1), suggesting proportions of the rural labour force engaged in manufacturing, however, of perhaps 6-10 per cent (Table 2). More recent data supports this (Table 3). They suggest percentages of the rural labour force engaged in non-farm activity of 20-28 per cent in Africa and 20-50 per cent in Asia, with participation in manufacturing of 3-8 per cent in Africa and 5-15 per cent in Asia.

A striking feature of both urban and rural SSEs, manufacturing and non-manufacturing, is the predominance of micro-enterprises. The recent UNDP/GON/ILO/UNIDO review, commenting on the composition of RSIE specifically, notes that the 'overwhelming bulk of enterprises employ less than 5 persons, with less than 10 per cent in the small industry category, defined here as with 5-25 employees'. Data collated by Liedholm and Mead (1987, Table 4) equally show the bulk of employment being provided either by medium/large firms with 50 or more employees or by micro-enterprises. Evidence from the Middle East (UNIDO, 1990) is similar.

1.2.2 Efficiency and growth

A feature which has been observed (Livingstone, 1984) is that employment in the sector expands very largely through an increase in the number of micro-enterprises, still employing no more than 2 or 3 persons, rather than through any increase in size of existing establishments, the sector

Table 1. Percentage of Rural Labour Force with Primary Employment in Rural Non-Farm Activities

Country	Year	Coverage	Percentage of Rural Labour Force Primarily Employed in Non-Farm Sector (%)
Thailand	1970	All rural	18
Sierra Leone	1976	Male rural	19
Pakistan	1970	Punjab only	19
Nigeria	1966	Male 3 dist W. State	19
India	1966	All rural	20
Uganda	1967	Four rural villages	20
Afghanistan	1971	Male Paktia region	22
Mexico	1970	All Sinaloa State	23
Colombia	1970	All rural	23
Indonesia	1971	All rural	24
Venezuela	1969	All rural	27
Kenya	1970	All rural	28
Philippines	1971	All rural	28
Malaysia	1970	All rural	32
Iran	1972	All rural	33

Source: Chuta and Liedholm (1979).

Table 2. Sectoral Composition of Rural Non-Farm Employment in Selected Countries
(Percentage)

	Afghanistan (1970)	India (1966)	Indonesia (1971)	Sierra Leone (1975)	Philippines (1970)	Republic of Korea (1970)	Colombia (1970)
Manufacturing	46	39	29	40	34	30	33
Construction	9	14	5	2	11	10	8
Trade	11	14	34	35	15	24	19
Services	10	24	27	23	30	29	33
Other ^{a/}	24	9	5	-	10	7	7
	100	100	100	100	100	100	100

Notes: ^{a/} Includes utilities, transport and miscellaneous; omits 'other and unknown'.

Source: Chuta and Liedholm (1979)

Table 3. Share of Rural Manufacturing and Non-Farm Activities in Selected Countries
(Percentages)

	Proportion of the rural labour force engaged in	
	Manufacturing	Non-farm Activities
<u>Africa</u>		
Kenya (1970)	-	28.0
Sierra Leone (1976)	7.6	19.0
Zambia (1980)	2.7	22.3
<u>Asia</u>		
Bangladesh (1983/84)	7.7	33.5
India (1981)	6.5	19.0
Indonesia (Java) (1980)	9.5	37.9
Malaysia (1980)	10.5	49.3
Nepal (1977/78)	14.0	n.a.
Pakistan	9.4	32.3
Philippines (1983)	7.0	31.9
Sri Lanka (1981)	8.4	45.8
Thailand (1983)	5.4	n.a.
<u>Latin America</u>		
Colombia	7.6	23.0

Source: Asia: R Islam. (1987). Other: (except Zambia) Liedholm and Mead. Small-scale Industries in Developing Countries: Empirical Evidence and Policy Implications (Washington, D.C., USAID, 1986). Zambia: Draft Third Five Year Plan, N.C.D.P. (Lusaka, Zambia, 1986).
Quoted from: RSIE-Evaluation Study, 1988, Haan, 1989.

Table 4. Employment in Industry, according to Size of Firm

Country	GNP per capita (US\$) _{a/}	Employment (%) according to size of firm			
		Micro (0-10)	Small (10-49)	Large (50+)	
India	1971	260	42	20	38
Tanzania	1967	280	56	7	37
Kenya	1969	390	49	10	41
Indonesia	1977	580	77	7	16
Zambia	1985	640	83	1	16
Philippines	1974	820	66	5	29
Vanuatu	1990	840 _{b/}	65	35 _{b/}	
Colombia	1973	1,460	52	13	35

a/ Based on 1982 prices. b/ US \$ 1988. c/ All enterprises with 10+ employees

Source: Liedholm and Mead (1987), questionnaire UNIDO/REG.

representing, in effect, a form of self-employment. Different data put together by Liedholm and Parker (1989) indicate similarly that micro-enterprises, still employing no more than 2 or 3 persons, rather than through any increase in size of existing establishments, the sector representing, in effect, a form of self-employment. Different data put together by Liedholm and Parker (1989) indicate similarly that micro-enterprises generally do not expand in size over the years. Thus an 1980 update of a survey of manufacturing micro-enterprises enumerated in 1974 found that none of the establishments in the villages (in Northern Nigeria) had expanded at all, 13 per cent of those in rural towns had, and 31 per cent of those in urban centres had taken on more workers. This indicates some growth of firms, but in urban areas only. In Nepal, during the 1970s, it was actually estimated that the average employment per micro-enterprise had declined, from approximately 3 to 2 persons. But the number of micro-enterprises almost doubled, and their MVA increased by some 78 per cent. The great majority of these enterprises was located in villages or small rural towns.

While the majority of micro-enterprises do not grow in size, small-scale industrial enterprises do exist which have emerged from their ranks. This appear to have happened to a significant extent in Asia, and in India particularly (Table 5), where 66 per cent of a sample of firms now employing 11 or more employees started as micro-enterprises:² not so much in Africa (see also World Bank, 1987), though the Nigerian figure is nearer to that of, for example, the Philippines, reflecting the weaker dichotomy between formal and informal sectors. LDCs show low rates of "graduation" to larger-scale enterprises, a.o. because of the small size of domestic markets and the acute lack of the technical and managerial qualifications required for larger operations.

Table 5. Origins of Modern Small and Medium Private Manufacturing Firms (with 11 employees or more)

Region/ Country	Year	No. of Firms in Sample	% Originated as Micro with less than 10	% with 11 or more employees
<u>Africa</u>				
Nigeria	1965	64	43.7	56.3
Sierra Leone	1975	42	30.1	69.9
Rwanda	1987	28	10.7	89.3
Botswana	1982	20	20.0	80.0
<u>Asia</u>				
India	1979	244	65.6	34.4
Philippines	1978	47	48.9	51.1

Source: Adapted Haan (1989) from Liedholm and Parker (1989) p 26.

²'Town industries' in rural Thailand averaged 5.7 workers per establishment according to one survey (Akransee et al. 1983, p.10').

In addition to this potential, it is also the case that, even if the size of the individual establishment does not increase, employment in the sector based on one or two-person establishments can still expand in impressive fashion. This is demonstrated in Kenya (Table 6), one of the few countries which maintains a regular statistical series covering informal sector enterprises. Over the period 1985-88 employment in small-scale manufacturing enterprises grew at an annual average rate of 15 per cent.

Table 6. Kenya: Recorded Employment, including Small-Scale Enterprises, 1985-1988

	1985		1988 ^a		Annual rate of growth
	('000s)	(%)	('000s)	(%)	1985-88 (%)
<u>All Sectors</u>					
Public & private wage employment	1,174.4	82.2	1,311.0	79.1	3.6
(Private sector only)	(599.8)	(42.0)	(650.1)	(39.2)	(2.7)
Small-scale enterprises	254.5	17.4	346.2	20.4	11.1
Self-employed & family workers	33.4	2.3	43.9	2.6	9.6
Total	1,462.0	100.0	1,701.1	100.0	5.2
<u>Manufacturing</u>					
Public & private wage employment	158.8	78.5	170.3	72.0	2.2
(Private sector only)	(123.6)	(61.1)	(132.7)	(56.1)	(2.3)
Small-scale enterprises	43.5	21.5	68.1	28.0	15.0
Total, not including self-employed & family workers	202.3	100.0	236.4	100.0	5.3

^{a/} Provisional

Source: CBS, Economic Survey, 1989

In least developed countries, where there are often serious obstacles to the development of larger, formal sector manufacturing, informal sector manufacturing is sometimes the major source of MVA growth. It is estimated that the contribution of informal sector manufacturing to GDP in Niger rose from 3 per cent in 1983 to 7 per cent in 1988; growth took the form of an increase of the number of enterprises rather than an increase in the size of individual enterprises. Over the same period, the contribution of formal sector manufacturing to GDP decreased by an annual average of 2 per cent.

Efficiency in RSIE is very difficult to measure, most of these enterprises being unregistered and keeping at best incomplete records. Such information as exists does not allow detailed conclusions on the subject. It is moreover clear that in many countries the survival rate of these industries is low, many of them disappearing within a few years of having been established.

But there are some indications that RSIE are efficient in various respects. They often use dispersed or recycled materials that would otherwise be wasted. Such figures as exist on productivity in countries like Nepal, Viet Nam or Niger suggest that in small-scale and informal manufacturing, which strongly overlap with RSIE, output or MVA per worker are higher than in the larger-scale enterprises. According to ILO figures, the average capital cost of creating an informal sector job in Latin America is usually less than one-tenth of the cost of a job in the formal sector. In contrast, a study on Cote d'Ivoire showed that in 1970 productivity in the informal sector was only one-fourth of productivity in the formal sector.

There is an important issue which needs to be considered in the context of individual countries. Should the main promotional effort be directed towards micro-enterprises or to 'modern' small industry, or both, taking into account that the nature of any assistance required in the two cases is likely to be quite different? Farman and Lessik (1989), for instance, recommend that for micro-enterprises an 'incrementalist' promotional approach should be pursued while for small enterprises a 'business development approach' is possible, with survival activities at the bottom end of the informal sector requiring a 'community development approach'.

Governments are more likely to associate development with at least minimum-sized firms and thus to concentrate their efforts here, as has certainly been the case: the rate of return to such efforts may be lower, in fact, and some countries, which have experienced this are beginning to re-orient their policies. In LDC's like Nepal and Bangladesh considerable interest has been directed in recent years towards providing credit for the rural informal sector, as discussed below.

1.2.3 Linkages

An important part of the case for emphasizing rural industries is their potential linkages with each other and with other sectors - particularly in comparison with, for example, import-substitution industries. Many rural industries, and other non-farm activities, cater for the local rural population so that, even without direct input-output linkages, they are demand-linked, their level depending directly on the level of agricultural incomes.

As noted previously those with direct input-output linkages with agriculture may be either agro-oriented or agro-based. These can be quite important: in Pakistan, for example, agro-oriented industries, including fertilizers, tractors, agricultural implements, threshers, tubewells and surface pumps, account for 10 per cent of the total value of manufacturing output in 1986-87. Agro-based industries include grain-milling, sugar manufacture, leather tanning, cotton textiles, carpets and rugs, oil, especially cottonseed extraction, fruit processing, beverage-making, fish processing, guar gum and tobacco products (Choudhury, 1988), accounting for some 40 per cent of manufacturing output.

In LDCs, agro-based industries usually account for more than 50 per cent of MVA; in some instances (e.g. Nepal) more than three-fourths of MVA is provided by agro-based industries. It should be added, however, that the inputs for these industries often have to be imported. The forward linkages in LDCs are often limited by the low productivity of domestic agriculture. Agro-oriented industries providing inputs and equipment for agriculture are usually of minor importance in these countries, among others because of the

weak demand link (low purchasing power) and lack of domestic know-how. Production is usually restricted to the informal sector (blacksmiths producing hoes, sickles, etc.).

Inter-industry linkages are usually almost non-existent in these countries, at least in the formal sector. A 1990 World Bank study on Sub-Saharan Africa concluded that there are few linkages among informal sector enterprises as well, but that linkages between the formal and informal sector do exist, the waste materials of formal sector enterprises being used by the informal sector, and savings from formal sector employment being used to finance informal sector units. While linkages between informal sector firms belonging to different branches may be minimal, those belonging to the same industry often form clusters. With regard to labour, many informal - and especially household - industries provide a linkage between seasonal farm activities.

Rural enterprises in Thailand mainly serve local markets as shown in Table 7. These are largely based on domestic resources. Important activities are bamboo and crop processing, mat-making, silk and cotton weaving. In almost 10 per cent of the households equipment for local use (hand tools, ox carts) was produced. It is also worth noting that more than one-fourth of the households was involved in tertiary activities (trade, transport, etc).

Table 7. Number of Farm Households Reporting Specified Non-Farm Enterprises in North and North East Thailand, 1982

	Households reporting activity (N = 424)	
	Number	% of households
Noodles	30	7.1
Ox carts	6	1.4
Silk-weaving	43	10.1
Cotton-weaving	65	15.3
Wood products	17	4.0
Bamboo products	93	21.9
Hand tools	36	8.5
Processing agricultural products	109	25.7
Cement products	3	0.7
Mat-making	62	14.6
Pottery	20	4.7
Bricks	12	2.8
Lacquerware	2	0.5
Other products	50	11.8
Commerce	54	12.7
Services	60	14.2

Source: O Kiatying - Ungsulee (1981)

A survey carried out in Thailand (Charsombut, 1983) found input shortages affecting variously the production of ox-carts, silk, cotton, wood crafts, bamboo products, mats, pottery and bricks. The basic inputs belong to two categories: (i) local natural resources and agricultural production, (ii) supplies imported from elsewhere, usually from urban areas. These two

situations carry very different implications for organization and development of the industry with, for example, parent firm/local household enterprise linkages in the latter case.

With regard to backward linkages, differences in rural development are, among others, reflected in the role played by equipment production: a 1977 survey on Kenya showed that only 1.5 per cent of the rural households was involved in producing tools and in equipment repair. To explain the limited backward linkages, we can refer to the 1981-82 Rural Household Budget Survey, which showed that, for example, only 12 per cent of the households owned a plough. (As in Thailand, the share of services - transport, trade, catering, etc. - was quite high, approximately one-third of the households being involved in such activities). In Asia there is widespread use of, e.g., irrigation pumps, while the transport sector, in the form of trucks and buses, is more developed, generating an elaborate network of metal and welding workshops throughout the rural areas, even in LDCs. Thus "in Bangladesh, even in small villages, they employ a remarkable number of lathe machines, drilling bores and electrical welding equipment, representing an enormous potential for further development of small enterprises." (Haan, 1989, p 11).

We can conclude that, in general, forward linkages from agriculture are much more significant in employment and income terms; that non-production linkages from agricultural development (storage, trade and transport) are important; and that backward linkages are important in the development and level of technology in agriculture. Intensive agriculture, with high valued cash crops, is also likely to generate more backward linkages than extensive agriculture with low-valued crops.

Development of rural workshops serving the agriculture, transport or other sectors will in turn be constrained or facilitated by the extent of rural electrification, which must therefore be another significant factor. This can also be decisive in determining the possibility of rural small-scale as opposed to urban large-scale production.

2. MACRO-ECONOMIC POLICY AND ITS EFFECTS ON RURAL AND SMALL-SCALE INDUSTRY

The development of RSIE is influenced by the overall policy framework for industrial development, by such specific policies for SSIEs/RSIE as have been formulated and by agricultural policies. To identify key issues which need to be considered for the future development of RSIE, the next two chapters will deal in more detail with the various possible types of RSIE support.

In many LDCs, particularly African, the basic industrial development strategy being pursued is one of import-substituting industrialization (ISI). This usually centres upon large-scale capital-intensive industry, often foreign-owned, with imported technologies of a 'turn-key' type. Very often this large-scale manufacturing sector exhibits substantial excess capacity. It can exert influence and pressure to secure protection and other support measures, including duty-free importation of capital goods, privileged access to whatever foreign exchange is available, and artificially low rates of interest on capital. Such industries do not use local materials to the same extent as rural or small scale enterprise. Thus they generate fewer linkages. The adoption of 'turn-key' technologies also reduces the possibilities for subcontracting to SSEs.

One effect of the pursuit of ISI has been to produce, in Africa particularly, a bimodal structure in manufacturing with some large modern factories, (albeit with excess capacity) and vast numbers of micro-enterprises, and very little in between. This phenomenon has been described as the problem of the 'missing middle'.

Apart from a general strategy of ISI in many LDCs, most of the major policy instruments favour large- rather than small-scale production. Thus, as a means of stimulating industrial investment, capital goods are frequently importable duty-free, encouraging capital-intensive industry rather than small industry, which is labour-intensive. This also inhibits the development of domestic capital goods production which might well have been small scale and rural-oriented: the production of agricultural equipment and tools, for instance. This makes it difficult to develop progressive linkages between sectors or between large and small enterprises.

Since the second half of the 1980s, there has been a growing awareness of the need to re-orient the basic industrial strategy in many LDCs. The large-scale sector has stagnated as a consequence of limited markets, lack of qualified personnel and a shortage of foreign exchange to purchase inputs, spare parts and equipment, the large-scale sector being extremely import-dependent. In Botswana, for example, the current development plan therefore shifts its priorities for the manufacturing sector to processing of local raw materials, together with improved extension services in rural areas and simplified procedures for handling credit applications which among others are intended to stimulate the growth of RSIE. In Nepal, administrative procedures for the establishment of small industries processing local raw materials were abolished.

Tariff policy can have another type of negative impact on RSIE because of the way in which goods are sometimes classified, following conventions that are more appropriate to industrialized countries. Thus Sierra Leone imposes a 35 per cent tariff on outboard motors and on sewing machines, as though these were consumer goods rather than capital equipment for fishing and tailoring, while Burkina Faso applies a 72 per cent duty on hand tools, under similar assumptions (Haggblade et al, 1989).

Tax policy frequently carries a similar bias through special depreciation provisions which have the effect of subsidizing the cost of capital. Such provisions are common in Africa but are also important in Asian countries such as Thailand and the Philippines. According to calculations by Bautista (1988), such provisions in the Philippines reduced the user cost of capital by some 50-70 per cent. The repercussions of the measures were to reduce employment in non-exporting firms by some 35 per cent, and in exporting firms by 7 per cent.

This is reinforced again by interest rate policy. Formal sector interest rates in most developing countries are generally fixed at standardized levels within a range of, perhaps, 8-16 per cent, irrespective of the level of inflation or the real scarcity of capital in the economy, as reflected by existing rates in the informal sector. Thus real formal sector interest rates may even be negative and average only 3 per cent (Table 8) compared with real informal sector interest rates of nearly 60 per cent, and over 100 per cent in Africa. Where the rate of interest is maintained at an artificially high level like this the effect will be to produce a dualistic capital market in which bank credit is rationed out amongst large-scale private or public enterprises, leaving rural and other small-scale enterprise to depend entirely on personal savings or expensive informal sources.

Table 8. Interest Rates in the Formal and Informal Sectors of Developing Countries

	<u>Informal Sector (%)</u>		<u>Formal Sector (%)</u>	
	nominal	real	nominal	real
Africa (6 countries)	114	108	9	3
Asia (10 countries)	37	28	12	4
(incl Viet Nam)	(48)	(20)	(30)	(2)
Latin America (9 countries)	64	54	13	2
Mean, 25 countries	67	57	11	3

Source: Derived from Haggblade et al (1986)

Overvalued exchange rates also subsidize capital by cheapening imported capital goods relative to labour. In 1983, out of 28 developing countries, exchange rates were overvalued by 10 per cent or more in 22, (18 out of 19 in Africa, the Caribbean and Latin America) and by more than 40 per cent in 8 out of 28 (Haggblade et al, 1986).

Such rates also discriminate against exports which are generally agricultural or are products of labour-intensive RSIE, including processing. Reduced agricultural growth and incomes will affect demand-linked RSIE and, again, retard the development of other rural linkages. Several country studies of the negative effects of such policies have been carried out, for instance in Thailand, the Philippines and Tanzania (Stewart, 1989).

Where exchange rates are permitted to diverge so sharply from an equilibrium rate the foreign exchange which is available tends to be allocated through administrative channels, inevitably favouring large-scale enterprises,

which are more easily able to make application to the Central Bank, as well as parastatals. Micro-enterprises will depend on whatever imported materials percolate downwards through the wholesale and retail trade, and often on recycled materials.

Provision of market information, technical advice and other support and assistance in the establishment and maintenance of an enterprise are also biased in favour of medium or large enterprises. Such assistance, whether from government officials, development agencies or commercial institutions, is generally more readily available to large enterprises in metropolitan areas than to RSIE in the districts.

Large enterprises can more readily afford to invest in research and development, as well as being able to import ready-made technologies. Appropriate technologies for small-scale enterprises can less easily be developed at the level of the enterprise and, while an international 'shelf' of possible technological innovations can be drawn upon to some extent, mechanisms do not exist in most developing countries for systematic identification, development and dissemination of appropriate technologies for application in the rural sector.

At the national policy level, statements of intent are often made in support of rural industrialization and small industry development, for instance in development plans, institutions for promotion and various incentive schemes are set up. However, in many cases, these are not effective whether because the institutions lack authority or the incentive schemes are not specific to RSIE and are more readily taken advantage of by larger enterprises.¹ What is important, therefore, is the degree of commitment by government towards creating what has been referred to as an 'RSIE-friendly economic environment' (UNDP/GON/ILO/UNIDO, 1988).

Much has been done in several Asian countries to provide support to RSIE in the context of overall SSIE schemes. The Indian support system is one of the most comprehensive. It includes concessional finance, technical assistance, training, tax concessions, the provision of industrial estates, government purchasing and sub-contracting schemes. An unusual feature are the reservation schemes, reserving a large number of goods for manufacture by SSIE and micro-entrepreneurs.

These programmes have resulted in the creation of a large number of small enterprises, but they have been criticized for being heavily oriented towards urban SSIE, for having caused a proliferation of support agencies and for delaying modernization and increasing costs to consumers by overprotecting traditional industries through the reservation schemes.

The main focus of promotion programmes is usually on supply-side measures, offered singly or as a package. In recent years, partly as a result of unfavourable experiences with many of these components, it has been realized that supply-side measures by themselves may be ineffective unless there are also favourable demand-side conditions and macro-policies that provide an "enabling environment".

If the "enabling environment" is taken in its widest sense, the policies which contribute to agricultural growth acquire great importance.

¹ Choudhury (1988) suggests this holds true of Malaysia, for instance, despite the existence of a number of agencies and a Co-ordinating Council for the Development of Small Scale Industries.

Agricultural growth can contribute to - among others - RSIE growth in two ways:

- It helps to improve the flow of inputs to processing units;
- It enlarges the market for producer and consumer goods.

Long-term policies stimulating agricultural growth have been a major factor in the growth of RSIE in China. A recurring theme in these policies is that agriculture must not be seen in isolation of other rural economic activities. The aspect of local processing is thus taken into account when agricultural development policies are formulated.

Independent of the politico-economic system of a country, agricultural development is unlikely to be successful if measures to increase output are not accompanied by a number of other measures, including a redefinition of land rights to encourage small producers, the improvement of education and extension services, physical infrastructure, the provision of credit to small farmers and adequate producer prices.

Structural adjustment programmes (SAPs) generally include exchange rate adjustments, the reduction of protection, deregulation and price liberalization. These measures have several potentially positive consequences for SSIE/RSIE development.

- Exchange rate adjustments will make imports (of inputs, spare parts and equipment) more expensive. Although lower trade barriers will facilitate the flow of imports, large-scale import substituting industries are likely to be affected, which would relatively strengthen the position of industries based on local resources and simple technologies;
- Exchange rate adjustments make exports cheaper. This has among others stimulated rural processing in a number of countries;
- Protective measures have usually been formulated with the large firms in mind. When protection is rationalized, it should become easier for SSIE to compete with large-scale industries;
- Price liberalization has stimulated agriculture, improving the raw material base for RSIE and creating a larger market for producer and consumer goods provided by agro-oriented industries;
- Deregulation will make it easier to establish new enterprises. SSIE is likely to benefit in particular: complicated administrative procedures have proved a formidable obstacle in many LDCs, as small entrepreneurs often lack the know-how, resources and political connections to tackle these procedures.

It is possible, of course, that protection in a particular country has been extended to small-scale enterprise and to co-operative or cottage industry, benefiting also from product reservation policies. These could be adversely affected by requirements to abandon reservation policies and by freer importation of cheap goods from abroad. The increasing prices of crops can also have a negative effect: they do not only stimulate agricultural

production, but they also increase the costs of inputs for agro-processing industries. SSIE in this sector, which would mainly operate for the domestic market, will not always be able to pass on the increase in prices to its customers, especially in LDCs with their low income levels. Until overall prosperity levels rise (as they are expected to do as a result of adjustment programmes), such industries may see their sales drastically diminished.

Structural adjustment will often involve a reduction of public spending, with a generally deflationary effect on the economy, curtailment of government activities and reduction of subsidies to parastatals. While the loosening of the hold of large enterprises, including parastatals, on the market may have a positive effect on small enterprise development (Teszler, 1989, p.31), the reduction of government spending may also mean that credit schemes for SSIE have to be abolished or reduced. Alternative ways of providing credit to small enterprises may therefore have to be identified.

In general the impact of an SAP will depend on the mix of existing policies. Overall, the impact is likely to be favourable for RSIE. In Kenya, for example, where comparatively good annual figures of numbers of informal sector enterprises are maintained, these showed strong positive growth throughout the period of structural adjustment in the second half of the 1980s. Structural adjustment in Tanzania in the same period is also reported to have had positive effects as far as small industry is concerned.

3. DEMAND-SIDE MEASURES TO PROMOTE RURAL SMALL-SCALE INDUSTRIAL ENTERPRISES (RSIEs)

3.1 Product reservation schemes

Product reservation schemes represent a demand-side intervention, in that the available market is specifically set aside for the benefit of the small-scale or household sector. Their use in India for the protection and promotion of such industry has been extensive, and indeed the number of items reserved for small scale industry production in India was considerably increased during the second half of the 1970s. Reservation schemes are uncommon elsewhere and not as extensive if they exist. Pakistan, for example, reserves certain categories of export goods for RSIE.

Such a policy can be supported on income distribution grounds, even at some cost in terms of efficiency, particularly where substantial numbers of people are already dependent for employment or supplementary income on the activities involved. However, in contrast with direct subsidies and even tariff protection, which is not usually absolute and totally exclusive of competition, the absolute exclusion of other enterprise here is artificial. It is likely to prevent organic growth of enterprises which would otherwise have graduated out of the protected category and create a lopsided industrial structure, with very little between the large enterprises at one end and household/cottage workshop enterprises at the other, accentuating the problem of the 'missing middle' referred to earlier. Even the social benefit has been questioned in the Indian case, with reference to the textiles, sugar and light engineering industries (Little, Mazumdar and Page, 1985). In general more positive policies towards household industries are needed, based on efficiency and competitiveness.

3.2 The encouragement of subcontracting

Another demand-side initiative, more capable of playing a significant role in a dynamic industrial development strategy, is the encouragement of subcontracting, both to household and small-scale industries. It is not, however, a generally applicable promotion measure, its appropriateness depending on local circumstances, the identification of particular products and on the available skills in SSIEs and households.

In the 1980s, a number of Export Processing Villages (EPVs) was set up in Sri Lanka, with the objective of increasing exports through village-based production, directing some of the expected benefits of an export-oriented economy to the village level. This would also increase employment, living standards and productivity and would promote entrepreneurship. The village producers are linked with a larger firm operating in export markets. These firms negotiate orders or contracts with overseas firms and supervises the production. Most of the EPVs are involved in the production of traditional craft products (handloom weaving, etc.) or in processing of local agricultural products. Remuneration is based on piece rates, but villagers also hold shares in the local EPV scheme. Most of the workers are women.

The EPV scheme has a number of shortcomings. Bargaining power of the village workers vis-a-vis the larger firm is usually low. Earnings are also less stable than in traditional cottage industries, as international market fluctuations are directly passed on to the producers. The positive impact is seen in the access of low-income families to an additional source of income. New skills are introduced on a modest scale, as well as the concept of quality

control. The EPVs have also clearly increased the country's foreign exchange earnings and industrial production.

Subcontracting may be helpful to household producers in securing market outlets in urban areas, and even more in securing export markets for their products. Parent firms may have a role, moreover, in product identification or development, identifying products which might sell in overseas markets or new designs which would develop sales.

In some cases it may be useful for households to form themselves into co-operative groups or associations to facilitate dealings with parent firms or communication with extension officers in relation to upgrading production techniques or product design and quality. This has been of great importance in the expansion of Nepal's carpet industry. Often there is large potential but development even for the national market, quite apart from the international one, has been handicapped by poor quality and the absence of approved quality standards.

Subcontracting by parent firms to independent small-scale enterprises is of a somewhat different nature and is much more extensive, particularly in urban areas. It plays a significant role in several developing countries, for example the garment industry in the Philippines, carpet production in Pakistan, and rattan furniture in Indonesia, all these in rural areas (Nanjundan, 1989, p.54), may be cited. This appears to be a potentially quite important mechanism for facilitating the dispersal of suitable industries into the rural areas. It is likely to be dependent upon the existence of good rural infrastructure, particularly roads, without which the costs of decentralized production would be excessive, and electric power (depending on the nature of the production process). Again associations of producers are likely to be helpful, and specifically clusters of producers in one location.

China has gone furthest in organized decentralization of production into the rural areas through the so-called 'one dragon' relationship between urban and rural industrial enterprises, where the 'head' is located in the city and 'body' in rural township enterprises. Here the urban enterprises provide raw materials and product designs to township enterprises within the same sectors, while the latter carry out the required processing against a processing fee (Choudhury, 1988, p.51).

3.3 Increasing market shares

The stimulation of RSIE product sales can take several forms. Sales promotion is the most common of these, but Government (and sometimes donor) purchasing schemes also play a certain role.

Sales promotion for household/cottage industries has been organized in some Asian LDCs. In the Dhankuta area in Nepal, for example, the Government set up a Cottage Industry and Handicraft Sales Emporium (CIHSE) in the mid-1970s. It mainly focusses on the domestic market for traditional textiles but to a lesser extent it is also involved in the tourist market and in supplying inputs and equipment to RSIE. By the mid-1980s, CIHSE was experiencing stiff competition from imported Indian, Chinese and Korean textiles. This points to a need for including quality and design improvements in the marketing efforts, if RSIE are to face competition from mass producers, especially if export markets are targetted. Technical assistance could make an important contribution here (CEDA 1984).

In some countries, co-operative marketing organizations are found as well (Sri Lanka, Indonesia) These have the advantage of involving entrepreneurs more intensively in marketing. Chambers of Commerce may also play a useful role, but on the whole their activities focus on large-scale enterprises rather than on RSIE.

In Africa, sales promotion is on the whole less developed. A recent example of efforts to stimulate traditional industries through a different type of sales promotion is the Salon International de l'Artisanat held in Ouagadougou in late 1990. Twenty-six African countries were represented at the Salon; the majority of exhibitors came from LDCs. Its main events were a fashion show (also presented in Paris), an exhibition and a colloquium on crafts and creativity. UNIDO participated in the Salon in the context of its project "Promotion of Traditional Textiles Industry in West African LDCs".

In a number of countries, the Government is an important buyer of SSIE products. India provides the most prominent examples. Much of the output of the hand-made paper industry is purchased and used for a variety of special purposes. In Tanzania, schools in rural areas purchase locally-made furniture. Efforts are, moreover, being made in several LDCs to use products of RSIE in the context of multilateral or bilateral assistance projects. One problem is that even when it has been decided that goods could be procured locally, it is common practice to stipulate that these be obtained through the system of competitive bidding, frequently with a minimum of three bids. Such a condition simply excludes large slices of industry in the majority of LDCs. Local sourcing is also discouraged by the practice of combining together sets of equipment requirements into different "packages". Such a practice severely reduces the ability of an LDC supplier to be able to provide all elements in the package, while it is not uncommon for these packages themselves to be procured under international competitive bidding.

Another problem is that aid donors often require relatively large quantities of products with a standardized quality and a fixed delivery date. RSIE, and in particular cottage industry, often cannot meet such demands (in the case of the Indian hand-made paper industry, serious efforts had been made to improve the quality of its output). In other words, RSIE may not be competitive with large-scale industry. Bilateral donors, especially, will be inclined to rely on products made in their own countries. As in other markets, RSIE will therefore have to identify market niches for its products, and to improve the quality of its products and customer services. This again points to the need for co-operation among RSIE entrepreneurs. On the other hand, donor agencies could make more efforts to identify and use suitable local products. This could be of particular importance in LDCs, where the buying power of donors may be considerable in comparison with the local market.

4. SUPPLY-SIDE MEASURES TO PROMOTE RURAL SMALL-SCALE INDUSTRIAL ENTERPRISES (RSIEs)

4.1 Small industry development organizations (SIDOs)

As LDC governments have come to realize the need for some kind of development effort in respect of small scale or rural industry, a number of them have established 'general purpose' small industry development organizations (SIDOs) or SMIDAs (small and micro-industry development agencies). They are general purpose in the sense of combining, for example, infrastructural provision through industrial estates, extension and a credit component. Initially, the activities of a number of these agencies sometimes focussed on a single issue, such as the provision of credit or technology consultancy. The complexity of issues related to SSIE development then successively led to an increasing variety of tasks.

While some SIDOs have certainly made some progress, their general performance has been disappointing. The most important reason for this, undoubtedly, is that the macro-economic framework within which the organizations operate has not been consistent with a strategy in which small industry promotion can play a major role, major incentives and other policy instruments being heavily weighted towards large-scale enterprise. In addition the organizations tend to be centralized and bureaucratic, and to exhibit a strong urban bias, focused as they are at a limited number of points where industrial estates have been established.

A substantial element of subsidy is often involved and the programmes are usually highly dependent on donor funding, with consequent problems of sustainability. They are usually government or parastatal-organized, without direct involvement by commercial banks or non-governmental organizations, leading on to common difficulties from non-repayment of loans, arising out of the assumption by borrowers that government funds can be treated as grants. (UNDP/GON/ILO/UNIDO, 1988, p.xxi).

The conclusion is that a different approach to the establishment and role of SIDOs may be needed. Macro-economic policies which support the development of small and micro-enterprises are an essential precondition. SIDOs should also reduce the range of their activities, unless they deal with a very limited number of clients (as in some small island states), establishing links with other agencies carrying out specialized tasks such as provision of credit and technology support.

SIDO's would then limit themselves to co-ordinating the efforts of the relevant specialized agencies, assessing the needs of SSIE to provide a basis for designing support activities, and serving as an information centre for small entrepreneurs which would also provide some basic assistance in administrative matters (which agencies to approach for support, how to complete forms, etc.). Charging a basic fee for these services (as USAID-supported service centres in Haiti do) would reduce the cost to sponsors and would increase cost-consciousness among clients. Finally, small entrepreneurs' associations should be involved in the establishment and running of SIDOs. This would help to ensure that they remain client-centred and remove entrepreneurs' inhibitions to use their services.

4.2 Credit and finance

With regard to credit two questions need to be asked: is credit really a limiting constraint on the growth of small enterprise and, if so, to what extent and in what respects? Secondly, if some credit would be helpful, what is the most effective way of delivering such credit, using existing or new mechanisms?

Factors which suggest that credit is a constraint include, first of all, the fact of almost total dependence of small enterprises, urban and rural, on personal savings (derived usually from agriculture, trade or past wage employment), friends and relatives. Choudhury (1988, pp.42-43), reviewing the positions in Malaysia, India and Pakistan, refers to small rural agro-industries being highly dependent on their own savings, on friends and relatives and on the informal credit market, while working capital constraints limit the level of operation of these small establishments. Similar dependence has been reported by UNIDO missions to a number of LDCs in SSA (Niger, Tanzania).

Obstacles to the use of commercial bank credit by small establishments are an insistence on collateral or equivalent guarantees; time-consuming and urban-based procedures which are particularly daunting for small enterprises; and perhaps an inherent conservatism on the part of banks, given also the comparative ease of earning bank revenue on large loans. Formal banks have a very limited rural network, especially in Africa, as well as highly centralized loan approval procedures.

Industrial Development Banks may be just as biased, or more, towards medium and large enterprises, as recently discovered in an analysis of loan portfolios in the Gulf States (UNIDO, 1990). Experience moreover shows that they may not be appropriate instruments for industrial development in the smaller LDCs where the potential for large or even medium-scale industries is limited.

Despite these a priori reasons for supposing that access to credit must be a major problem for small firms, there is need for caution in making this deduction. Government agency efforts to remedy a supposed capital shortage among small enterprises have generally met with poor results, with low loan repayment rates, often due in part to an assumption by loan recipients that there is no real need to repay. In other cases, the agencies have found it difficult to actually fully place their loan funds. This has led a number of observers to conclude that lack of capital is not the main problem. The Nepalese Priority Sector Credit Programme, for example, launched by the national bank, and aiming among others at small rural enterprises, has been confronted with repayment rates which were well below 20 per cent.

An IFAD mission concerned with the development of rural small industry in Kenya observed a substantial net flow of savings from rural to urban areas, based in part on savings societies, which might have been expected to provide loans for rural investment if rural enterprises looking for finance were able to offer a favourable return. This points to the need to assess closely rates of return in the rural industrial activities being promoted. Profits can often be made more rapidly and with greater certainty in urban trading enterprises.

It should not be ignored, either, that part of the reluctance of commercial banks to extend credit to small enterprises reflects a quite

appropriate assessment of the real costs of making large numbers of small loans, both basic administration costs per loan and special supervision costs associated with the extra risks of lending to entrepreneurs not well known to the banks and who lack collateral.

Notwithstanding these provisos, there does appear to be scope for a balanced but enterprising approach to the provision of credit and/or finance to small-scale industrialists. Programmes for extending small short-term loans of \$50-150 at market rates of interest to groups and individuals to cover working capital have been successfully implemented by Badan Kredit Kecamatan (BKK), Sub-district Credit Institution in Indonesia and ACCION/AITEC in Latin America (Haan, 1989, p.24). The best known scheme for extending rural credit without insistence upon collateral, to landless householders, particularly women, is the Grameen Bank in Bangladesh.

Some LDCs are examining closely the experience of the Grameen Bank and experimenting with adaptations of the approach. It should be kept in mind that the circumstances and manner in which this bank was initiated and has been developed are rather particular and also that it has not altogether dealt with the problem of high administrative and supervision costs for small loans. Nevertheless it is an example which merits study with a view to replication of at least some elements of the approach.

An important ingredient in the Grameen Bank success has been its use of groups (groups of five people, either male or female groups) to serve as mutual guarantors. The group is responsible in case of individual default, thereby reducing supervision costs. This principle could be applied to groups of artisan-entrepreneurs and workshop-enterprises within informal sector manufacturing, as will be discussed again presently.

It should be possible also to encourage savings and loan associations (SLAs) or group savings associations, which are widespread, in Africa especially, to become more involved in short loans for business purposes, including manufacturing, rather than consumption loans of various kinds. One form of these is the Rotating Savings and Credit Associations (RoSCAs) in West Africa, in which loans are paid out to each member in turn and which essentially constitute a system of pooled savings. SLAs also reduce lender's risk by selecting only members in which the group has confidence, and could reduce borrowers' transactions costs involved in travel time and loan request preparation. Their potential, particularly in relation to productive investment, has been very largely neglected by researchers and policy-makers.

The relative insignificance of commercial credit and the existence of alternatives to government loan schemes do not mean that commercial banks should not be involved at all. How can they be induced to become involved in lending in a decentralized form (which is the only way to reach RSIE, as the 1988 UNDP/ILO/UNIDO study argues)? Three approaches may be adopted, singly or in combination: (a) reducing costs by using NGO's working at the local level as intermediaries identifying and screening clients, (b) allowing an increase on bank margins on small/unsecured loans, or providing special subsidized loan funds for small enterprises, (c) providing credit guarantees to banks.

Using NGOs as intermediaries has certain advantages. They often have good grass roots contacts, and are not seen as part of the government by prospective clients. On the other hand, their objectives are usually not just economic, and staff may have little experience in economic matters. The fact that they have independent sources of funding may disguise rather than reduce

lending costs. Reliance on NGOs thus does not solve all problems, but their involvement can potentially improve the availability of rural credit.

Credit guarantee schemes, in which government or donor funds are used to offer a degree of insurance to commercial banks or other credit agencies, are being introduced in a number of countries. An advantage of these is that they involve only 'lubricating' commercial lending institutions rather than replacing them in making loans to SSEs, and need only involve actual use of funds to the extent that there is incomplete repayment by clients.

Simply providing guarantees, however, does not deal with the problem of screening clients and of the risks of lending to large numbers of small entrepreneurs; nor does it guarantee, for this reason, that commercial banks will respond to the incentive provided. Thus the credit insurance scheme in Indonesia, ASKRINDO, under which all loans to small borrowers were guaranteed by government to the extent of 75 per cent, led to heavy government financial losses; while a Credit Guarantee Scheme in Malaysia, under which banks were to provide unsecured loans to small industries up to M\$ 30,000 and to reserve 5 per cent of their loan portfolios for agricultural loans, was still not able to reach a sufficient number of small borrowers (Choudhury, 1988, p.58).

4.3 Infrastructure

Many small industry promotion programmes, following the pattern of setting aside 'industrial areas' for the benefit of larger enterprises, have centred upon the establishment of industrial estates. Because of their locations - unrelated to the distribution of specific resources - they are not obviously suited to agro-industries or resource-based industries generally, except to the extent they provide access to scarce land, power or water supplies.

Nor have they generally been well-designed to meet the needs of micro-enterprises: workshop design has been inappropriately fancy for the needs of the informal sector, leading to unrealistic rent levels; common facilities are often provided with an inappropriate advanced level of equipment, leading to a low degree of utilization; and the estates have often been inappropriately located, ignoring the need for proximity to markets. This was very much the experience in several African LDCs (a.o. Tanzania).

A similar experience was recorded in West Sumatra, Indonesia, where an attempt has been made to provide small and medium-scale industries processing forest and agricultural resources with combined estate facilities. It was expected that this set-up would stimulate linkages, the medium-sized enterprises supplying the smaller ones with inputs and providing know-how and access to export markets. The small firms, however, were mainly dependent on the urban markets of the area, and these were too remote from the estate in question. Moreover, the medium-scale industries, with their better access to and knowledge of markets, soon discovered more lucrative outlets for the raw materials that they were expected to supply to the SSIE.

What emerges from this is that it is essential to design provision of this type separately to suit each category of industry, for large, medium and micro-enterprises. For micro-enterprises allocation of land for construction of own structures may be appropriate, where land is scarce. Very often there is spontaneous development of 'informal sector' agglomerations of workshops and enterprises of different kinds, and it may be better to improve services rather than attempt to create estates artificially. This is the type of

approach followed by the Indonesian household and cottage industry cluster schemes. The starting point is an existing group of cottage industries engaged in similar production lines which are provided with equipment, inputs, training and marketing services. These schemes usually attempt to involve entrepreneurs on a co-operative basis.

Where small estate facilities are appropriately designed and located to accommodate clusters of 'informal sector' manufacturing establishments, a particular advantage which has emerged, in Kenya and Tanzania for example, is that dealers and other customers come to the cluster to make purchases, attracted by a concentration of workshops providing competition and choice of products. A particular advantage of providing simple lockable premises for rent or progressive purchase is that they directly assist the large proportion of 'open air' establishments and that they are cheap.

Industrial estates are often seen as a means of providing electricity and other infrastructural needs of large or small industry. These are clearly less suitable for rural industry, which is usually dispersed: here rural electrification is clearly important, and particularly important if it is desired to eliminate the special disadvantages which rural industry has compared with urban. The development of metal workshops in rural Asia in particular has been assisted by rural electrification. Even here there are major differences between countries: especially in African LDCs, rural electrification is still uncommon, and probably covers no more than 1 per cent of the households. This reflects low overall population densities and low development levels.

Choudhury (1988, pp.39-40), commenting on the high concentration of agro-industries in urban areas, argues that in Asia there has been migration of rural and agro-industry, especially of large enterprises, to the urban areas, as a result of the lack of adequate infrastructure in rural locations. China is taken as a major example of the adoption of a strong, positive strategy in this regard, achieving effective dispersal of industries to rural areas through the development of township enterprises.

4.4 Technology

In our discussion of the macro-policy environment affecting large and small industry it was mentioned that for different reasons research and development is likely to be very much biased towards, if not limited to, large-scale enterprise. It is clearly important that measures be taken to redress this balance. But the urgency is wider than this, because of the interdependence between agriculture and rural industry development. While the latter is directly dependent upon the level of agricultural development and incomes, the need, particularly as rural population density increases, is in turn to raise agricultural productivity by upgrading rural technologies, with the help of rural industries.

Rural technologies here relate to a number of rural sectors - agriculture and livestock production and processing, energy (e.g. biogas), transport, construction and the production of domestic hardware and other utensils - all of which offer possibilities for rural-based SSI production. The first need is to assess the possibilities existing for the development of appropriate technologies.

While local circumstances and possibilities will vary, there also exists an international 'shelf' of appropriate technologies on which it is sensible

to draw first. For this purpose a search capability, that is a domestic institutional mechanism, with international back-up, capable of identifying possibilities and testing their relevance and adaptability to local requirements is needed. In LDCs there are only a few institutes dealing with appropriate technology and these are often peripheral, for reasons of staffing and finance. This has limited their activity and also resulted in the development of technologies that are unsuitable or outdated by the time they are marketed. In this context, technical co-operation among developing countries (TCDC) could play more prominent role, some of the larger countries having developed a whole range of suitable technologies. Multilateral organizations like UNIDO are already intensively involved in stimulating TCDC, but the technology flows are still predominantly "North-South".

Once the products to be manufactured have been identified, the next task is to secure their effective production. In most countries little or no institutional infrastructure exists for the dissemination of technological knowledge to support small-scale industry production, in contrast with what is attempted towards peasant producers through agricultural extension. As Carr (1989) notes, there are very few examples of rural industrial extension services. What is needed, therefore, is some analogue of the agricultural extension service. As in the case of the latter, of course, it is important that the service has a directly useful, practical 'message' to offer. Donor agencies have often filled this role, albeit on a project-by-project basis rather than on a permanent basis. UNIDO, for example has helped to introduce new technologies for clay products in rural areas in several African countries. A recent UNDP project has introduced, among others, new types of flour mills and hand tools in Laos. In Malaysia, the Government's Technology Display and Resource Centre, based in Kuala Lumpur, has had some success in reaching RSIE entrepreneurs by subsidizing technology study tours and by organizing travelling technology exhibitions. These are, however, only temporary and partial solutions.

Sub-contracting schemes often have a technology transfer component. The experience in various South Asian countries, however, shows that contracts are frequently not honoured in this respect, the larger companies being insufficiently interested in improving the technological capacity of the smaller partners. Such arrangements can be made to work where there is strong mutual interest, as in the case of a cement factory in Western Sumatra, Indonesia, which became dependent on small metal working enterprises in the area for the production of simple spare parts. It helped these to improve the quality of these products, and there was a spin-off in the form of quality improvements in the agricultural equipment produced by the small enterprises as well.

It has been suggested (Haan, 1989, p.56) that a 'market approach' to appropriate technology dissemination be adopted, under which the introduction of new technologies takes place via the producers of the equipment or product. Small-scale entrepreneurs here are provided with designs and technical assistance during initial production runs, as well as credit, assistance in marketing, etc. This ought to avoid any persistence in 'pushing' AT products that, however interesting, are not practical and therefore are non-marketable.

Another issue is the upgrading of technology, in particular in the cottage industry, to allow RSIE to "graduate" to larger scale formal manufacturing where the environment is favourable for RSIE growth. Not all rural industries will have much potential in this respect, and the potential will vary between countries and branches. Occasionally, entrepreneurs are found who are already turning out relatively advanced products. Their

experience should be carefully studied, as it may provide starting point for further development of RSIE.

The manufacture of metal products, especially if linked to agricultural development, appears to be capable of the greatest extension and diversification. Development of furniture making and other forms of carpentry appears closely linked to quality: while rural market demand for rough, low quality furniture may become saturated, improvement in product quality and design can allow enterprises to tap higher income markets otherwise served by urban factory production. This raises the question, again, of training and extension related to improvement of products.

4.5 Small producers' associations

Technical extension services using the market approach could be based on clusters of informal sector producers. A recent IFAD mission to Kenya has identified these as a potential major vehicle for promotion of the sector. These clusters have spontaneously grown in cities and rural towns in most developing countries, and are very often divided according to particular activities. This is indicative of externalities perceived by small producers, just as externalities lead to concentrations of large industries. Within these clusters, new technologies, production methods, etc., are likely to spread rapidly, which could make them good starting points for attempts to upgrade small industries. From these urban clusters, innovative methods and new products often be expected to "trickle down" to the more dispersed rural producers.

Encouraging associations of entrepreneurs in these clusters can bring significant advantages, some of which are normally available only to large enterprises. These include trade discounts on purchases of materials, bulk orders from wholesalers or from institutional buyers such as schools (a major disadvantage of many small, independent producers is their inability to fulfil such orders on their own, especially of standard design and quality), receipt of sub-contracts from large firms, collective savings schemes, and so on.

The existence of such associations is likely to facilitate also the development of apprenticeship schemes: as they can provide training a market environment. With respect to subcontracting the UNDP/GON/ILO/UNIDO study of 1988 argues (p.xxii) that information exchanges are likely to be more effectively operated by industry associations than extension agencies. More generally, they could provide for articulation of the felt needs of small producers, negotiating on infrastructural requirements, licensing arrangements, problems of harassment, and even national policy instruments where large enterprises at present have substantial influence

Some countries have already moved in this direction. In francophone LDCs in West Africa, for example, Chambres des Métiers have been established in a number of countries. Maldonado (1989) refers to an ILO project for the organization of sectoral small producers' groups in Mali, Togo and Rwanda initiated, starting with urban areas, in 1982. In Rwanda 71 grassroots associations had been organized, 8 intermediate trade federations and a confederation (KORA) in the capital, Kigali. These had negotiated for formal recognition, initiated collective savings schemes to provide credit (in Kigali the movement established its own bank), set up raw material schemes and organized training along the lines of established apprenticeship schemes. A 46 per cent increase in incomes among the involved entrepreneurs in Kigali is reported. Maldonado (p.82) comments that

the participatory approach has proved more effective than the traditional spoonfeeding methods, not only because its effects are more durable and the activities it launches can be continued by those directly concerned, but also because the cost per beneficiary is lower and hence the returns on investments are higher.

While some intervention may be necessary to stimulate the emergence of SSI associations where no previous organizational basis exists, experience in several Southeast Asian countries shows that organizations must never be imposed on the entrepreneurs, and that they are most likely to be successful if they focus on a narrow range of common, pressing problems, and if the solution of these problems results in clear, tangible advantages to individual members.

4.6 Entrepreneurship and Training

As noted by Haan (1989, p.36) 'entrepreneurship' may be said to encompass two distinct elements, (i) the ability to perceive profitable business opportunities and (ii) the capacity to coordinate and control the work which is being done. With respect to the first ability, it is doubtful whether this can be 'taught' or in any way developed through training. What is important is to secure the right macro-economic framework or 'enabling environment' under which small enterprises can thrive, as already discussed. Identification of product possibilities and their dissemination, particularly through SSE 'clusters', represents more direct intervention. This involves entrepreneurs perceiving opportunities through a 'demonstration effect'.

The second element, management skills, can be taught, but many of the successful small entrepreneurs in developing countries have already learned such skills as formal sector employees before setting up their business. Formal management skills, such as bookkeeping, may often not be of much use for the smaller entrepreneurs (see, e.g. Harper 1988 and McKenzie 1989). But some kind of formal administration is essential if an RSIE is to grow beyond a point where informal management methods are sufficient - e.g. when an application for bank credit must be made to acquire investment capital. Likewise, to keep abreast of business developments, small entrepreneurs, who may lack other information channels, may need special institutional arrangements to be introduced to new marketing or organizational methods. For this purpose, the Centre National pour le Perfectionnement de la Gestion in Niger employs businessmen to serve as trainers at seminars, to ensure the transfer of up-to-date knowledge and practical skills.

It is often assumed that unemployment in developing countries is the result of education which de-emphasizes practical skills and, conversely, that training in blue-collar skills will lead straightforwardly into opportunities for practicing crafts through self-employment. The UNDP/GON/ILO/UNIDO study observes here (p.xix) that training centres have mostly been ineffective as promoters of RSIE and, apart from being urban-oriented, 'usually attract, with doubtful results, new entrants rather than those engaged in RSIE'. In Kenya young graduates of village polytechnics have actually been found less acceptable to informal sector entrepreneurs as recruits than those without prior training. Rural skills training centres often show over-concentration on one or two blue-collar skills, such as carpentry, leading to local market saturation. Tracer studies of leavers, which would indicate the rates of return attached to such training, are generally scarce. It seems evident that only a minority succeed in achieving effective self-employment in micro-enterprise.

A more effective approach, again, may be to build on what is there, by developing existing informal apprenticeship systems which exist - but are not evenly developed - in all countries and play a key role in skill formation. Evidence provided by Fisseha (1985) showed that the proportions of SSE proprietors who had themselves been apprentices were in Jamaica 78 per cent, Honduras 52 per cent, Egypt 28 per cent, Bangladesh 25 per cent and Sierra Leone 90 per cent. The above does not imply the adequacy of informal apprenticeship systems. Their effectiveness is subject to the limits of what the master craftsman himself knows. Moreover, with apprentices often leaving at the end of the training period, frequently to set up in direct competition with the owner, there are disincentives to the provision of such training which may not be compensated by fees charged.

Both entrepreneurial and apprenticeship training may need to be linked with credit provision for the purchase of relevant equipment or tools. UNIDO, for example, is preparing two pilot projects for SMI entrepreneurship development (in Fiji and Vanuatu) which combine management consultancy with technical advice, training and the provision of serviced workspace. While the centres are to be initially subsidized, they are to become self-supporting as productive capacities develop.

4.7 Raw materials

As was observed with reference to Thailand in Chapter 1, a significant proportion of rural industry comprises agro-based or, more broadly, resource-based industry, including those based on forest products. Availability of basic materials may affect RSIE at particular times of the year: Choudhury (1988, p 39), for instance, notes with reference to Asia that due to seasonalities in agricultural production, 'serious constraints are sometimes faced in raw material procurement' by industries which have grown beyond the level of part-time household processing of such crops as may be available for the purpose. While the household industries mainly serve subsistence purpose, and will therefore in general not be growth-oriented, the larger ones are seriously restricted in their expansion if there is no stable growth of agricultural production - and a smoothly functioning trading and storage system for agricultural crops. Both production and commercialization problems in the groundnut sector have, for example, led to severe problems in the vegetable oil industries of several African LDCs. RSIE vulnerability with regard to the supply of agricultural inputs could be reduced in many cases if an umbrella organization - an SSI association or a SIDO - would make assessments of supply needs and constraints and would organize bulk-buying for enterprises processing the same type of inputs.

Depletion of resources can threaten the continued existence of RSIE. This problem is on the whole most obvious in LDCs where the natural environment sets limits to the expansion of production even for subsistence purposes (small island economies, Nepal, Bhutan, the Sahel countries, Yemen), but it is also emerging elsewhere. Indiscriminate felling for wood exports has removed much of the forest in a number of LDCs. While the loss of RSIE income from forest products such as resins would be outweighed by the earnings of the wood industry, the lack of proper replanting policies have resulted in climatological changes and loss of soil fertility which eventually have a negative impact on crop production, and therefore on the supply of inputs. Sound agricultural policies which are based on the notion of ecologically sustainable development will in the long run also benefit RSIE development.

5. INTEGRATED AGRO-INDUSTRY INITIATIVES

Some recent studies have argued strongly for an 'integrated agro-industrial development' approach.⁴ Like 'integrated rural development', this appears tautologically a good thing: 'unintegrated rural development', for instance, is not likely to be put forward, one might think, as an alternative strategy.⁵ The real content of such an approach, therefore, needs to be carefully assessed.

A particular case which is comparatively easy to define and accept is where a new crop or activity is introduced to an area. Here crop production and processing/marketing arrangements may need to be introduced together since, on the one hand, small producers cannot be expected to take up the crop if they do not immediately see where or how it can be processed or marketed and, on the other, processors cannot be expected to invest in productive capacity without reasonable assurances that adequate throughput will be forthcoming.

We may classify differently the case where this kind of integrated approach is applied across the board to a range of crops within an agricultural region. An example put forward by Choudhury (1988) is that of the Farmers' Organization Authority (FOA) in Malaysia, based on 202 farmers' co-operatives and 1039 agro-based co-operative societies, 'involving a diverse range of activities from crop production to small-scale processing'. Although the FOA was mainly involved in supplying inputs and marketing produce it had success with a limited range of programmes relating to agro-based enterprises. Choudhury asserts (p.73) that this 'brings out the importance of the linkages from production through to processing and distribution necessary to ensure the development of viable small scale enterprises'.

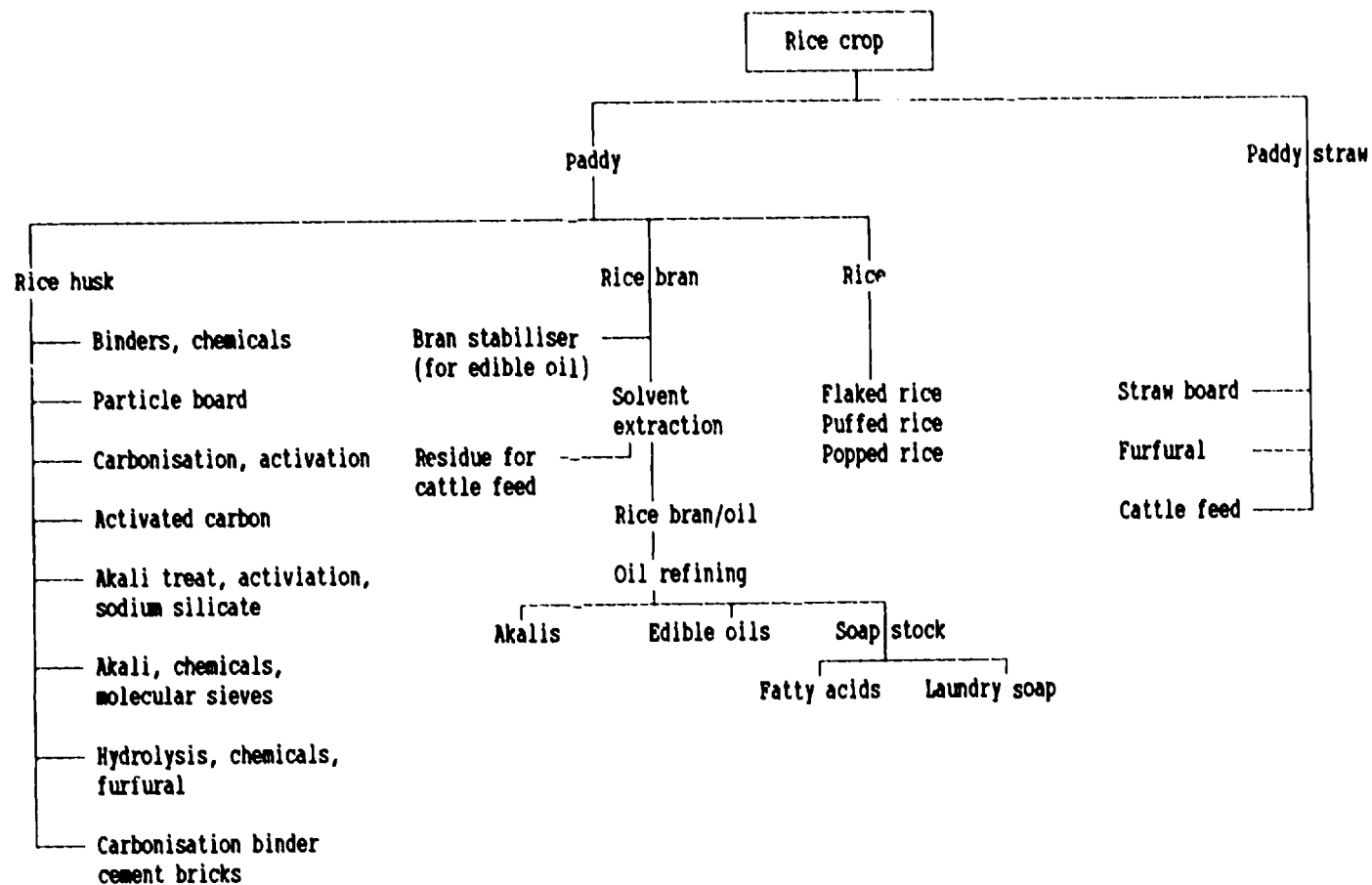
A schematic outline of a potential 'agro-industrial complex' based on rice (Figure 1), is put forward by Rao (1988). This indicates potential linkages, but leaves out the question of economies of scale, size of local markets and other factors determining economic feasibility and which might make production in urban locations preferable, or even production in the industrial countries, which may provide stiff competition from efficient modern plants. What the future shows is that potential linkages of this type need to be closely explored, taking into account existing experience in other countries. How far rural location of linked industries is possible needs to be considered.

The promotion of agro-based industries in rural areas formed part of the Seventh Five-Year Plan in India. Some of these (pickles, spices, dals, bread, biscuits, pastry, rice-milling, confectionery, groundnut and rape-seed oil, sago and flour) were reserved for the small-scale sector. Product reservation policies were discussed above. A more positive policy has been the involvement of District Industries Centres at the district level in the promotion of resource-based agro-industries, supported by District Rural Development Agencies concerned more widely in rural development programmes. A very broad approach has been proposed in the Jacmel zone of Haiti, where

⁴ See various references to publications by the Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP), particularly those by Rao (1988) and Choudhury (1988).

⁵ In fact just such an approach to economic development strategy was proposed, and by a leading development economist, Albert O Hirschman, in his The Strategy of Economic Development, Yale University Press, 1958, which argues for unbalanced growth as a means of creating positive impulses for change.

Figure 1: Integrated agro-industrial complex for rice



Source: Rao (1988).

RSIE promotion would be part of an overall programme of stimulating agricultural production, improving physical infrastructure (roads, wells, markets) and education. While some basic processing of foodstuffs (maize, cassava) would be a first priority, the more costly projects aiming at wider markets (fruit juice, coffee processing) would only be taken up after improvements in infrastructure and agricultural output.

An approach to integrated farming based on one crop is contract farming, in which a central processing plant supplies farmers with seeds and other inputs. By-product industries could be linked to such schemes. Contract farming is gaining in importance, but may not always be suitable for LDCs, unless extension services and infrastructure are provided as well.

In general, a great deal of planning, policy making and promotional effort, whether directed towards agriculture or industry, is based on a horizontal perspective. For example, rural development planning may be decentralized to the district level with district agricultural officers concerned with promoting the full range of crops grown by farmers.

An alternative is the filière approach, which takes a 'vertical' perspective, following the 'thread' or filière from the production of basic natural resource inputs through a whole series of possible linked industries. At each link in the chain appropriate policy questions can be posed, such as whether production can best be developed on a small scale or large scale, whether tariffs or taxes bias this choice, whether complementarities (e.g. subcontracting) between large and small enterprises can be developed, whether urban or rural locations are preferable, whether particular constraints or opportunities exist at specific points, and so on. Possible complementarities between manufacturing and agricultural production - as in contract farming - or natural resource supply are even more obvious.

The filière approach is particularly relevant to resource-based industry by focusing on the availability and production of the basic resource, as in the case of wood supplies. The approach is also more easily tailored to dealing with the basic needs of the mass of rural consumers, unlike an urban-based import-substituting factory which is looked at in isolation. For example, timber production may lead on to sawmills, rural furniture-making, charcoal making for rural energy, and building poles for rural house construction, as well as a host of other rural producer and consumer items. It may thus form part of a basic needs strategy.

UNIDO is involved in the development of the livestock filière in Niger. Apart from analyzing the three main "sub-filières" - meat, hides and milk products - a preliminary report on the potential of the filière also studies possible complementarities between small scale and modern large scale production, and the role of related industries (animal feed and veterinary drugs).

UNIDO Integrated Programme Approach

The UNIDO Integrated Programme Approach aims at promoting the integrated development of industrial systems. To this end, the application of the programme approach (PA) involves the formulation of integrated sectoral development programmes made up of clusters of projects which are complementary and mutually reinforcing. The programmes are based on national priorities and a systematic analysis of bottlenecks within a given sector or sub-sector. Specialized issues such as energy, the integration of women and environmental considerations can also be addressed within the context of the PA.

UNIDO's Programme Development Support Unit (PDSU) was created in February 1989 with the purpose of applying the PA to the formulation of integrated development programmes. Three motives led to the establishment of this unit. Firstly, there had been a growing realization that implementing technical assistance within a programme framework may provide an enhanced opportunity for increasing impact. Secondly, and following from the indications of some donors, it was considered that the volume of implementation may be increased when working in a programme context. Thirdly, it was envisaged that integrated sectoral programmes would become a key part of country programmes.

The PA is applied at three levels of detail. All three applications aim at the preparation of an integrated industrial development programme or programmes. An integrated development programme contains a set of technical assistance and investment projects for industry as well as policy prescriptions. The three steps in applying the PA involve: firstly, the preparation of an industrial sector typology to identify patterns of sectoral development among large numbers of countries. This permits an assessment of the main bottlenecks and opportunities facing countries with differing patterns of sectoral development. The second step involves preparing an integrated development programme for a country or countries from one or more of the identified patterns of industrial development. The programme can thus draw on immediately relevant research and also have applicability to other countries sharing the same development pattern. The third step involves the preparation of an integrated programme for one country using the MEPS industrial simulation model to assess the effects of alternative strategy and programme options. The difference between steps two and three is the level of quantification rather than any change in concept. Each of the three steps complements the others, although each can be applied independently.

The concept which underlies all three applications and which gives an integrated character to the programmes is that of an industrial system. Thus, all work with the PA begins with a disaggregation of the given industrial system. A system's most distinctive processing, production, distributional, commercial, policy or other operations are identified and these are termed system "components". The next step requires an assessment of the constraints which impair the operation of each component, of the linkages existing between components, and of the linkages between components and other areas of the national economy. A quantitative picture is thus obtained of all the constraints which would have to be ameliorated if the system is to be developed as an integrated whole.

Alternative strategy options for the system are next considered. This is necessary because it may not always be economically optimal to seek maximum development of all components of a system or of all the potential linkages in a system. Having considered the strategy options and having related these to on-going activities, government and private sector objectives, a preferred strategy is selected. The integrated programme is then formulated to implement that strategy and will be made up of technical assistance, investments and policies required to simultaneously release all the bottlenecks which hinder the development of the system components. In this way the system is moved in an integrated manner towards the strategy goal.

An industrial system may comprise one or more sectors or sub-sectors. For example, the fertilizer industrial system involves agriculture, mining and even the metalworking sub-sectors. It should thus be emphasized that the resulting development programmes are multi-project packages, frequently addressing problems arising in more than one sector. It may sometimes be required that different technical assistance agencies participate in the

implementation of such programmes. In this respect the programmes may also be thought of as providing a framework for co-ordinating inter-agency co-operation. Similarly, funding of the projects making up the programme may be undertaken by more than one donor.

Due to the quantification involved in assessing the performance of system components, applying the PA at a country level also provides a base line for measuring the impact of a programme (the importance of impact assessment is stressed in "Orientation Paper: Fifth Cycle Intercountry Programme for Africa (1992-1996)", p.6, section D).

The results of applying the PA in the course of the past year has illustrated in a practical manner the feasibility of obtaining "coherent clusters of projects which are complementary and mutually reinforcing". PDSU is presently finalizing ten integrated development programmes in the agricultural machinery, pesticides, fertilizer and fisheries industries of eight African countries (Arab Republic of Egypt, Central African Republic, Cote d'Ivoire, Ethiopia, Ghana, Nigeria, United Republic of Tanzania and Zambia). A further fifteen programmes are also under preparation. The total value of technical assistance identified for these ten programmes amounts to U.S.\$ 18.6 million. Identified investments amount to U.S. \$ 89.7 million. In all cases local authorities participated directly in the formulation of the programmes.

The PA can respond to the needs of both countries and international agencies. The interest of a member state in applying a programme may be preceded by a UNIDO study at global or regional level identifying countries with similar development options. This was seen after a typology study on the fisheries industries of sixty four developing countries. Typology work was also recently carried out for an international agency so as to identify appropriate countries for the receipt of rehabilitatory technical assistance in agro-food industries. A government may request the preparation of an integrated programme at either the second step of the PA or a fully quantitative programme at the third step. Cape Verde is a recent example of the latter where a fully quantitative programme was designed for the agro-food enterprise "Justino Lopez" using the Methodology for the Assessment, Programming and Management of Production and Consumption System (MEPS) industrial simulation model. A further example is the use of the MEPS model in programming work on the fisheries industrial system in Namibia being carried out at present.

Application of the PA requires that the sectors to be treated be defined beforehand (the PA does not determine inter-sectoral resource allocation). Sectors to be worked on could be identified during country programming missions or by the government. Given a list of sectors to be considered, the PA could be a valuable tool for country programming work.

6. WOMEN IN RURAL SMALL-SCALE INDUSTRY

Women play a considerable, usually underreported, role in rural small industry in LDCs. According to rough estimates, RSIE is a supplementary source of income for, on average, some 50 per cent of women engaged in agriculture, (UNDP/GON/ILO/UNDP, 1988, p.xxii). Food processing, garments and crafts (including the production of basic household items such as mats and baskets) are amongst the most common activities. Female non-farm activities overlap very much with household-based enterprise, so that much of the discussion of the preceding section applies. These are generally traditional activities with low productivity and profitability. This is not to say that they cannot make a very considerable difference to household income: a rural survey of Begumganj, Bangladesh, found that women participating in rural industries received on average an annual income equivalent to US \$237, which compared very favourably with a per capita national income in that year of \$140, while the average monthly expenditure of such households on nutritious food items was very much higher than for other families (CIRDAP, 1988).

Women are subject to various constraints with regard to remunerated work. In most rural societies, their activities are largely restricted to the household and the plot of family land. This is particularly so in Africa. For instance, hours may be spent in collecting water and fuelwood, tasks which can be alleviated by rural water and energy policies. Appropriate technologies may also be developed to economize time in domestic food processing of cereals and other household activities in order, again, to release time for income-generating activities. Despite the comparative neglect of the field in governments' development plans, a number of significant successes have been achieved.⁶

While in many cases women's household work and subsistence farming restrict their scope for other activities it is often also considered socially undesirable for women to overstep the boundaries set by traditional roles. Education as well as travelling alone are often out of the question, and the consequent lack of access to markets, sources of non-household skills and education severely limit their participation in industry, unless it is in the traditional cottage industries referred to above. And even within the traditional industries not all branches are open to women - metal-working, for example, is generally "taboo" for women.

A technological constraint affecting women in RSIE is the usually inadequate technology in household manufacturing itself. The two major constraints to increased productivity mentioned by women engaged in rural industries in Begumganj, Bangladesh, in the field survey already referred to were 'low level or antiquated technology', cited by 53 per cent and lack of skills/technical knowledge, mentioned by 57 per cent. The next most important being 'difficulties in getting raw materials', 14 per cent (CIRDAP, 1988, Volume II, p.36). Improvement would appear to call for a combination of identification and selection of appropriate technologies, credit or hire purchase facilities for new equipment, perhaps organized through groups, and training where needed.

Absence of technical skills specifically impedes women's entry into some of the more technologically-upgraded activities which might offer more than marginal incomes. Women thus often lose their jobs when technologies are

⁶ For numerous examples, see Local Production of Appropriate Technology for Rural Women, Unit for the Integration of Women into Industrial Development, PFD 142 (SPEC), UNIDO, Vienna, November 1989.

modernized, although this is not just a consequence of their illiteracy or lack of required skills; there is often a subjective factor at play - men are supposed to be "naturally" qualified to handle new technologies, women lack the self-confidence to get acquainted with them. The latter problem is often encountered in training programmes focussing on women.

A related problem is that technological change may lead to the decline of small-scale manufacturing activities in which rural women are traditionally well-represented (e.g. the replacement of traditional pottery and wickerware by metal and plastic products). In Niger, development plans for the livestock filière envisage a major expansion of production based on the whole range of animal products (meat, hides, milk). Such plans should take account of the fact that women are traditionally the makers of milk products and certain leather goods. It should therefore be attempted to identify niches for their traditional products (assistance could be provided to upgrade their quality) and to integrate women in modernized small-scale production.

Credit constraints, while a common RSIE problem, are more severe for women, and suggest that a different approach is needed in their case. Since women are more closely tied to household farming activities and involved in selling and service activities, it is appropriate that credit schemes should encompass a mix of activities and not be restricted to manufacturing. For the socio-cultural reasons mentioned, women lack freedom in operating independent enterprises and find it more difficult to seek formal credit. Sometimes there is even a legal constraint - women are not always allowed to sign contracts. Women's associations can be valuable here, providing support for initiating and maintaining business activities and for obtaining credit. Credit guarantees may help them to secure working capital and materials from suppliers.

Some women's projects, particularly those for young women, have focused on rather peripheral activities (tie-dye, for example) in some African LDCs. These often provide quite marginal incomes for a comparatively small group of people. It seems much preferable to 'mainstream' women by adopting major programmes which benefit both men and women, and by adopting women's programmes and measures which benefit women in significant numbers and in significant activities.

One example of a successful project is that of SEWA, the Self-Employed Women's Association, in Ahmedabad, India, although this particular project is urban-based. The association has organized some 25-35,000 poor, urban women in a wide range of occupations as petty vendors and hawkers, labourers, service workers engaged in cleaning and laundry, and also home-based industries: producing cigarettes, incense sticks, snack foods, garments, brooms, etc. The association provides certain services such as credit, training and assistance in marketing, but also serves to articulate the views of women entrepreneurs as a group, in dealing with merchants, the police and municipal authorities, helping to reduce harassment. The project thus covers all types of activities. It follows a target group approach, in order to help a particular group of people. It is participatory. And it brings out the need to influence policies in order to secure the appropriate environment for successful activity.

7. SUGGESTIONS FOR THE DEVELOPMENT OF RURAL SMALL-SCALE INDUSTRIAL ENTERPRISES (RSIEs)

7.1 Overall strategy components

Efforts to promote RSIE in LDCs are only likely to be successful if the macro-economic framework provides the right "enabling environment" for its development. This would include, among others: a shift of priorities away from import-substituting industries based on imported technologies and inputs; the provision of tax incentives; tariff structure and interest rate revisions, etc. To ensure the implementation of such macro-policies, attention should also be given to strengthening the executive agencies.

The most crucial macro-policy issue however is the overall strengthening of the rural economy, paying close attention to the relations between activities, that is, to linkages, as these tend to be particularly weak in LDCs. RSIE programmes should not be conceived in isolation of this overall priority; in many LDCs the sector may moreover be too small to warrant a separate programme. Ensuring the follow-up of donor's rural development programmes (which often stagnate when the donor agency is no longer present) is also essential, as industrial development requires long-term continuity.

Apart from measures to increase farm production through price incentives, rural credit, land reform and the introduction of improved, ecologically sustainable production methods, strengthening the rural economy would include improved education, road and power infrastructure, etc. This would provide a better raw material base for local processing, and would expand the local market for tools and consumer goods produced by RSIE. In areas where the domestic resource base displays sufficient potential, the establishment of integrated agro-industrial complexes, or the establishment of a network of production activities based on the filière approach, can be contemplated.

The role played by women in rural development is crucial, but tends to be under-reported. Women, in fact, are responsible for a large part of agricultural output, and are strongly represented in many micro-enterprises in the RSIE category. Policies and measures which do not take into account the specific role, problems and potential of this category of producers are only partly effective in stimulating RSIE growth. Such policies should therefore also focus on special issues regarding women's involvement in the rural economy, such as:

- reducing household burdens (e.g. by improving local water supply) to increase the time available for remunerative activities;
- improving access to general education and technical training;
- improving access to credit;
- removing inequalities in legal status.

While a special awareness of the problem of women's participation is essential, and while special measures are needed, the general approach should be one of "mainstreaming" women's activities rather than treating them as a separate group, as this tends to marginalize them.

In many LDCs, modern small-scale industry is as yet of minor importance in rural areas. It is therefore important that policy measures take account

category. These enterprises are often subsistence rather than market-oriented, and usually rely on traditional skills and technologies. To enhance their contribution to industrial development in rural areas, special attention must be given to technology and skills upgrading, access to local credit and to energy sources. Assistance should be provided to identifying niches for craft products from household enterprises in international markets; this would also involve measures to increase product quality and design.

Policies promoting RSIE should take into account minimum economic size, infrastructure issues, etc., when considering location issues. While dispersal helps to create local employment and income opportunities and reduces migration to large urban areas, it is often not possible to create viable units larger than micro-enterprises at the village level. For larger units, rural towns may be more appropriate locations. The most effective way to upgrade micro-RSIE enterprises themselves may be by concentrating support efforts on clusters of such units located in urban areas but dependent on markets in and raw materials from the surrounding countryside.

7.2 Institutional framework

Given the emphasis on providing a stimulating macro-economic environment, it is essential to ensure that the relevant ministries (for industry, planning and agriculture) have the capacity to carry out the required economic and policy analysis, are committed to a review of existing policies, and co-operate closely to formulate a set of coherent policies and measures for RSIE. The agencies actually charged with the execution of the policies and measures may also be need to be strengthened.

The requirements with regard to expertise and co-ordination are even higher if integrated agro-industrial complexes or filières are to be part of a future approach to RSIE development. As the required human resources are usually in short supply in LDCs, technical assistance may be sought to provide short-term expertise and training for national experts.

Institutional arrangements should also include the involvement of RSIE entrepreneurs in policy-making and execution, as an approach to RSIE development. A "top-down" approach is more likely to fail. It is particularly important that the government agencies have a presence in the field, that local co-ordinators of programmes have autonomy of action and that the agencies co-operate closely with local groups of entrepreneurs. Highly centralized policy execution has proved inefficient in promoting RSIE.

Where there are no local groupings, it should not be attempted to create government-run associations. These tend to be seen by entrepreneurs as representing the government's interest rather than their own. It is usually better to rely on NGOs experienced in grass-roots work. These can offer training, extension services, financial support, marketing, etc., on a group basis, enhancing the interaction between entrepreneurs.

Already existing spontaneous agglomerations or clusters of RSIE producers could be encouraged to interact more intensively. If certain activities for their joint benefit (raw material purchases in bulk, bulk orders for products, collective savings and loan schemes, training schemes, collective sub-contracts, etc.) are supported, the entrepreneurs' awareness importance of networks among enterprises - for production, marketing, political or other purposes - could be enhanced.

The experience of most LDCs with general-purpose small industry development organizations (SIDOs) has been negative, as they tend to accumulate too many functions and are usually urban-based, which is a special drawback from RSIE. It has been suggested by many authors that they should concentrate either on co-ordinating the activities of specialized SSI support agencies, or specialize in a few areas where they have proved their merit. With regard to RSIE, it is important that activities should be decentralized where this is feasible; this would often involve some re-training of SIDO personnel to increase their understanding of specifically rural problems.

LDCs generally have very little capacity for the development of new technologies, and setting up national R & D centres would usually not be feasible. There is, however, a "shelf" of readily available technologies that are appropriate or can be adapted to the specific needs of RSIE in LDCs. The identification, diffusion and, where needed, adaptation of such technologies could be the task of national technology agencies. These could also monitor improvements of existing technologies resulting from everyday practice in domestic industrial enterprises. International assistance can play a very useful role in the establishment of such agencies.

Although the basis of the system would be a national centre, it could have local agents. These could provide on-the-spot assistance in technology matters to RSIE, in the manner of agricultural extension services. These agencies should work in close co-operation with other agencies involved in RSIE support, and with government bodies involved in the relevant policy issues.

7.3 Other key issues

Infrastructure

Wherever industrial estates are provided, they should be designed to suit the different needs for different kinds of industry. The usual type of estate is unlikely to be suitable for RSIE, as it is usually too remote from these industries' primary markets and sources of supplies; facilities are also likely to be too expensive.

Where spontaneous clusters of small enterprises have emerged, it may be better to improve services to these rather than to create new estates. This reinforcement of evidently viable spontaneous developments has the added advantage of being far less costly to the authorities, and less of a financial burden to the small entrepreneurs. Services can be kept simple: providing some sort of stalls, electricity and water.

For dispersed rural industries, estate-type facilities are obviously not suitable. Here rural electrification is clearly important, particularly if an LDC follows an explicit policy of eliminating the special disadvantages of RSIE in comparison with urban industry.

Subcontracting

While subcontracting is not always appropriate, as it depends on a combination of specific factors with regard to products, available skills, etc., it may be helpful to RSIE in securing urban outlets and even export markets. To compensate for the usually weak position of the individual small enterprise vis-a-vis the parent company, it is advisable for the small enterprises to form associations which charge themselves with the dealings

with parent companies. Governments should also provide a clear legal framework for subcontracting arrangements, and ensure that the relevant regulations are complied with.

The development of RSIE can be greatly enhanced by paying special attention to the transfer of technology from the parent firm to the small enterprises. While the RSIE group involved in a particular subcontracting arrangement should press for this transfer, and while the contract between the firms should specifically stipulate it, the best way to guarantee that the technology of the small enterprises is upgraded is the existence of a strong mutual benefit for both sides involved in the arrangement. Some form of counselling for RSIE may be needed to ensure that they perceive and secure all the benefits from subcontracting.

Credit

Credit may not always be an issue in those rural household enterprises whose function is purely to provide a subsistence income, but the fact remains that the absence of credit is a major obstacle to growth of RSIE in LDCs. Given the fact that the formal credit sector is small and not well-adapted to small enterprise, other ways must be sought to provide loans to RSIE.

At the basic level, the encouragement of small savings and loans associations could be contemplated. In a number of LDCs, traditional structures of this kind exist. Their activities could conceivably be expanded to provide modest loans to the smallest RSIE enterprises. The absence of collateral in the usual sense of the word is compensated for by the fact that members know each other well enough to select only borrowers which inspire confidence, and social pressure guarantees the repayment of the loans.

At a more formalized level, co-operative banks can be made a basis for RSIE financing. The Bangladesh Grameen Bank is a successful example of this type of financial organization. Again, formal collateral is not required, being replaced by a system of collective responsibility. This example deserves close study but, as in the case of the savings and loans associations, its applicability depends very much on the existence of a traditional set of values with regard to money lending among the targetted groups.

Where the commercial banking system is sufficiently developed, it could be made to serve RSIE, under certain conditions. Its overhead costs for small loans could be reduced by involving grass-roots NGOs in local lending; the government (possibly supported by donor agencies) could provide special subsidized loan funds for small enterprises, or credit guarantees. As in the other cases, LDCs would do well to study the experience with various credit schemes in other developing countries before designing their own.

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