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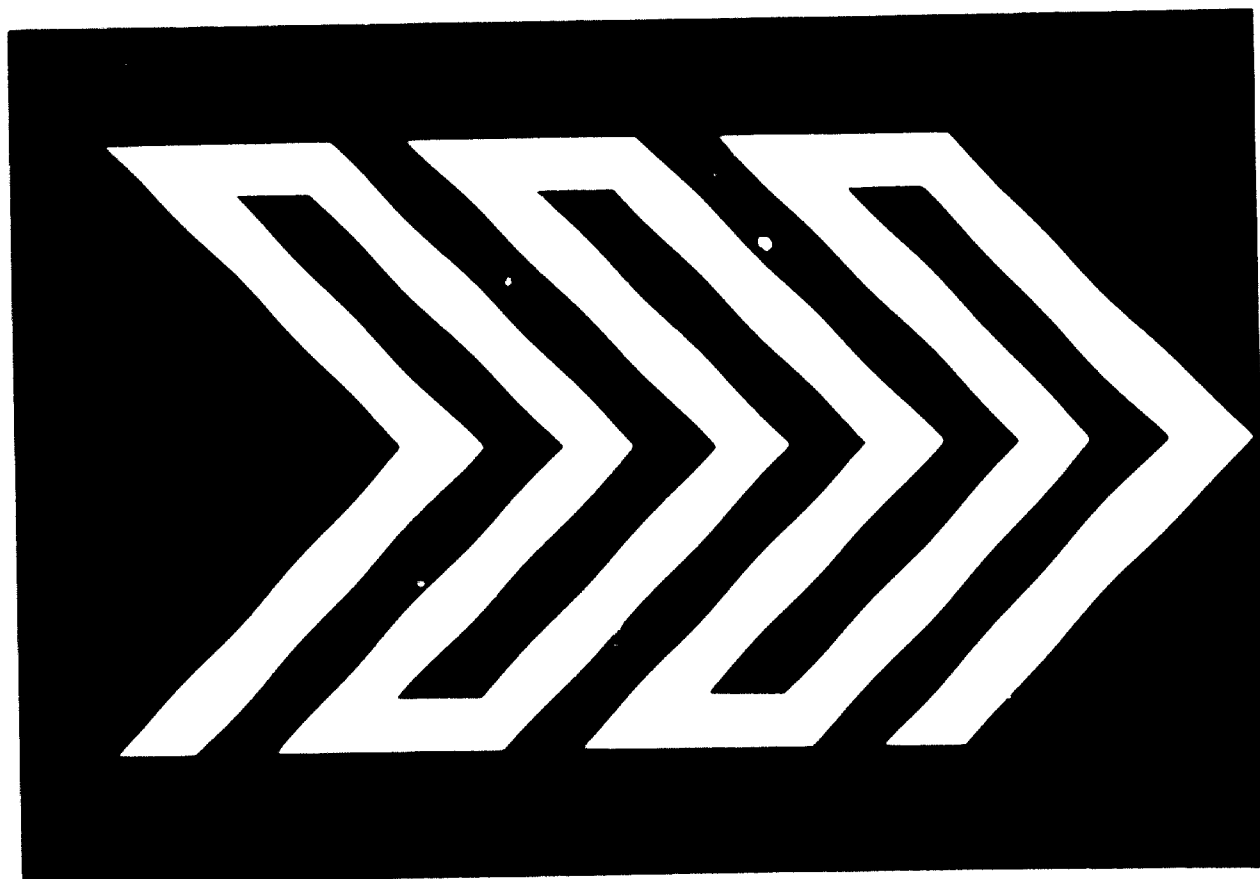
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**INDUSTRIALIZATION
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INDUSTRIALIZATION AND RURAL DEVELOPMENT

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Vienna

**INDUSTRIALIZATION
AND
RURAL DEVELOPMENT**



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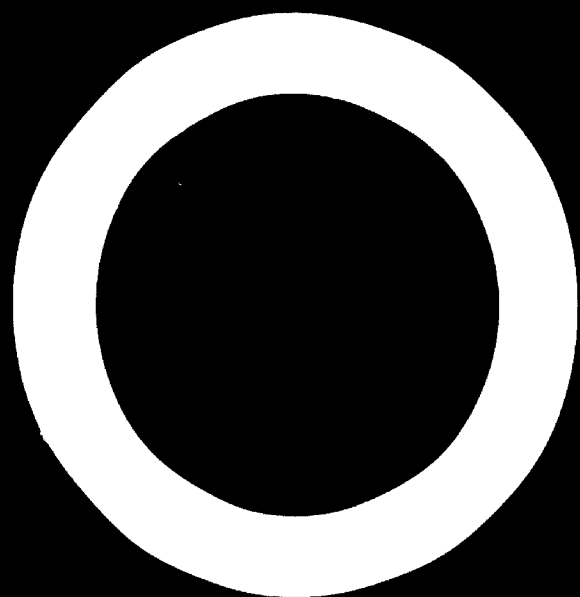
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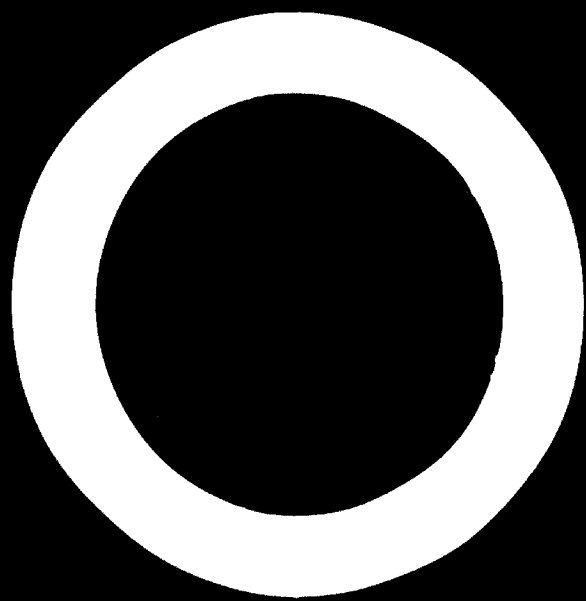
Three dots (...) indicate that data are not available or are not separately reported

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The following abbreviations of organizations are used in this publication:

CONASUPO	Compañía Nacional de Subsistencias Populares
FONAFE	Fondo Nacional de Fomento Ejidal
PIDER	Programa de Inversiones para el Desarrollo Rural (Mexico)
NDC	National Development Corporation (United Republic of Tanzania)
RTC	Regional trading corporation (United Republic of Tanzania)
RCW	Rural craft workshop (United Republic of Tanzania)
SIDA	Swedish International Development Authority
SIDO	Small Industries Development Organization (United Republic of Tanzania)
STC	State Trading Corporation (United Republic of Tanzania)
UFI	Ubungo Farm Implement Manufacturing Company (United Republic of Tanzania)



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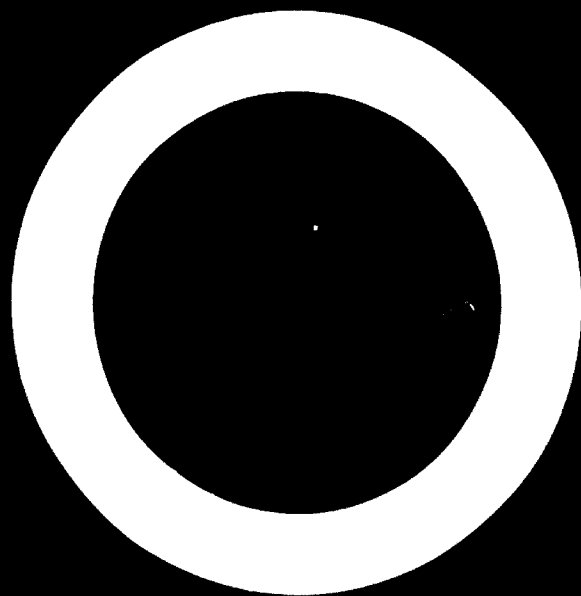
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Introduction

The Expert Group Meeting on Industrialization in Relation to Integrated Rural Development, organized by the United Nations Industrial Development Organization (UNIDO), met in Vienna from 12 to 15 December 1977. Its main purpose was to review relevant experiences on the subject and to formulate guidelines for strategies and programmes of industrialization in relation to integrated rural development. Participants were also requested to establish guidelines for a programme of assistance to developing countries in this field, to be carried out by UNIDO and other interested international organizations. The Meeting was a direct follow-up of the Second General Conference of UNIDO which, in the Lima Declaration and Plan of Action, gave priority to rural industries which fulfil the basic needs of the population and which contribute to the integration of different sectors of the economy. The Meeting also represented a UNIDO input into the overall efforts of the United Nations system in this field under the Administrative Committee on Co-ordination (ACC) Inter-Agency Task Force on Rural Development.

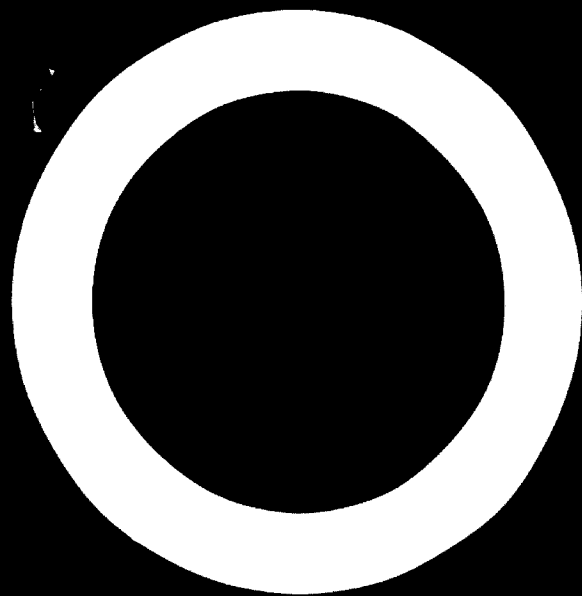
The Expert Group first discussed the major concepts of rural industrialization and integrated rural development with the aim of defining their significance in terms of an anti-poverty approach to the economic and social development of developing countries. The experts then examined the contribution of industrialization in an overall programme of integrated rural development, in terms of the utilization of local raw materials and skills, the provision of employment opportunities, the production of items to meet basic needs and the establishment of linkages with other sectors of the economy. After defining the contribution of industry, the participants discussed the question of how this contribution could be organized most effectively at the national and operational levels of decision making. As a result, the Expert Group suggested a number of guidelines for the design, co-ordination and execution of programmes of rural industrialization. It concluded the discussion with proposals for further action by UNIDO and other international organizations.

Part one of this publication contains the conclusions and proposals for further action of the Expert Group Meeting. Part two is a paper on basic issues prepared for the Meeting by a UNIDO consultant. Part three comprises selected country case studies presented to the Meeting. The annex gives a list of papers presented to the Meeting.



PART ONE

**Report of the Expert Group Meeting
on Industrialization
in Relation to Integrated
Rural Development**



I. Organization of the Meeting

The Expert Group Meeting on Industrialization in Relation to Integrated Rural Development was attended by 23 experts coming from developed and developing countries and from international organizations. All those attending the Meeting did so in their individual capacity and not as representatives of Governments, organizations or institutions.

Cyril Bright (Liberia) and Prasanta K. Das (India) were elected Chairman and Vice-Chairman of the Meeting respectively. Martin Hogg (United Kingdom) was elected Rapporteur.

Opening addresses were given by Farlan Carré, Director (ad interim), International Centre for Industrial Studies, UNIDO; Subrahmanjan Nanjundan, Head, Regional and Country Studies Section, International Centre for Industrial Studies, UNIDO; and Cyril Bright (Chairman). The main points of these addresses are summarized below.

It is widely recognized that industrialization can be a dynamic force capable of initiating a process of self-generating development in the developing countries. Industrialization on a significant scale has indeed taken place in a number of developing countries and a wide range of manufactured goods has become available from local production. However, while efforts to industrialize in some developing countries have led to encouraging results, large segments of the rural populations of these countries have benefited little if at all from the progress achieved.

The pattern of industrial growth in developing countries has tended to favour only a small part of the population, often those living in urban rather than rural areas. The result has been a product-mix largely oriented towards urban consumption needs and a distortion of income distribution and employment opportunities. Thus the nature and pattern of industrial development needs to be reoriented in order to fulfil the aspirations and requirements of the majority of the population of developing countries, and in particular of the poorer sections of the population. This calls for increased efforts to develop industry in rural areas on a greater scale than heretofore.

There is a growing recognition that rural development is a multi-sectoral process which must, in time, encompass all sectors of social and economic activity. Nevertheless, while it is readily recognized that industrialization can make a significant contribution towards rural development, in fact industrialization programmes have so far been given little emphasis in development plans for rural areas in developing countries.

The United Nations system, through the ACC Inter-Agency Task Force on Rural Development, of which UNIDO is a member, has been endeavouring to assist developing countries in promoting integrated rural development programmes. It is felt that industrialization should be an important component of such programmes. However, it is recognized that for industrialization to be effective, a clearer understanding is needed of its specific contribution in terms of the increase of production and productivity, the use of raw materials and skills, the provision of

employment opportunities, the raising of rural incomes, the production of items that meet basic needs and the strengthening of linkages with other sectors of the economy. Moreover, clear guidelines are needed on how this contribution can be organized most efficiently at the national and operational levels of decision making, specifically in terms of the planning, design, co-ordination and execution of programmes of rural industrialization.

The Expert Group Meeting, the first of its kind to discuss problems of industrialization in relation to integrated rural development, was organized to provide guidelines on the above questions. Such guidelines were intended not only for UNIDO, but also for national authorities and other agencies of the United Nations system, so that they might help to formulate and to implement effective integrated programmes for accelerating the development of rural areas.

II. Conclusions

The conclusions of the Expert Group Meeting were adopted at the last session on 15 December 1977. They are given in the following paragraphs.

The role of industrialization in integrated rural development

The Expert Group agreed that there was a need for rural industrialization in developing countries, both to stimulate additional employment and income-generating opportunities and to help to provide basic needs for the rural population. Because of the nature of rural development problems, the Meeting accepted the principle that new approaches and new mechanisms to facilitate industrial development in rural areas would be required. Some of the established techniques of industrial promotion would need to be re-examined and perhaps adapted to meet the requirements of rural industrialization.

The experts agreed that the nature and pattern of industrial development must become more relevant to the aspirations, needs and capabilities of the majority of the population of developing countries. However, there could be no single, global solution of the problems of how to bring about the development of industries in rural areas, because of different political, social, cultural and economic backgrounds. Whereas it was felt that a more direct approach to rural development was essential wherever poverty was endemic, policy measures and instruments designed to encourage rural industrialization would have to be specific to individual countries. They would also need to be sufficiently flexible to adjust to the diversity of rural areas and of communities within those countries.

In view of the scale and complexity of the task of developing rural areas, the experts felt that a strong and continuing national and political commitment to rural development policies would be essential prior to proceeding with specific programmes or projects. A flow of resources (both in terms of finance and manpower) in support of these policies in adequate volume and sufficient quality was thought to be the most reliable indicator of such a commitment. The entire process should be one of total mobilization of the available resources.

Since agricultural activities are predominant in the rural economy and provide a means of livelihood for a majority of the population, the idea was accepted that agriculture would often be the starting point for rural development; in such circumstances rural industrialization would then have a mainly supportive role. An early step towards rural industrialization would be to strengthen the linkages between the two sectors at the policy, planning, programme and project levels. As agricultural development advanced, however, the industrial sector would become increasingly important and would need to be dealt with separately.

It was recognized that, though rural development was a multi-sectoral concept, rural development programmes so far had concentrated largely on the agricultural sector and on the provision of certain social services, e.g. education and health. This

had in most cases resulted in some improvements in the quality of life. However, further development of the agricultural sector was already constrained in some countries by the lack of additional acreage for cultivation. Moreover, the objective of raising production and incomes from this sector required increased acreage yields and increased labour productivity. Thus the labour-absorptive capacity of agriculture seemed to be limited in many developing countries.

Under these circumstances the Expert Group felt that it was important to consider the promotion of a larger variety of productive activities in rural areas, if development was to be carried to the areas where people were, rather than to encourage further massive rural-urban migration with its concomitant social problems. The greatest opportunities for this multi-sectoral effort seemed to lie mostly in the non-farm group of activities consisting of manufacturing (both traditional and modern), repair and maintenance, construction, and the tertiary sector.

If rural industrial development was pursued in the above context, the Expert Group thought that it would generate substantial opportunities for productive employment and augment rural incomes, with greater prospects of success since most of the activities would be mutually supportive. Moreover, most or all of these activities would also contribute to further development and strengthening of the agricultural sector.

The Expert Group agreed that rural industrialization should be understood to include both attempts at a dispersal of industries away from major cities through relocation of established capacity serving urban markets into more rural areas, and industrial activity based on rural resources and the meeting of rural needs.

The experts recognized that the formulation of policies and programmes for rural industrialization had to involve a much greater participation of the people in order to be effective. What was required of development agencies and "change agents"¹ was to liberate and not to constrain the initiative, energies, knowledge and skills of the rural people, in order to widen their horizons and to develop the resources of rural areas. At the same time it was recognized that the limited absorptive capacity of external inputs of many rural groups and their difficulties in providing the necessary local inputs and multipliers for industrial development would require special assistance and approaches to enable them to participate effectively.

The experts took note of a number of instances in which specific sectoral programmes had contributed successfully to rural industrialization, especially when these were vertically integrated and used local raw materials, knowledge and skills. This evidence tended to suggest that rural industrialization not only had an important contribution to make, but also that in certain circumstances it might well serve to initiate rural development on a broader front.

Rural industrial development programmes needed to be integrated at the horizontal level with national rural development programmes, and at the vertical level with national industrial development programmes. In terms of planning, it was thought that regional and/or area planning techniques would help to achieve integration, since most rural industrialization programmes were likely to be organized on the basis of geographic areas or localities. At the project level, whatever effective means of participation were adopted would have similar results. Spatial planning

¹Change agents in industrial activity are many and varied, and are as yet imperfectly understood. They may be institutions or individuals, ideas or techniques, and be either internal or external to a particular industrial situation. Some are more amenable to control than others, while some may have negative effects.

related to integrated rural development programmes could play a significant role in ensuring the provision of rural infrastructure and in facilitating rural industrialization programmes.

The experts agreed that the starting point for rural industrialization in a particular country would have to be the level of common knowledge and understanding of industrial organization and technology of the rural areas in that country. This would require a much greater awareness than was now common among agencies and change agents of local resources and skills, as well as of their potential contribution. In some countries there had been increasing emphasis on self-sufficiency even at the village level. It was considered, however, that there were limits to a strategy of industrial self-sufficiency at the village level and that some specialization was desirable.

The experts felt that the rural poor should be the main beneficiaries of rural industrialization. It was suggested, however, that only a relatively small proportion would benefit directly through additional employment and higher incomes; a larger proportion would benefit indirectly. For the purpose of fulfilling key roles, such as those of the entrepreneurs in specific rural industrial projects, the target groups of rural industrialization programmes might well differ from those normally now associated with rural development projects, i.e. the underemployed and the unemployed. It would be particularly important, however, to create sufficient opportunities for all those with an entrepreneurial inclination to put their abilities to the test, and to provide continuing support for those who were successful.

Because of differences in local factor endowments, it was recognized that, while a more widespread distribution of industry was possible, an even pattern of development between rural and urban areas or between rural areas might not be feasible. Industrial activities were sensitive to "centring" tendencies within developing economies and to infrastructural constraints. Concentrations of industrial activity were to be expected and encouraged within growth centres, such as market towns and administrative centres, and these would contribute to the development of surrounding rural areas. For this reason the Expert Group agreed that for the purposes of rural industrialization, a functional concept of the rural milieu (to include rural towns) should be adopted.

Considering the fact that programmes of rural industrialization within the context of rural development were fairly new, the experts felt that there was considerable need for experimentation and research on alternative approaches, methodology and concepts. Case studies of the successful experience of industry being employed as "entry points"² into integrated rural development programmes were seen as particularly relevant in this connection.

Strategy and policy options

It was noted that there was widespread interest in rural development within developing countries, and within democracies the pressure of the rural vote on Governments to better their interests was sufficiently great to precipitate further moves towards greater equality. Given a strong commitment to rural development by

²Entry points may best be thought of as opportunities for investment in productive activities which themselves contribute directly to development and serve as catalysts for further development in related sectors.

national Governments, detailed involvement in the processes of rural development by those Governments was thought to be inevitable; the question remained as to what form it would take. The greater the bureaucratic intervention, the greater the risk of delay, duplication and dissipation of effort that might follow.

The experts agreed that no single series of policies could be drawn up to meet the needs of all rural areas. Each country must design and construct its own strategy, preferably with plenty of opportunities for the trial of new approaches, according to its own objectives and to the means at its disposal. It was felt that the established conventional approach should be modified where necessary and supplemented by a grass-roots process of rural development. In other words, it was felt that there was room within rural industrialization strategies for both top-down and bottom-up approaches, and that these should be complementary.

Some of the conflicts and discontinuities within developing societies, such as those between urban and rural cultures and those between elite groups and the masses, had to be faced and overcome in designing strategies for rural industrialization. Flexibility and adaptability would be essential characteristics of any such policy-mix. The attitudes of the bureaucracy and the elites have often prevented great depth of understanding of the rural situation by the decision takers, a difficulty compounded by the scarcity of practical experience directly relevant to rural problems.

The Expert Group agreed that considerable effort would be required to identify and to unravel the complexities of rural economies and that close attention should be paid to the rural people's understanding of their own needs. Target groups themselves would often have important insight into the nature of local needs and constraints, although they might need assistance in meeting their objectives.

The experts recognized that strategies for rural development needed to take into account the existence of various sub-groups and different categories among the rural poor, who not only possessed dormant knowledge, resources and skills, but also had different types of dependency relationships within their communities. These would require different programmes and different approaches. It was suggested that, in policies for rural industrialization, not only the need for full-time jobs should be considered but also the need for part-time and seasonal employment. It was also suggested that, given the relatively long pay-off periods for most investments and training, attention should be focused primarily on the needs of the young entering the labour force.

The experts felt that, for the design of rural industrialization programmes, consideration should be given to administrative boundaries to facilitate relationships with existing local government structures and the use of existing development statistics. The experts also felt that the operation of such programmes would often be most appropriately carried out at a supra-district level.

The Expert Group agreed that there were two distinct categories of rural industries for which somewhat different strategies were required within an overall national strategy for industrial development. These two components comprise:

(a) The distinctly "village" type of industrial production closely related to local resources and initiatives and serving highly localized markets; these are undertaken mostly by small enterprises in craft, service-type and "pre-industrial" activities;

(b) The more organized and specialized forms of production, often undertaken by larger enterprises of the factory type, serving wider markets and perhaps requiring aggregate resources beyond the limits of what may be available in the local community.

The former type are most likely to be influenced by bottom-up strategies. The experts were of the firm opinion, however, that both components were necessary ingredients of rural industrialization, and that smaller enterprises and handicrafts alone would rarely be sufficient to catalyse rural development.

The group thought that one beginning to the processes of rural industrialization might be found in policies for dispersing further industrial development and growth away from existing large concentrations of industry in major metropolitan centres.

The experts agreed that, within simpler types of industrial activity, greater emphasis should be placed on self-reliance and freedom to find appropriate answers to local problems than on standard schemes or projects. Even in the case of more organized enterprises, care should be taken to ensure that experts should be practically oriented and should be integrated with the local populace in order to make best use of their skills and capabilities.

The Expert Group felt that in an industrial strategy early attention should be given to removing physical infrastructural constraints for rural enterprises and to providing critical inputs and training. Since the effective priority to be given to structural development, both physical and institutional, was often determined by the funds available, increased resources should be supplied for this purpose.

The experts concluded that the choice of production technology for rural enterprises was not a simple or a genuine choice. All too often neither alternative, either labour-intensive or appropriate technology, was available in rural areas. Governments could increase the range of choice by examining existing technologies used in other sectors of the economy and in other developing countries and by encouraging processes of adaptation and dissemination. The experts suggested that the level of technology to be used should be determined by a country's real or potential machine-building capability, as well as by the ability of rural enterprises to absorb fresh technology.

The issue of protection is often important to the survival of traditional craft or "artisan-type" industries which frequently suffer from a lack of ability to adjust to competition and changes in demand. There was a strong commitment among some members of the Expert Group to the view that the progress of many traditional industries had been held back by various external and internal constraints although their potential contribution to rural development at least in the shorter term was considerable. Concern was expressed at their resistance to changes in production techniques and methods of business organization.

The Expert Group thought that new rural industrial enterprises, whether small- or large-scale, would bring both direct and indirect benefits to rural development. Some more sophisticated activities, however, were recognized as being much more difficult to plan and to launch than others; they required much greater insight into the workings of the rural economy and of local markets. Such projects required the most thorough feasibility studies. The value of feasibility studies as such was questioned by some because of their arbitrariness and complexity. The marriage of local to imported know-how was put forward as a major target for evolving more appropriate planning and evaluation techniques for rural projects.

Rural industrialization programmes

Two factors determine decisions with regard to product priorities within rural industrialization programmes: selective promotion and constraints on the available resources. The chief criterion for fixing priorities is the established or anticipated demand. Demand can be influenced in many ways. In poverty-oriented programmes Governments can play a major role in influencing demand in favour of target groups, especially in order to provide for basic needs and to bring about a gradual improvement in the quality of rural life. The first priority category for rural industries is likely in most countries to be the production of agricultural inputs, i.e. industrial enterprises with forward linkages with agriculture. Second is the production of consumer goods and provision of services for rural communities. These are particularly important because they are highly labour-absorptive, with ease of entry and a relatively low entrepreneurial requirement. A third category is the processing of agricultural produce both for local and regional markets. Finally, opportunities for the production of building materials, mineral processing, artistic crafts and non-rural resource-based industries tend to be governed by competitive conditions in regional, national and international markets.

The establishment and growth of industrial enterprises in rural areas are conditioned primarily by the availability of entrepreneurial skills, the availability of credit and the removal of infrastructural constraints. The nature of rural enterprises, in terms of scale of production activity and the production technology employed, is largely influenced by these primary factors, which are closely interlinked. Government assistance to rural enterprises therefore has to be tailored to take these relationships into account as well as the form of social organization of production. In many rural areas standard packages of assistance are likely to fail because they are inappropriate to local needs. Most forms of industrial activity require managerial qualities of flexibility and sensitivity to changes in demand, which have to be developed through experience and training. In rural areas such qualities of entrepreneurship can often be identified in emergent commercial and service-type activities.

The experts felt that, with respect to a rural industrialization programme, options should be kept open for all sizes and all technological levels of industrial enterprise. In some situations even fairly sophisticated plants and technologies have helped to influence the outlook and horizons of rural people. Some examples of technological change acting as a catalyst for rural development, both in terms of creating employment opportunities and precipitating social changes, were given to the Expert Group Meeting. It was also recognized that size and technology of enterprises were related to the range of sizes of settlements within the rural-urban continuum and to the linkages that arose from national and regional industrial planning.

In so far as Governments can influence the choices of technology made by industrial enterprises, the experts felt that preference should be given to those technologies that were adaptable to local skills and the use of local resources. Mere imitation of imported schemes and standard projects was thought to be undesirable and likely to be counter-productive.

Recognition should be given by Governments and agencies to existing industrial or pre-industrial structures and organizations in rural areas and the positive or negative roles that they play in development. In some cases, where such organizations have

been found to be exploitative, major changes may have to be brought about to enable rural people to benefit more directly from the product of their effort. The criterion for selection of a preferred form of productive organization for a particular activity should be that it permits the most effective participation by key members or groups of members of rural communities.

The Expert Group concluded that there had been a failure in many countries to recognize the merits of more co-operative forms of organizing production. Their reliance on self-help and the advantages of scale which they conferred, especially in the production of items for the satisfaction of basic needs and in service industries commonly required by rural communities, were thought to be particularly important. It was recognized that such co-operative forms of production were most effective when the initiative and drive for their establishment came from below. Pre-co-operative forms of organization could be considered appropriate for some rural situations.

The experts noted that larger and more sophisticated production units, whether private, public or collective, tended to become more autonomous and sometimes predominant within a local rural economy. It was felt important that steps should be taken to ensure that they should remain a force of employment for as large a proportion of the local community as possible, provided they did not overwhelm all other forms of entrepreneurial activity.

Because of the limited experience so far in appropriate forms of industrial organizations and the wide variety of options that were available, the experts felt that a flexible and operational approach to experimenting with different types of industrial organization should be adopted. The development of self-help forms of organization based on local people and resources was felt to be relevant.

The Expert Group agreed that rural industrialization programmes should be organized to ensure the supply of key inputs to rural industries and to attempt to make good the major deficiencies of the rural resource base. It was recognized that the effective dispersal of industrial development within rural areas could come about only through a combination of the establishment and growth of new industrial capacity within rural areas and, to the extent possible, the relocation or redeployment of existing capacity from major urban centres of production.

The Expert Group agreed that appropriate measures would have to be taken to stimulate additional investment in rural industrial activities. Many new or expanding rural enterprises would require a comprehensive package of measures of assistance designed to improve their business conditions and environment, and to ensure the supply of essential inputs. The role of an extension service would be particularly important in this regard, and the group of experts stressed the value of a single point of contact for an entrepreneur with the range of official bodies concerned. The problems of inadequate market intelligence and of marketing for different categories of rural enterprises were identified by the experts as deserving special assistance from development agencies and international organizations.

The experts recognized that different sizes and types of industrial enterprises required different kinds of assistance. While larger, more sophisticated enterprises responded to fiscal measures, simpler smaller enterprises tended to be responsive to more direct forms of assistance. For example, a special approach would be required to promote and assist the development of the handicraft sector to improve access to markets—especially export markets—and to facilitate the supply of raw materials and credit.

The Expert Group added that because most rural entrepreneurs were imitators not innovators appropriate measures were required to develop new products and production technologies in order to contribute to the viability of rural enterprises over the long term.

The Expert Group emphasized the importance of appropriate training for entrepreneurs, managers, supervisors and workers in rural industries and for those officials whose task it was to assist them. The need for craft apprenticeships, on-the-job training and the acquisition of practical experience was strongly emphasized.

As regards market opportunities that lent themselves to industrial or pre-industrial forms of activity, the catalytic role of individual or institutional change agents in stimulating and facilitating the development of rural industries was accepted by the Meeting as a critical aspect of government influence. While the selection, motivation and training of such change agents were thought to be crucial to their success, further studies on their role in processes of rural industrialization were necessary. The decentralization of decision taking on the disbursement of assistance and the ready availability of specialist skills were seen to be the most important aspects of the support to be given to such change agents.

The Expert Group agreed on the need for the effective vertical and horizontal co-ordination at all levels of sectoral institutions concerned with the nature and pattern of industrial development in rural areas in terms of the setting of objectives and of the planning and implementation of rural industrialization strategies and programmes.

The Expert Group agreed that as a starting point more effective use could be made of existing institutions to develop rural industries. This would involve major changes in attitudes and methods of operation as well as the extension of their activities into rural areas. Supporting institutions must be able to respond efficiently to initiatives and opportunities identified by change agents, and their operations must be decentralized accordingly.

The experts agreed on the need for a continuing evaluation of the progress of rural industrialization if programmes were to be implemented effectively. There should be built-in evaluation schemes within the larger projects.

The experts concluded that the most rapid development of industrial activities in rural areas could come about only if enterprising groups and individuals were encouraged and genuinely assisted by the institutional machinery to help themselves to achieve more efficient and appropriate forms of production. The wider the opportunities for such groups and individuals to test and refine their skills, and the greater the means at their disposal, the more significant would be the contribution of rural industries to economic development as a whole.

III. Proposals for follow-up and further action

During the course of the Expert Group Meeting a number of suggestions were made on how UNIDO and other agencies might assist the process of rural industrialization in developing countries. The suggestions for follow-up and further action, given below, are not framed as specific recommendations. Rather, priority has been given to specifying the role to be played or the task to be fulfilled. Some indications have been given about which bodies might assume responsibility for these tasks, but the initiative for undertaking such tasks should properly rest with the relevant agencies themselves.

Further insight is urgently required into the strategies and techniques of entrepreneurial development programmes for rural areas. Many developing countries find that their industrial development policies are constrained by a lack of individuals with organizational and risk-taking abilities, especially in rural areas. Further research is needed in this area and guidelines should be issued to the agencies and organizations concerned.

There is a need for case studies of successful rural enterprises, especially those using technologies more appropriate to the rural situation. Such case studies might be collated into relevant product categories and published by UNIDO as part of its series, *Guides to Information Sources*.³ Such successful case studies should also be disseminated to groups, organizations and individuals engaged in rural development and used for seminars and discussion groups.

Very little is known about the process of change and the initial cause or stimulus of change within industrial enterprises, either at more sophisticated, more organized levels or at the pre-industrial level that is common in more rural areas. Even less is known about the process of growth and transition from small production units to much larger, more specialized factories, or from traditional artisan units to small, more modern factories. The Expert Group identified several areas, such as simple building contracting, commercial and trading activities, services and transport, where rural enterprises tend to emerge in the earliest stages in more prosperous and progressive agricultural areas. Much more needs to be known about the emergence and encouragement of such pre-industrial rural activities. Several suggestions were made for experimentation and alternative approaches to the motivation and stimulation of such activities within the rural communities. These were as follows:

- (a) Assistance to national institutions or local organizations with ongoing projects, or developing new projects with a view to investigating the role of:
 - (i) Industry as entry point to participatory and more self-reliant rural development;
 - (ii) Industry as intermediate stage or end;
 - (iii) Mass technology and labour-intensive features, and learning-by-doing features;

³ UNIDO/LIB/SI R.D.

(b) Surveys by local organizations or rural development agencies to identify and redefine rural resources, markets, skills and technology with a view to designing appropriate rural industrialization programmes.

Such investigations should facilitate the devising of new techniques for assisting the development of rural industries that are more appropriate to the rural situation.

Further assistance is required from international agencies in the following:

(a) Development of methodology and expertise in the formulation, implementation and evaluation of industrial plans, policies and programmes consistent with overall rural development objectives;

(b) Mobilization and organization of decentralized industrial services and institutions to support rural industries;

(c) Establishment of rural industrial programmes and projects on a pilot demonstration basis;

(d) Development and application of more appropriate training techniques both of officials concerned with rural industrialization programmes and of entrepreneurs and employees of rural enterprises;

(e) Exchange of information, experience and expertise through seminars, study tours, workshops, training courses, and other forms of consultation as an element of technical co-operation among developing countries and other interested parties.

The ongoing and prospective programmes and projects of UNIDO could be evaluated usefully against the new criteria emerging from the deliberations of the Expert Group and reoriented, restructured or refashioned in consultation with national Governments and linked to programme development under the United Nations Development Programme (UNDP), United Nations Industrial Development Fund (UNIDF) and other such sources of funding technical assistance.

The difficulties of assessing existing or potential demand were thought to be a most important part of the marketing problems experienced by many developing countries. The situation was complicated by spontaneous or imposed changes in demand within rural and urban markets. Further work needs to be done to increase understanding of such changes, especially for basic needs within rural economies which are themselves developing under the stimulus of agricultural progress. In addition, substantial assistance is required to develop much greater marketing capabilities within the industrial sectors of developing countries.

It was felt that action research should be encouraged to help build self-management institutions and techniques for rural industrialization programmes. Areas for further investigation would include: pre-co-operative or co-operative organizations, youth groups, women's groups, collectives, village dialogues and village forums, village funds, and change agents.

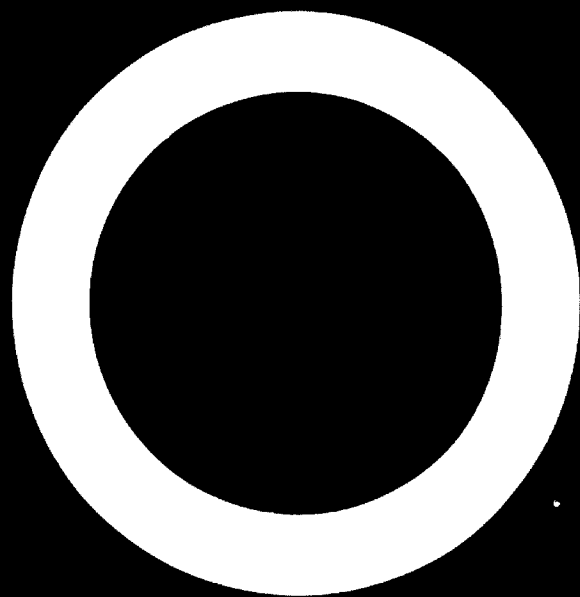
PART TWO

**Industrialization and Rural
Development:
an Analysis of the
Basic Issues**

by

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Introduction

A few countries have achieved notable success within the space of a single generation in rejuvenating their economies through a strong, rapidly growing industrial sector which makes a major contribution to their gross national product and provides substantial employment opportunities for their growing labour force. For the majority of developing countries, however, the industrialized sector remains a modern appendage, grafted on to a traditional economy. There is therefore widespread frustration at the failure to realize the ambition of transforming these economies through industrialization.

This frustration is also derived from wide conflicts and inconsistencies within developing societies. In particular, the present duality of many developing economies has produced a polarization of interests between elite groups who continue to monopolize power and wealth and the majority of the population who reside and seek a means of livelihood in rural areas. For the majority poverty often remains an all-pervading, self-perpetuating way of life. In addition, exaggerated urbanization and the concentration of investment mainly in urban-oriented, capital-intensive activities have produced a severe imbalance within developing societies which few Governments can ignore.

Pressures on Governments to redress this imbalance have been greatly increased by a growing awareness among the majority of the population of the extent of inequality confronting them and the prospects for its amelioration. A series of demands have arisen which will determine the shape, timing and to some extent the content of future development strategies—particularly the contribution to be made by industrialization. Firstly, there must be an acceleration in the rate of development; secondly, policies and measures must prove more relevant to the needs of the majority; and lastly, there must be much wider participation in the processes of decision making so that benefits might be more equitably shared.

The response of international agencies and many Governments to these demands has been to initiate a shift in the allocation of resources away from the cities and capital-intensive activities. An increased share of the total resources available for productive investment and community services is to be set aside for opportunities in rural areas, in order to improve the welfare and quality of life of the rural majority of the population. As yet, however, such a reallocation of resources has been slow to materialize.

Industrialization can make a significant contribution to rural development through increased rural production and productivity, the provision of employment opportunities and the satisfaction of basic needs, and the establishment of linkages with other sectors of the economy. In order that this might take place, industrial policies need to be integrated with those of rural development; appropriate institutions need to be established at all levels; and industrial programmes need to be developed based on clearly defined socio-economic objectives.

The particular constraints of rural areas will severely circumscribe the contribution to be made by industrialization, most of all in the least developed

countries. The first and foremost constraint is the scale and complexity of the problems involved, given the need for a simultaneous, multi-sectoral approach. New techniques will be required to identify the most productive opportunities, and means must be found for the release of local resources and multipliers. Moreover, new approaches will be needed to cope with the limited absorption capacity, reluctance to take risks, and resistance to change in rural societies. The profound nature of the changes involved—in values, attitudes and skills, and in the instruments of change—all dictate a slow and uncertain rate of progress. Therefore, if the patience of the majority is not to be exhausted, a greater effort must be made; and whatever progress achieved must be more visible and more equitable than in the past.

The objectives of the Expert Group Meeting on Industrialization in Relation to Integrated Rural Development are twofold: to review relevant experience on the subject and to formulate guidelines for strategies and programmes of industrialization. The sections that follow take up these two objectives, first touching on the major concepts from which the issues derive, and then highlighting the substance of the issues at the strategy and policy levels. Finally, attention is focused on the content and organization of programmes to implement those policies.

I. Contribution of industrialization to rural development

Rural development

The aim of rural development is not only the development of rural situations in a narrow economic sense, but also the balanced social and economic development of particular areas or regions, with a special awareness for the optimum utilization of local resources and a wider distribution of the benefits from that development. A re-ordering of priorities within the development process to achieve this aim must focus on the needs of the majority of the population who live outside the major cities, a significant proportion of them in conditions of absolute or relative poverty. This rural majority may exceed 75 per cent of the total population in some developing countries. According to World Bank estimates,⁴ if income of less than one third of the national average of each country is used as a standard, about 40 per cent of the total population of developing countries live in absolute or relative poverty, and 80 per cent of this number reside in rural areas.

The nature of rural poverty

The rural poor depend for their livelihood largely on agriculture and have adapted their way of life to relative isolation, with little access to national resources and very little influence over their future. Their standard of living is low and often declining; their quality of life leaves them severely disadvantaged and less able to change their role without outside help. Their cultural traditions are strong and their societies are distinguished by marked divisions. The causes of this poverty can be traced to low agricultural yields and low productivity of labour. In addition, there is increasing population pressure on natural resources, with high rates of absolute and disguised unemployment. There are poor institutional mechanisms and extremely limited physical infrastructure and services in rural areas, so that access to the available resources and to decision makers is severely curtailed. The result is that the circle of poverty is all-embracing and self-perpetuating; the chief challenge facing many of these rural people is merely to survive.

Within developing countries there is widespread variation in the form and incidence of poverty and in its many causes. There is no homogeneity among the poor in any country; there are many diverse, competing interests, varying characteristics and capabilities, and many different degrees of deprivation. Any attempt to alleviate this poverty must therefore be specific to a particular locality and must recognize the diversity between communities within that country.

⁴*Rural Development*, Sector policy paper (Washington D.C., International Bank for Reconstruction and Development (IBRD), February 1975).

Furthermore, any assistance provided should not be merely a palliative; for what is required is not temporary relief, but a means of releasing the energy and abilities of the majority and of mobilizing additional resources in their interests.

Basic needs

The aim of a poverty-focused approach to rural development is the raising of incomes and the satisfaction of basic needs for a minimum acceptable standard of living. Such basic needs as improved food and nutrition, clean water, adequate clothing, shelter, minimum education and minimum health care have been identified. Each requires that the existing production and distribution systems be radically reformed to make them more appropriate to the requirements of the rural poor.

The industrial component of the basic needs basket⁵ is substantial. It includes such items as processed food, clothing, footwear, housing and construction materials, basic drugs and medicine, bicycles, matches, soaps and detergents, textbooks and stationery, domestic utensils and household items, low-cost furniture, and energy supplies for heat and light. The production of many of these items does not require sophisticated technologies or a high degree of organizational skill. Above all, although the total potential market is huge, it is fragmented and widely dispersed and therefore lends itself to more dispersed forms of production, especially where infrastructure and communications are poorly developed. At present this market potential is often inhibited by a lack of purchasing power. Without much greater progress towards providing the poor with an adequate means of livelihood, so that they become self-supporting and can themselves generate additional resources, improvements in their welfare are not possible. The means of alleviating poverty depend in part on the mobilization of the meagre resources and skills of the poor themselves.

In view of the rival claims of a large part of the population, assistance to the rural poor should be focused where it can reach those in the greatest need and ideally where it can best be utilized. Unfortunately, these two requirements do not always coincide and many disadvantaged groups are among the least able either to help themselves or to use additional resources made available exceptionally to them. All too often the most disadvantaged communities or individuals are thus excluded from newly created opportunities for more equitable development. Target groups for rural development projects are often small and part-time farmers, landless labourers, artisans and the under- and unemployed (especially educated youth). Such groups might be the direct beneficiaries of rural industrial projects; others would benefit indirectly through the increased purchasing power and additional productivity thus created.

Conditions for rural change

It is evident that rural development involves a process of profound change in society as a whole, in the local community, and most important in the role of the individual. It is basically a matter of increasing the opportunities available to the individual as well as his means of utilizing them. The scale and inertia of rural

⁵"Industrialization in relation to integrated rural development with selected reference to Indonesia, Papua New Guinea, the Philippines and Thailand" (UNIDO/ICIS.52).

economies and their complexity defy all but the most incisive and concerted attempts to construct new means of livelihood and to increase welfare. Yet the nature of poverty and the need for greater equality require that the process of change takes place on a broad front, taking into account all the relevant political, economic, technical, institutional and human considerations. Not only is our understanding of the problem, its interrelationships and its causes, imperfect, but there are very limited resources available, especially appropriate skills, with which to plan and to intervene. There must be renewed attempts to identify the priorities to which development resources should be applied, and to seek out the multipliers that will magnify and reinforce the impact of the inputs available.

A strategy for rural development must therefore aim to increase the efficiency of existing forms of activity and to introduce new opportunities and instruments of development. Additional investment in rural areas should help to improve the productivity of labour by eliminating less productive tasks, increase specialization and bring about a better utilization of raw materials. It should also provide more employment and income opportunities which can draw the entire rural labour force into the main stream of economic activity. The rural propensity to save can be mobilized through rural banks and co-operatives, while changes in consumption patterns can be exploited by rural industries with appropriate products. The aim must be to create a more diversified rural sector, involving a greater dispersal of economic activity and bringing about an expansion of non-farm activities, particularly rural industries.

Several initiatives and conditions are required to bring about this profound process of change. Firstly, there needs to be a clear set of specific objectives for rural development policies based on national priorities for socio-economic development which are widely known and understood. Those established by the United Republic of Tanzania (see part three, chapter III) would be an example. Secondly, there must be a strong national commitment to rural development throughout the Government and its agencies, including the national executive and the lowest layers of administration at the local community level. It might be appropriate here to ask if one of the prerequisites (and perhaps one of the limitations of the strategy therefore) for the effective implementation of rural development policies would not be charismatic leadership, as was experienced in the establishment of the Productive Activities Incorporated in Mexico (see part three, chapter I). Such extraordinary interventions by influential, committed individuals would seem to be a necessary catalyst to overcome inertia and opposition. Thirdly, there must be an effective means of participation by the target group in the decision-making processes of project planning and preparation. It is evident from experience with rural development programmes in Bangladesh, Mexico and the United Republic of Tanzania that only in this way can the energies and resources of the poorer groups be mobilized to increase their productivity and welfare. Lastly, steps will have to be taken to ensure that influential minorities shall not appropriate the resources or the opportunities intended for the target group.

Integrated rural development

The concept of integrated rural development derives from the need to concert sectoral policies and programmes established by various agencies and institutions and directed towards solving the broad problems of rural development. This involves

tailoring a policy or programme not only to the particular requirements of a target group, but also taking into account other policies or programmes attempting simultaneously to reach that same target group. As such, integration involves an awareness, and a seeking, of mutually compatible and reinforcing policies or programmes that may well run counter to the established pattern of government administration, which is usually organized on sectoral lines with specialization of function and careful division of responsibilities.⁶ Furthermore, the process of integration should apply within organizations, between their policy-making and operational divisions, as well as between different organizations when there is an overlap of interests.

In some developing countries integration includes the aim of breaking down the stratification of society and providing wider opportunities for a larger proportion of the population. As such, the concept goes beyond individual projects designed to redress the poverty of certain target groups, and requires extended policies with the aims of reducing the disparity between urban and rural incomes and of increasing self-reliance in rural areas.

The mechanisms for achieving integration remain largely obscure. Nevertheless, there would seem to be four levels at which decisions and actions need to be integrated in order to make a major contribution to the process of rural development. These are:

- (a) Setting the objectives for the programme or project (including the identification of the needs and resources of target groups);
- (b) Design of the programme or project and the allocation of resources to it;
- (c) Management and reappraisal of the programme or project;
- (d) Participation by members of the target groups in the implementation of the programme or project.

The principle that the effectiveness of any co-ordinating agency is directly related to its political backing and its control over financial resources would seem to be very pertinent. Similarly, the type and effectiveness of the planning mechanism is of major importance. A centralized system of planning would be better placed to bring about the organization of multi-sectoral programmes and to achieve the most economic use of scarce resources according to national priorities. A sectoral system of planning has the advantage of stronger ties with implementing agencies and should therefore allow greater insight into operational difficulties and constraints.

The contribution of planning

One radical suggestion for solving the problem of how to achieve integrated rural development is that of reversing the normal planning hierarchy by delegating the task of establishing objectives and translating them into projects to the bottom level, i.e. that involving participation by the members of the target group itself.⁷ This approach has certain distinct advantages. It should bring about a clearer

⁶ "Industrialization in relation to integrated rural development with reference to Bangladesh" (ID/WG.257/5), pp. 32-33.

⁷ "From the village to the global order. Elements in a conceptual framework for 'another development'" (ID/WG.257/3).

identification of local needs and priorities and make use of the local people's much greater perception of the obstacles and constraints to rural development within a particular locality. It should also mobilize local resources more effectively, and make for an appropriate allocation and disbursement of funds. In practice, such an approach demands a high degree of decentralization of power, especially over resource allocation, and effective specialist support services to the local decision makers; both are expensive and difficult to achieve.

Area development planning techniques are already used in many developing countries, for example India and the United Republic of Tanzania, in their approach to integrated rural development. While broad objectives and overall priorities are set at the national level, project design and implementation are specific to the locale and are dependent on surveys of local resources and on effective steps to mobilize the resources available. This technique has been applied at both regional and subregional levels, while many strategies have incorporated growth poles as the means of stimulating the development of surrounding rural areas.

The role of "lead agencies"

One of the most important issues to be resolved in framing an approach to integrated rural development is the identification of where the initiative and major responsibility lie for intervention at the local level. Because cultivation is the single most important means of livelihood for the majority of the poor, the agricultural sector is commonly the starting point for rural development strategies. Agricultural agencies and institutions frequently take on the role of "lead agencies", although education and health agencies also fulfil this role. Industrial agencies rarely do so. Indeed, in many countries the industrial component of integrated rural development programmes has been insufficiently recognized in the planning and implementation processes. And different sectoral programmes often exist side by side within the same localities and with overlapping interests, without any co-ordination of projects.⁸

Several explanations for this state of affairs come to mind:

(a) Although the agencies involved may be concerned about pursuing and developing such linkages, they may not be competent to do so;

(b) Communications between agencies may be so inadequate as to deny them the opportunity for co-ordinated efforts;

(c) The kind of criteria used to select locations for agricultural projects, and the institutional mechanisms involved, may be such as to exclude the area;

(d) Agencies are often most concerned with preserving their autonomy, and the administrative structure has served to emphasize their separateness.

On the issue of the criteria used for project selection two important questions remain: What are the conditions essential for any industrial development in rural areas, as, for example, in Liberia⁹ and Papua New Guinea? (See part three,

⁸ UNIDO/ICIS.52, *op. cit.*, p. 6.

⁹ "Industrialization of rural areas. Case study on establishment of rural industrial estate, Foya, Lofa County, Liberia" (ID/WG.257/1).

chapter II.) Are there differing time-scales over which agricultural and industrial development actually takes place, as seems to be the case in the Indian and Kenyan experience?

Rural industrialization

The contribution of industrialization to rural development is a multiple one. Its primary purpose should be to increase rural production and productivity. Rural industries can give direct support to agricultural advancement through the manufacture and supply of productivity-raising inputs, especially those appropriate to the needs of small or marginal farms. In addition, they can be a means of mobilizing the rural labour force through the provision of additional employment opportunities in craft and artisan activities, the processing of agricultural produce, service activities and manufacturing linked to other industrial or urban markets. The manufacture of goods to meet basic needs for rural markets makes an important contribution to raising living standards and should proceed in step with any increase in rural incomes and with moves to bring about more equal income distribution. Finally, rural industrialization can also make a significant social contribution by improving the human resource base of rural areas. Wider opportunities for entrepreneurial initiative, knowledge and awareness of broader horizons, upgraded skills, and additional means of realizing increased expectations should follow from the enlarged range of economic activities within the rural economy.

Scale of production

A variety of industries may contribute to rural development in several ways. The scale and form of production will be determined by the wider socio-economic environment of a country and the factor endowment of a particular locality, and by the orientation of production towards the sources of inputs required or the markets for a specific product. Given the more limited infrastructure and services available in rural areas and the more dispersed markets, it is likely that the scale of production in individual enterprises will tend to be smaller than in more urbanized places. The technology of the product and the production process will also tend to be simpler and more self-sufficient. Hence the capital-intensity of many rural enterprises should also be less, in keeping with the amount of resources available. Smaller enterprises are also more likely to be suited to the managerial and organizational ability available in rural areas and be easier to incorporate within the rural economy.

Direct public sector investment in production units has been attempted in some rural situations, largely for demonstration purposes when local entrepreneurs have been in short supply. However, by and large it is more common to find public sector investment that supports that of private or co-operative enterprise. In many developing countries existing rural industrial units are of the traditional artisan or handicraft type. While such individual units may be tiny, collectively this industrial activity may well be large in terms of aggregate output and employment, and it may sometimes be predominant in the local economy. Large-scale enterprises may also be viable in rural areas if they are oriented towards locally available raw materials, especially if there is a loss in weight or bulk in processing or, as with perishable products, a rapid deterioration after harvesting. Such operations tend to be more

capital-intensive and employ higher level technologies, especially if they are export-oriented. Large-scale enterprises are frequently located in regions given high priority (often for political reasons) within national development strategies and may be compensated by the Government for any locational disadvantages. They may provide important market opportunities for other small enterprises to supply secondary inputs, or their waste and by-products can form the basis of other industrial activities. Perhaps the greatest significance of such large-scale industrial development is the spin-off from associated improvements in rural infrastructure in the neighbourhood of these plants.

Decentralization

The attempt to decentralize industry by dispersing its development and growth away from the overcrowded major cities has come about as a reaction to the excessive urban bias of many development policies so far. There may be some limited opportunities for relocating established industrial enterprises from major cities to more rural areas, although these are likely to be dependent for success on the need for space for expansion, the costs of congestion, and the incentives and compensation offered for a less advantageous location. Such relocation may provide increased opportunities for subcontracting or, if the enterprises can be persuaded to take on a developmental role, for the establishment of ancillary units with the advantages of a transfer of technology and skills which such a relationship can bring about. Other opportunities may exist for the redeployment of processing or manufacturing activities nearer to a source of raw materials or skills. The majority of rural enterprises are likely however to be new, or greatly transformed, smaller enterprises established by local entrepreneurs to exploit new market opportunities, some of which will be highly localized.

Rural/urban linkages

The location patterns of industrial enterprises normally show certain concentrations in response to the availability and accessibility of key inputs and services. Industrial enterprises are sensitive to the centring tendencies present in a developing economy. Rural industries are particularly dependent on their linkages with centres of economic activity and their interrelationships with other sectors of the economy. Yet, for the most part, existing rural development programmes are designed on the basis of the almost total compartmentalization of rural areas. In some cases rural market centres are excluded from the scope of rural development projects because the size of the settlement is large enough to be classified as urban. In others, rural development programmes are seen as exercises in developing self-sufficiency at the level of the individual village. Questions of interdependence between production centres and market centres and of the linkages between service centres and their hinterlands are crucial to the development of rural industries, both the modern or more formalized and the traditional or more informal. This has certainly been the case in the pattern of development among traditional blacksmiths in the United Republic of Tanzania (see part three, chapter III) and in other craft industries in Kenya.¹⁰

¹⁰ "Kenya rural industrial development programme: its role as an extension service programme" (ID/WG.257/6).

The location of individual enterprises is determined by a combination of factors, not the least of which, in the case of small-scale industries, is the entrepreneur's attachment to the place where he lives. Nevertheless, the lack of external production economies for enterprises located in rural areas, arising from poor access to specialist services, repair and maintenance facilities, alternative sources of credit or raw materials, or outlets for finished goods, may impose additional costs on production. The lack of basic services such as a reliable power supply, adequate communications for goods and information, bank facilities and access to government officials may well prevent production of some products in the more isolated areas.

Long-term viability

If smaller industrial enterprises are to contribute significantly to rural development, they need to be viable in the long term. By viable is meant profitable and self-generating in terms of capital, skills and technology. While it is difficult to generalize, one would look for signs of significant progress towards viability in the medium term, say five to seven years for new investments. The kind of indicators used to measure such progress by small rural enterprises are: the rate of return on capital invested and the ability to cover variable and fixed costs, to service and repay loans, and to re-invest profits and strengthen the equity base.

Governments of developing countries often come under considerable pressure to subsidize production costs, either directly or indirectly, and to provide some measure of protection for infant industries. In the long run such measures probably create an artificial profitability and may well detract from real competitiveness. At the same time, rural industries cannot be expected to flourish in a hostile environment and some concrete encouragement will be required to nourish their development. The methods used for determining the nature and size of such measures should include social cost/benefit analysis, and the use of shadow prices for factor costs and traded goods, so that these might be seen in a wider socio-economic perspective.

II. Strategy and policy options

With the widespread and self-perpetuating poverty that is found in most rural areas of developing countries, a passive or supportive role by development agencies is unlikely to be sufficient in the face of demands for accelerated and more equitable development. Without more active government involvement, the provision of additional public resources, and sufficient encouragement to private or collective enterprise and to local participation through incentives and practical assistance, the pace of industrial development is likely to be slow and its scope confined to the most favoured locations. The manner and degree to which a Government and its development agencies feel able to reorganize the local economy are determined very largely by the political philosophy of the Government in power. For in seeking to establish a more dispersed pattern of development, agencies face the task of disrupting long-established patterns of rural economic activity which are major sources of current employment, and encounter other obstacles where there is very considerable inertia and resistance to change.

Direct assistance to single projects or groups of clients involves state intervention in the market place. Yet this is probably the only way to promote rapid industrial development in rural areas, and such assistance may well have to be intensive and also long-term in order to ensure the physical and economic environment in which an industrial tradition can be developed. In the face of very limited resources and skills, and of an inadequate infrastructure, development agencies may have to carry commitments for perhaps 10 years or more in the form of expenditure in training, physical infrastructure, industrial services and special programmes of assistance. When starting from a very low base it is probably not realistic to expect a self-sustaining rural industrial sector in less time than this. However, state intervention in the market and controls over production and distribution are by no means simple and tend to have ever-widening ramifications. Many Governments in developing countries are either reluctant or lack the necessary expertise to become involved in the complexities of price controls, allocation of raw materials, licensing of capacities etc. Yet some intervention is common even in unplanned economies, if only in attempts to redress the imbalance in the terms of trade between rural areas and urban centres and to concentrate production more on basic needs goods rather than on luxury consumption goods.

National objectives

Once a national commitment to intervene actively to promote the development of rural industries exists, the shape of the strategy will be determined by the objectives set at the national level and by the resources made available. Pressures of unemployment and underemployment, migration from rural areas to the major cities and shortages of foreign exchange will largely fix the priorities for the creation of job opportunities, the exploitation of local raw materials and energy supplies, or the

protection of existing traditional industries. The task of nursing an emergent industrial tradition from the grass-roots level in rural areas is a delicate one. The basic policy framework should be sufficiently flexible to allow individual projects to be tailored to suit the requirements of particular localities and people. Increasing priority is being given in many developing countries to some of the more backward regions and districts, which, in terms of development potential, often suffer from a poor natural resource endowment and lack even the most basic infrastructure. The problems of these areas pose a considerable challenge to the effectiveness of rural industrialization policies and to the efficiency of those agencies charged with their implementation.

It has been the practice in many developing countries to experiment with new approaches and techniques of rural development through the setting up of pilot projects. With a large number of unknowns outside the control of a development agency, the location of demonstration projects has to be carefully selected and detailed planning and preparations put in hand. Sufficient resources in quality and volume need to be allocated and a conscientious project management needs to be achieved to use the opportunities created by local commitment and initiatives. Within rural development strategies, however, a major difficulty is the replication of this thorough approach in a large number of different situations over the country as a whole. In considering the availability of resources in rural areas, not only should there be an increase in the rural share of the national total available, but also steps should be taken to ensure that resources shall be recycled locally rather than allowing a net transfer away from rural areas. The tendency to re-invest profits from rural activities elsewhere is a common one, as, for example, in the case of Mexico (see part three, chapter 1). Only where rural industries are established through local initiatives and enterprise is this tendency diminished.

Policy constraints

A series of constraints on rural industrialization policies exists at the national level. Some are amenable to gradual change, but all help to determine the shape and content of current policies. Not the least of these are the political pressures of special interest groups, such as traders or large-scale industrialists, which can severely limit an administration's effective commitment to rural development. In view of the magnitude of change involved and the need for local participation in the design and preparation of rural development projects, the role played by the national planning machinery and its relationship with local government institutions will be particularly important.

The organization of administration, the allocation of responsibilities, the distribution of power between departments, and the skills available within official agencies will clearly influence the outcome of any attempt to integrate policies and programmes. The relationship between the ability to co-ordinate policies and the control of financial resources is particularly important, as in the case of Mexico, while the system of local government and the level of decentralization of decision making will be crucial to the form of participation by members of target groups.

Industrial policies will also have to take into account the regulations, procedures and controls imposed by various government departments; these may bear much more heavily on smaller, rural enterprises for which they were originally designed.

Broader economic conditions will also serve either to protect or obstruct the development of rural industries. Tariff levels and barriers to trade will clearly determine the feasibility of an import-substitution strategy. Minimum wage legislation and local taxes may also affect competitiveness if there are regional variations or differences between towns and the surrounding rural areas. The cost of capital, especially foreign exchange, and its availability can also discriminate against rural enterprises. Few of these factors will be amenable to rapid or radical change should their impact be adverse, and they may well frustrate attempts to initiate the development of rural industries, especially if combined with the presence of an import-biased distribution system, as is the case in Papua New Guinea.

Outside the framework and capabilities of government agencies, but of considerable influence in constraining the nature and speed of progress in rural industrialization, is the cultural background of the rural population. The extent to which the local people are ready to experiment and take risks, their willingness to make long-term investments of capital or in the acquisition of skills, the existence of established craft skills such as the working of wood or of metal, will greatly facilitate or hinder industrial development. An awareness in the population of what potentially lies within their own reach, given the necessary resources and organization, is a powerful agent in itself for changing the old order. Expectations and ambitions can and will need to be raised as part of rural development projects in order to make effective participation possible. For this reason appropriate education and training should be basic components of a rural industrialization programme.

Priority industries

At the policy-making level there must be clearly defined views as to the kind of products that are to be given priority within rural industrialization programmes, so that public resources for long-term investment and assistance can be channelled accordingly. These priorities need to be established on the basis of resource endowment, availability of raw materials, energy supplies and skills, and the identification of market opportunities. Such priorities can only be properly established in the context of considerable depth of understanding of the local market and the nature of existing (or anticipated) demand. Both forward and backward linkages within the economy will help to identify the main areas for specialization. Once national priorities have been established they will form a framework for the organization of specialized institutional assistance and serve as the basis for integration between policies directed towards different sectors.

The range of product possibilities for rural industrialization programmes may be summarized as follows:

- Production of agricultural inputs
- Processing of agricultural produce
- Processing of minerals and natural resources
- Production of building materials
- Production of consumer goods and basic needs items
- Traditional handicrafts

Provision of repair and maintenance facilities (including the production of spare parts)

Provision of inputs and services for other local industries (subcontracting and perhaps ancillary units)

There is a tendency—possibly inherited from more industrialized countries—to overemphasize diversification within developing economies as a whole regardless of the comparative advantages of production. Import substitution has so far been, and will probably continue to be, the starting point for most industrial development programmes. There are limits, however, to the validity of this strategy of self-reliance, especially at the level of rural communities and individual projects, although, in the case of low-unit-value goods for basic needs, this is less of a constraint than for the production of more specialized consumer goods.

It is difficult to generalize about the kind of industrial opportunities that may exist in a particular rural locality. Some industrial activity, such as the production of building materials, traditional handicrafts and the processing of agricultural produce, may already exist in pre-industrial forms and await rejuvenation through new investment, the introduction of new appropriate technologies, and access to wider markets. In the majority of cases, however, a high priority is given to the establishment of new industries, either substituting for imports from other industrial centres or from overseas, or meeting entirely new demands arising from progress in other sectors. The production of consumer goods in rural areas is often constrained by low purchasing power and a lack of effective demand with fragmented markets. In this regard, however, product substitution is common and can be very rapid when reinforced by changes in taste and increased awareness of non-rural standards. In view of the overwhelming reliance on agriculture as a means of livelihood, many Governments regard forward linkage industries, such as the production of agricultural inputs, as one of their earliest priorities for investment. Opportunities for producing industrial inputs and subcontracting from other larger, more sophisticated enterprises will depend largely on proximity to such plants. However, some limited opportunities may exist for the production of producer goods, particularly if there is already a well-established metalworking tradition for instance. Such activity in the engineering sector often begins with repair and maintenance and the manufacture of spare parts.

Several types of rural service industries can be distinguished. One group involves the provision of repair and maintenance facilities and is becoming increasingly important with the introduction of new and more sophisticated equipment in agriculture storage, transport and the production of new consumer goods; in the majority of cases this work is carried out on a jobbing basis with a limited manufacture of parts and components. Another group of industries includes those in which goods, often food or goods for mass consumption, are processed or manufactured at the point of sale in what are also commercial establishments.¹¹ Many are, in fact, craft activities. Other categories of rural services include transport and infrastructural services and domestic and personal services. Such services are less differentiated in smaller communities and more specialized in larger settlements. Within rural areas the skills and technologies employed tend to be less sophisticated, but their development is an important contribution to rural industrialization. Such activities have low thresholds in terms of

¹¹ "Basic issues, macro policies and components of a programme of development" (ID/WG.257/12), p. 22.

capital and skills and make for ease of entry. They therefore act as a breeding ground for new entrepreneurs and a base on which more specialized and more sophisticated industrial activities can be constructed.

Traditional industries

One of the apparent options in developing rural industries is to concentrate on the development and diversification of existing industries. Most established industry in rural areas is of the traditional artisan type, although some simpler manufacturing and processing activities may have developed as an adjunct to retail or trading concerns. Traditional artisan enterprises rely on simple, well-proven technologies and manual skills. There is often surplus capacity in relation to demand, and the enterprises are commonly family-based and subsistence-oriented. Production tends not to be organized, but the advantage of such units lies in their closeness to the markets, their low overheads, and their effective adaptation to the local environment. The question whether it is possible to upgrade these traditional units into more formal enterprises using more productive technologies is a most important one.

Any consideration of this issue has to take into account the large numbers employed in these industries. In India^{1 2} the numbers employed in handicraft and traditional artisan industries have reached the point where they must be protected from competition to which they are vulnerable, at least in the short term. In the United Republic of Tanzania traditional blacksmiths make a major contribution to the present rural economy and their continued decline would cause considerable disruption and unemployment in related sectors. However, if these industries are to survive, their skills, productive methods and competitiveness must be transformed. In Kenya the extension agencies have found considerable resistance to change and to the intensive assistance measures already attempted to resuscitate such enterprises. The obstacles to upgrading these units are considerable. Not the least is their geographic dispersal, which makes their identification difficult and any kind of intensive field assistance extremely costly, as in the Kenya Rural Industrial Development Programme. These units lack significant resources, are often very small, and commonly function as combined workshop/retail units. They produce custom-built items, with considerable manual skills. They frequently lack any kind of machinery, either powered or hand-operated. The quality of their output varies widely, often as a result of their raw materials and tools. Their businesses are not organized in any formal sense, they lack education and formal technical knowledge, and they keep rudimentary accounts; in short, their industrial activity closely reflects their culture and their way of life.

There are a number of possibilities for providing such traditional units with assistance to upgrade their production. Better tools and equipment can be supplied, and some division of labour can be introduced to improve methods of production. Better quality raw materials and other inputs can be provided, including credit where appropriate. The design of their products can be improved, and they can be advised on the use of banking services, book-keeping and management techniques. The question remains whether the majority of artisans will be willing and able to change the working habits of a lifetime sufficiently to allow them to become competitive.

^{1 2} "Industrialization in relation to integrated rural development: review of policies and programmes in India" (ID/WG.257/13).

New enterprises

The establishment of new enterprises in rural areas is, however, no easy alternative. The most common problem facing most developing countries is the lack of entrepreneurs. Even presuming that the difficult question of product selection can be satisfactorily answered, the lack of resources and skills to establish production is widespread. There is very limited access to relevant technology and the risks involved in identifying and supplying new market opportunities are considerable. The provision of direct assistance to new rural enterprises requires the establishment of special institutions. The difficulties faced by these institutions include those of assessing the feasibility of project proposals, a lack of equity capital and of acceptable securities for loans, and the task of selecting potential entrepreneurs deserving of support. It remains true that the only reliable indicator of entrepreneurial ability is a successful record as an entrepreneur.

Choice of technology

The choice of technologies to be used in rural industries at first sight appears to be broader than it is in reality, and the benefits are uncertain. The local development of appropriate technologies is normally both a high risk and an expensive activity in terms of time and finance. In practice, therefore, the choice of technology in rural areas is limited, largely determined by what is immediately or most readily available. The process of diffusion of new technologies is an uncertain one which seems to be difficult to influence or direct. For the shorter term it is likely that there would be a much greater return if priority were given to increasing awareness of the actual, as opposed to the theoretical, availability of proven appropriate technologies rather than to research and development in new technologies. Provision might then be made over the longer term for the import and adaptation of fresh technologies from other regions or countries as well as for the encouragement of innovation, particularly among smaller enterprises, for example through the financing of pilot production facilities.

The institutional requisites

The extent to which effective policies can be devised to cope with such diverse and complex issues will depend largely on the efficiency of the national policy-making institutions. The importance of establishing well-defined objectives for rural industrialization has already been emphasized. There should also be a clear designation of responsibilities for implementation, and a well-developed system of communications down and across the administrative chains.

Responsibility for rural industrialization is commonly shared by several departments or ministries including those for industry, agriculture, planning, rural development etc. It is desirable that one agency should be charged with the responsibility for major initiatives and for co-ordination of planning and implementation, so that integration of development policies and projects is realized. Substantial skills already exist in many departments and some secondment of staff may be necessary to make use of their experience. At present the industrial

component in many rural development programmes is seldom fully developed, but the necessary political commitment and designation of responsibilities must precede its realization.

The extent to which the national planning mechanism is decentralized will vary between countries, but most developing countries tend towards a centralized system of planning. Rural development requires the greatest possible decentralization to secure the necessary adaptation of strategies to local conditions and needs. The level at which this can be achieved must always be a compromise according to the sophistication of a country's infrastructure, the nature of local government, and the availability of personnel with the necessary training and expertise. It is unfortunate that the attempt to achieve an integration of industrial development policies for rural areas with policies for other sectors often runs counter to the established pattern of government in developing countries. There is therefore a considerable premium to be placed on an effective institutional framework at the operational level with opportunities for effective local participation.

The provincial (subregional or supra-district) level should be closely examined for its potential as a base for integrating project planning and implementation. The efficacy of its linkages with the national apex institutions will be crucial, and intermediary levels should be avoided if at all possible. The Markaz system in Pakistan¹³ is worthy of careful consideration in this regard since it seems to strike an effective balance between national priorities and the interests of local communities.

The provision of specialist support to provincial institutions could be organized nationally with appropriate high-level research and technically oriented institutions providing inputs as the need for the advisory services is identified at the local level. The success of integrated rural development programmes depends to a great extent on the effectiveness of the working relationships between mainstream departments and agencies and the local government and on the willingness of such agencies to construct integrated projects. The construction of such an institutional framework is an exercise in the near balancing of power, but not to the extent that it dampens initiatives or confuses responsibilities.

The institutional framework for the provision of inputs for rural enterprises needs to be tailored to the size and variety of a particular locality's requirements. Such activities as the provision of loan capital and marketing and extension services are best delegated to specialist organizations, perhaps publicly owned but autonomous corporations, which operate on a commercial basis. Such organizations require effective local representation and full co-ordination of their procedures and operations even down to the level of their relations with individual customers. It is desirable, however, that such services be kept separate from the project design and its implementation by a development agency. The task of establishing new enterprises or transforming established units is one in which the financial agencies must have a part to play.

The important task of providing opportunities for participation by target groups in the planning and implementation of individual projects raises the issue of the role of local government. In the long term local government machinery must become more effective to meet the aspirations of the rural population. In the shorter term, it is frequently by-passed, especially where it is dominated by minority interests such as the land-owning classes. In such circumstances new low-level institutions, perhaps

¹³ "Industrialization in relation to integrated rural development in India, Nepal and Pakistan" (ID/WG.257/4), annex III, p. 4.

based on production units or groups of units, will have to be constructed to further the interests of the target group.

The effectiveness of the institutional framework for aiding the development of rural industries will be directly related to the quantity and quality of expertise of the key personnel. The development of a committed and experienced cadre is a prerequisite for progress. Not the least important is the availability of staff with industrial and managerial experience who will be sensitive to the situation and difficulties of rural industries. This is an extremely difficult expertise to develop quickly in the amount required, but it is the factor likely to contribute most.

III. Content and organization of programmes for rural industrialization

It is likely that specific programmes will be focused on particular problems or deficiencies in the rural economy and that they will be organized to meet the needs and opportunities revealed in a particular locality or group of localities. The first step at the operational level will therefore be the identification of specific products for production in a particular locality within the broader priorities laid down at the national level. The various local projects and the assistance they require can then be organized with these in view.

Product priorities

The most important decisions leading to the development of rural industries are those associated with product selection. Yet these decisions are among the most difficult for development agencies to influence or to relate to. Furthermore, development agencies tend to identify problems common to an industry and to orient their programmes of assistance as a contribution towards the viability of the industry as a whole, which at best is only an approximation of the problems faced by individual enterprises. Here the root of some difficulties may be the quality of management, the organization of production, or the unsuitability of a particular product for its local market. Clearly, much more specialized knowledge and skills are required to deal with specific problems at the level of individual enterprises, and, understandably, development agencies are often ill-equipped to deal with them effectively.

The importance of product orientation of both enterprises and development institutions may be seen with reference to the problem of identifying industrial markets. The establishment of a set of product priorities and the subsequent orientation of development assistance selectively to encourage the production of such products is a fundamental part of the policy-making process. Such an approach must be based on the analysis of the present market in the locality concerned, with a view to the potential for change in demand and an assessment of the perceived needs of the consumers. The prime responsibility for this must rest with the individual entrepreneur, but considerable insight and detailed knowledge will be required of the development agencies concerned with providing direct support of individual entrepreneurs and with the organization of long-term public investment in infrastructure or more indirect measures of assistance to rural industries.

This collection and organization of market intelligence is beyond the capability of most small and rural enterprises, especially where the market extends beyond their immediate neighbourhood. At the same time, it is not the kind of task ordinarily suited to government agencies. There is insufficient awareness of the importance of this essential input into rural industries. Even where some awareness does exist there

is a great deal of uncertainty as to how to organize such activity, especially in developing countries where the lack of reliable statistics and market intelligence may be almost total.

The organization of production

The important task of providing greater opportunities for local participation raises the issue of the types of basic unit of production to be encouraged. The choices between public or private enterprise and entrepreneurial or more co-operative forms of production units are more apparent than real, since they will be derived from the politico-cultural tradition of the country or region concerned. Clearly the predominant type of production unit its size and sophistication will help to determine the kind of official assistance provided and the method by which it is delivered.

Larger-scale enterprises, whether publicly or privately owned, tend to be much more demanding in terms of the organizational, managerial and technical skills required and often rely on the import of qualified key personnel from other regions. Small private enterprises can assist in the mobilization of otherwise underutilized local resources, especially local capital, and should have the advantage of considerable flexibility in output and a ready adaptability to the changing needs of the market. Such enterprises are dependent, however, on local entrepreneurial skills and their access to adequate sources of finance; those with previous business or industrial experience will be better placed to exploit any additional opportunities and assistance provided by development agencies. Only in the simpler manufacturing processes and pre-industrial activities will the lower thresholds of capital and skill make for ease of entry by inexperienced entrepreneurs.

More co-operative forms of enterprise can be a most effective means of involving some of the poorer sections of the community and can also achieve increased self-reliance where they extend into subsidiary manufacturing or service activities.¹⁴ Perhaps the major factor in this will be the nature of local initiatives and local organizational abilities. There can be no denying the force and egalitarian progress of co-operative institutions, when fully developed, and the commitment and motivation that can come from the common ownership of assets. The closer participants are to decision making on investment opportunities, the better informed decisions are likely to be. Yet the number of instances in which such co-operative movements arise spontaneously, almost a necessary condition for success, seem to be relatively few.

Measures of assistance to rural enterprises

The various types of assistance that can be provided within rural industrial development programmes can be conveniently grouped into five main categories of those concerned with: the provision of infrastructure, the acquisition of skills, the role of an industrial extension service, the supply of credit, and the creation of a favourable business environment. While some assistance under each of these headings is almost certain to be required, the balance and distribution of the available resources between them will vary between localities.

¹⁴ "The role of industrial co-operation in rural development; experience of Poland" (ID/WG.257/7).

The provision of infrastructure

In developing countries and particularly in their rural areas, one of the basic limitations is the lack of physical infrastructure. Several case studies, for example in Kenya and India, have indicated that such basic investment for the rural economy should have a high priority. Two difficulties arise however: the high cost involved and the risk of inappropriate investment. In addition, there is a paradox associated with the initial development of rural infrastructure: while it increases economic activity and thus the autonomy of the region concerned, it also serves to strengthen linkages with and thereby dependence on nearby predominating urban centres. Improved road communications may, for example, increase the rate of migration from rural to urban areas. In this context it is appropriate to refer to the priority given in China to the provision of electricity to rural areas rather than to the improvement of roads. Infrastructural improvements are not necessarily discriminating in the benefits they confer.

Nonetheless, improved communications—particularly the provision of cheap and reliable transport for people and goods remain a basic requirement for rural industries. The more remote and isolated a location, the more difficult is the supply of raw materials, the more limited the market horizon, and the greater the problem of obtaining adequate supplies of inputs and essential services.

The provision of utilities, such as power supplies, is also a basic requirement without which it is extremely difficult to improve productivity. The availability of such utilities is not, however, simply a question of their presence; freedom from interruption of supplies and the lead times for installation or expansion are equally important. Effective means of communication of ideas and information by mail and telephone are also important, not the least for the effective organization and administration of any programme of assistance in remote areas with dispersed populations. Fairly frequent and close contacts are required between agencies, producers and consumers in order to facilitate the functioning of the market. Relatively little advance has been made so far in the application of mass communication media, e.g. simple self-help manuals, diagrams and guides, for educational purposes so that rural people are more able to help themselves.

The lack of an effective distribution system is another major obstacle for rural industries. In part, it is a function of the infrastructure available. It may also represent one of the sources of opposition to the growth of new rural industries, since the local trading communities may already be serving surrounding rural markets from distant sources such as imports. Government intervention and investment in distribution activities, wholesale or retail, is hazardous, although it is common to find price controls on certain materials. The chief difficulty with large-scale intervention, as in the United Republic of Tanzania where the entire distribution system has been nationalized, is that it tends to be over-centralized and is often controlled from outside the rural area. A great deal of flexibility and autonomy are needed in order to perform the trading function efficiently, for example as in the price-fixing mechanism. Variations in product specifications and quality, break of bulk and transportation, all represent formidable logistical problems with severe cost penalties for errors.

There are, of course, two ways in which the distribution system is particularly important for the development of rural industries. One is the supply of raw materials, which may be a significant constraint for smaller enterprises, especially more traditional artisan units. The distribution of finished products is the other. In this

regard perhaps insufficient attention has been given to the potential contribution of consumer co-operatives which may have an important role to play in the supply of basic needs. They provide considerable advantages in bulk purchasing, quality control and the apportionment of orders to local suppliers. In practice the extent of direct government involvement in the distribution system is often limited to price-control mechanisms or trading activities by autonomous, commercially oriented, public corporations, especially in the supply of raw materials where there has been exploitation by middlemen.

One of the most common industrial policies is the provision of land and buildings for industrial use.¹⁵ This comes about for a number of reasons: the spread of land-use planning and controls, concern for the environmental impact of industrial development, a shortage, and consequent high cost, of land for industrial use in prosperous agricultural areas, and urban redevelopment programmes. Attempts to relocate larger enterprises have also led to the large-scale development of land and services in the form of industrial estates, initially in major urban centres.

This concept of planned concentrations of industry with purpose-built premises has been extended to rural areas, primarily because little or no suitable accommodation is available for new or expanded industrial activity. However, a major difficulty is the scale of investment required, especially where the standards for industrial premises are too high and are inappropriate to the locality or to the stage of development of the local economy. All too often insufficient attention is paid to the requirements of individual enterprises, especially more traditional workshops, such as those favoured by artisans. Purpose-built new premises can impose excessive capital costs and overheads on rural enterprises, especially if their relocation is enforced through urban redeployment schemes. Some initial compromises are therefore necessary to allow standards of accommodation and working conditions to be upgraded gradually from very simple, low-cost beginnings as rural enterprises develop and can carry the additional overhead involved.

This principle of attempting to reduce capital and overhead costs to an absolute minimum applies particularly to the development of industrial estates. While the threshold of "centrality" justifying the costs involved in organizing and constructing an industrial estate is much higher than is commonly perceived by many development agencies, the concept remains popular. For politicians an industrial estate provides a valuable demonstration of development within a specific locality. For planners and development agencies, industrial estates are one means of showing quick results by focusing their resources on a few selected locations and organizing a package of incentives for would-be entrepreneurs. For the entrepreneur, estates are a welcome method of simplifying the lengthy and complicated process of establishing a new enterprise, acquiring or constructing premises and starting production.

However, the difficulties involved in the construction of a successful industrial estate programme are considerable and the costs are high. The experience in India over two decades has served to point out their limitations in rural areas. Industrial estates are insufficient catalysts of development on their own; they should be supported by other forms of assistance within a comprehensive policy designed to encourage industrial development. They are more suited to the task of accelerating the development of rural industries than to that of initiating them. The advantages of less sophisticated developments, such as workshop clusters for artisans, are perhaps

¹⁵ This policy was the subject of a report entitled "The effectiveness of industrial estates in developing countries" (UNIDO/ICIS/32).

more appropriate to rural situations, but even these are not realized unless there is significant simultaneous progress in entrepreneurial and organizational ability.

Increasing sophistication of infrastructure, and thus accessibility to larger markets, allows increasing specialization of industrial production. In rural areas the smaller scale of production, and the limited skills and technologies of most enterprises, will benefit from a gradual improvement in infrastructure. However, without the essential basic services such as power, water, transport and banking services, industrial enterprises can scarcely function at all.

The acquisition of skills

In traditional rural economies, one of the basic requirements for the development of industry is the acquisition of new skills, both by those who will manage and supervise production and by those who will practise industrial crafts. The disposition to take risks and the ability to mobilize resources are derived from cultural attitudes, the local environment and family background; to some extent they can be created through more formalized training. The sources of entrepreneurship may be trading communities, land-owners, the professional and artisan classes, experienced supervisors and workers in industry, and technical graduates of higher education (given some work experience). Such groups of people may well be included in the target groups of many rural industrialization programmes.

The selection of a potential entrepreneur for training or financial support is a high-risk activity, but not more so than that of identifying an artisan capable of being transformed into an owner/manager of a more organized enterprise. High mortality rates are almost inevitable, particularly among smaller enterprises, and have to be accepted as a development cost. Given the necessary patient commitment of the development agencies, and certain inputs designed to stimulate and motivate a response from the target group, the evidence from district-intensive campaigns in India¹⁶ is that a response from rural entrepreneurs will be forthcoming; the difficulty is to identify the response and to nourish it to maturity.

The availability of expert technical advice and practical guidance on how to overcome the initial obstacles to establishing or expanding an industrial enterprise are necessary catalysts. The exposure to fresh technologies and methods of production and the timely availability of financial assistance are also essential. In rural areas the availability of packages of low technology production processes and turnkey operations is probably crucial to the emergence of the first few manufacturing enterprises. The extent to which development agencies are able to identify and establish contact with prospective entrepreneurs will in large measure determine the success in accelerating the development of rural industries. Once major investment decisions have been taken in principle, then help can be provided with start-up problems and production support services can be made available. The lead time from inception to production in new or expanding enterprises is often as much as two years. One of the basic qualifications for success as an entrepreneur is the determination and commitment to adapt to and overcome the tortuous processes involved in the run-up of new industrial capacity to production.

Entrepreneurial development and training programmes, often incorporating attempts at achievement motivation, have been designed and introduced in some

¹⁶ ID/WG.257/13, *op. cit.*

developing countries. Some of these seem to do little more than help with the mechanics of starting a new enterprise. Others teach the most basic principles and techniques of management, and try to create an awareness of more advanced methods; any further interest can then be met by more specialized courses according to demand. Other approaches such as "action learning", designed to educate entrepreneurs to recognize business problems in their particular situation, have also been devised. Yet insufficient attention has been paid to presenting management skills in a simplified form which can be more readily used and absorbed by rural entrepreneurs. One of the greatest difficulties with training entrepreneurs is that, once they are immersed in the day-to-day problems of managing an enterprise, they cannot afford much time to devote to sharpening their skills.

Within rural areas where there is widespread unemployment, both disguised and real, the paradox of abundant labour but a shortage of skills is common. The rural labour force is likely to lack the industrial crafts and skills required in more organized forms of production, especially those involving new technologies and a greater division of labour. The content and vocational orientation of basic education, if any, can provide the foundations for later specific training programmes, as long as the necessary integration of objectives has been achieved. In most rural situations the approach should probably be through informal education schemes for adults and on-the-job training.

Training of traditional artisans is entirely on-the-job by word of mouth and by example. The established training hierarchy may extend, as in Nigeria, through prolonged periods of helping, extended apprenticeships (for which privilege the apprentice will have to pay), a period as journeyman, and perhaps as supervisor, before eventual establishment as an independent master. It is interesting to note that this traditional system of apprenticeships and subsequent "hiving off" and imitation is commonly reflected in the pattern of growth of small enterprises, even in modern trades. Employees, when thoroughly trained and acquainted with a particular line of business, will branch out on their own in direct competition with their former employer, sometimes even enjoying his acquiescence and indirect assistance. A successful, small enterprise rapidly attracts a number of imitators in close proximity, almost regardless of the level of demand.

Training in the skills likely to be required in rural industrialization programmes should be carried out as far as possible in advance of the creation of job opportunities. The key production skills are those of supervisors or foremen, particularly where the chief contribution of the entrepreneur is his organizational/commercial ability rather than his mastery of the production processes involved. In most smaller rural enterprises these foremen will carry the responsibility for production management as well as the training of the work force, and may well be the key to increasing productivity.

The role of an industrial extension service

The operation of an effective industrial extension service is probably the single most important form of assistance supplied by an agency to rural industries. It is evident from the Kenya case study and from experience in other developing countries that an industrial extension service occupies a central role in relation to the development of industrial capabilities. It is, however, a role that is difficult to define precisely and that varies considerably between countries. There is a common

tendency, illustrated in the Kenyan Rural Industrial Development Project,¹⁷ to impose all the general objectives for industrial development on the extension service. An extension service should, however, have limited and very specific functions, viz. the role of supporting production. It should be primarily oriented towards servicing existing production capacity and be concerned with the organization of production as well as with the technologies of both product and production processes in order to improve efficiency, quality control and product design. Its basic techniques include in-plant counselling and demonstrations of improved technologies, work methods and equipment. Extension personnel must be appropriately trained and supported by fully qualified and experienced staff, but not all extension staff need be highly qualified. Indeed, for helping smaller enterprises with basic management techniques, relatively junior extension workers with only a basic education (and the necessary training) may be most appropriate. Such assistance, however, requires a close and continuing relationship between extension staff and individual enterprises. There is an inevitable overlap with the training function; however it is desirable that these functions should be kept separate, although closely integrated.

The necessary support services may include a consultancy service to deal with specific production difficulties, repair and maintenance facilities for machinery and equipment, tooling facilities providing high-precision engineering capabilities, and specialized process and treatment facilities, although, in the latter case, if demand is sufficient, there may be a case for "hiving off" that facility to a local enterprise on a commercial basis. Such services as these are, of course, expensive to provide and must be tailored according to demand. It would be desirable that those enterprises benefiting from the services should bear an increasing proportion of their true cost as time passes, but a significant proportion of the cost will have to be carried by the extension service for some considerable time.

Technical assistance provided by an extension service will only be constructive if the expertise of its staff keeps pace with that of its clients. This will require a constant renewal of skills and knowledge which will only be possible if some specialization takes place between various extension centres. This is particularly the case in the context of development work undertaken at the product or process level. Few rural enterprises are likely to be able to afford such development work, although some will have considerable innovative capacity. Assistance will be required to put these innovations into production, and it is doubtful if this can be supplied from afar by a national research establishment. The task of research associations will be more fundamental research on new technologies. "The challenge of product development lies in the combination of the technical processes with the study of the relevant market segment in consultation with local producers."¹⁸ The evidence from Kenya suggests that new projects will show an increase in capital intensity over the old. Whether or not this is inevitable remains unclear; the degree of capital intensity would, however, seem to be amenable to some control.

There are two related aspects of the work of the industrial extension service: that of industrial technology and that of management techniques. In view of the limited resources available to most rural industries, the efficiency of an entrepreneur in using his financial resources, particularly working capital, will probably determine the success or failure of the enterprise. The availability of assistance with the identification of business problems will be a valuable input into the viability of rural

¹⁷ ID/WG.257/6, *op. cit.*

¹⁸ ID/WG.257/6, *op. cit.*, p. 32.

enterprises. The example of the Partnership for Productivity "bicycle accountants" in Kenya¹⁹ is a valuable one for it illustrates that fairly low calibre, but properly trained, extension staff can provide assistance appropriate to the entrepreneurs' absorptive capacity.

The supply of credit

The availability of long- and short-term credit is a vital ingredient for the development of rural industries and one that commonly receives a high priority within industrial strategies. It is most unusual, however, for sufficient credit to be available locally to meet the needs of existing enterprises. Traditional artisan-type and new small enterprises tend to be under-capitalized. Existing lines of credit through money-lenders or commercial banks are not adequate to cope with significant new investments. The problem of finance for industrial investment has two different aspects: the need for risk capital to supplement the equity capital available through members of the family or friends, and the need for working capital. The real issue, however, is common to both, i.e. availability of or access to capital - *not* its cost.

Special facilities are likely to be required to provide risk capital and long-term loan capital, an important purpose of which would be to bolster an entrepreneur's own resources and enable him to raise loans through more normal channels on current terms. Special funds will perhaps need to be backed by guarantees to help to cover the risk of failure and to encourage the relaxation of stringent loan terms to some extent. A flexible approach in terms of the securities demanded will be necessary to support deserving entrepreneurs who provide the best prospects for securing both a return on the loan and repayment of the principal. The availability of hire-purchase facilities for fixed assets would seem to be appropriate to rural areas. The process of client selection is one calling for the effective co-ordination of decisions and the integration of policies between the various agencies involved in order to avoid delay and unnecessarily complicated procedures.

Responsibility for assessing the feasibility of proposals can rest only properly with the finance agencies concerned. Agencies will therefore require the necessary skills and expertise to take both a financial and commercial view. Responsibility for promoting fresh investment opportunities in rural areas should probably rest with the finance agency, at least in part. Therefore agencies will have to be effectively represented locally, but will benefit from the depth of understanding of the local market which this familiarity and local commitment will involve.

The supply of working capital can best be handled by the banking system, providing the banks respond to government efforts to ensure a more liberal approach. Some guarantees will doubtless be necessary to bring this about. Changes in attitudes towards the provision of rural credit require a major retraining and reorientation programme in order to equip the banks for such an administrative-intensive task. Procedures and safeguards can be devised, such as the control of stocks of raw materials and finished goods, but the kind of relationships with clients established by the banks will do much to determine the uses to which loans are put. Clearly a lack of local branches is an almost insurmountable obstacle to the development of rural industries. Close proximity and frequent contact with clients are prerequisites for the

¹⁹"Case study of rural industrialization in Kakamega District, Kenya" (ID/WG.257/2), p. 12.

successful recovery of loans. There is much that banks can do to encourage simple accounting procedures and the monitoring of an enterprise's progress, so that the overall level of resource utilization and the general efficiency of an enterprise is increased. Simple accounting techniques need to be devised for small enterprises, especially for the more traditional types. The high additional servicing costs of rural credit schemes may well be such as to require some subsidy from development agencies, but the reward in the development of rural enterprises should more than repay the cost incurred.

The creation of a favourable business environment

The presence of a hostile business environment is an undoubted deterrent to industrial investment decisions. The identification and amelioration of the aspects of broader policies which have adverse effects on rural industries is an important task for a development agency. For example, environmental controls covering noise, pollution, waste disposal, and safety and building regulations may impose cost penalties on emergent rural industries which detract from their viability. Controls over land use often adversely affect location decisions, while those regulations affecting the ownership and control of productive assets and wealth are major determinants of investment decisions. Similarly fiscal policies and the regulation of business practices and trading activities can be obstacles to investment in industrial enterprises.

Many developing countries raise the threshold at which these controls apply in order to exempt smaller enterprises. Once a special privileged category of industry is created, questions of definition of eligibility immediately arise. These tend to vary according to the purpose in view. However, the coincidence of ceilings produced by arbitrary criteria determining eligibility for special incentives or other benefits should be avoided to prevent the emergence of barriers to growth or expansion of individual enterprises, which might cause the loss of benefits. It is doubtful if there should be any distinction between the treatment of enterprises in the small/medium-size range. There may well be a stronger case for recognition of the different problems of very small enterprises, i.e. essentially one-man businesses.

Attempts to discriminate between enterprises in terms of location are similarly fraught with difficulty. Given that the problems of definition can be solved, blanket exemptions or special privileges are not sufficiently discriminating, while the alternative is a very administrative-intensive, time-consuming task which multiplies the opportunities for corruption. The drive to disperse and relocate industrial capacity has led to the introduction of regional or subregional capital subsidies or other incentives in some countries. It is unclear what the impact of these measures is on the smaller rural enterprises. It is probably not significant. Larger, more capital-intensive operations are attracted by such benefits, which are regarded as compensation for the increased costs inherent in poor locations in more remote or backward special development areas. The effectiveness of such measures is probably related to the extent to which benefits are focused on limited areas, i.e. discriminating between or within rural areas. They should therefore be of limited duration, perhaps lasting for a period of about five years, until sufficient momentum for development has been generated. The impact of such measures is to some extent indirect, in that they may well contribute to the build-up of confidence in the future prospects for development in a locality, since they serve as evidence of the Government's

commitment. This increased confidence may lead to the establishment of new enterprises.

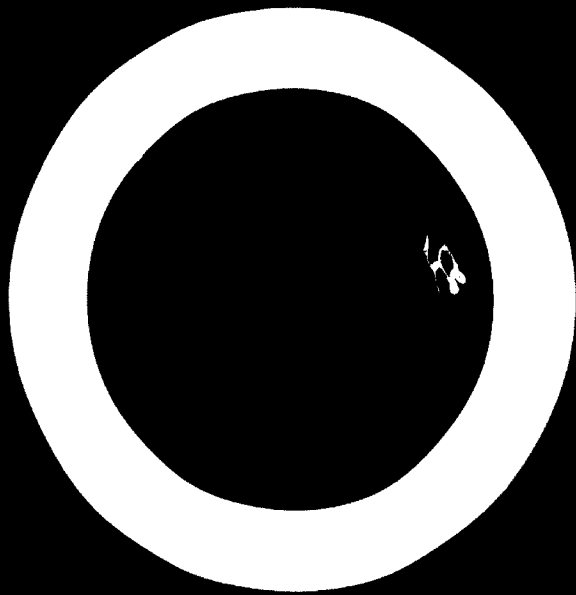
The largest category of environmental measures influencing industrial development are those designed to nourish enterprises through the period before they reach the break-even point. Accelerated depreciation allowances, capital subsidies and deferred interest charges are some of the many options available to ease cash flow problems. In the case of rural enterprises with a very limited equity base and heavily bolstered with loan capital, there may be a case for subsidizing the cost of capital in the early years. Without this, profitability may be insufficient to enable them to survive normal fluctuations in the level of demand, especially since their effective working capital is likely to be sharply reduced in times of a credit squeeze. The danger with subsidizing the cost of capital is that it will be applied indiscriminately and for an indefinite period and will distort the true factor cost in a country, with adverse implications for the labour intensity of output.

Some more extensively planned economies go so far as to attempt to license and control all industrial capacity. Restrictions are imposed on larger-scale enterprises, and product groups are reserved for smaller and perhaps more traditional enterprises. The economic basis for such demarcations remains unclear. The justification is essentially political. Where large numbers are already employed in traditional industrial activities, especially in cottage and handicraft industries, they are vulnerable to competition from imports or mass-produced alternatives and may require some protection in the short term. Presumably such protection implies attempts to improve the competitiveness of the traditional sectors, otherwise the cost to the economy as a whole would be too high in the long term.

The improvement of the quality of the business environment is the least tangible of the categories of assistance to industrial enterprises. Its importance in the attempt to establish new industrial capacity in rural areas is perhaps limited, particularly for smaller or more traditional enterprises. Once the basic services and facilities have been provided in rural areas and obvious constraints to growth and expansion have been removed, smaller enterprises seem to prefer a freedom from regulation and control while they concentrate on meeting the needs of the market-place. As rural enterprises become more organized and sophisticated, they become more sensitive to the subtleties of fiscal and commercial policies. The right balance between nourishment with practical assistance and excessive interference in the market game is therefore a most difficult one to achieve.

PART THREE

Case Studies



I. The People's Collective Industries of Jalisco: a case study of rural industrialization in Mexico

by

S. A. Ferrer*

Historical background

This chapter deals with a recent project of regional rural development designed to incorporate landless peasants, and particularly young unemployed women, into a process of industrialization based on small collective enterprises. The project had the specific social objective of improving the well-being of the rural population. Therefore industrialization was not seen as an end in itself, but only as a means towards furthering social welfare.

In order to understand the role both of external and internal factors in influencing the course of the collective experiment, one must first have some idea of the broader historical background, both regional and national, which is of direct relevance to the contemporary balance of social and economic power in Mexico. Only by taking historical forces fully into account can one judge the actions of those who have participated in any development project in the past few decades.

Agrarian collectivism and peasant organization have deep roots in the Mexican countryside. They have served as the basis for a number of efforts to improve the standard of living of the peasantry and, on a broader plane, to provide alternative models of development for the nation as a whole. The project to be discussed in the following pages is thus part of an historical tradition; it meets at the same time the kinds of problems faced by its predecessors and the novel difficulties brought on by the course of recent events. Its success or failure is not simply of academic interest. The alternative of national development built upon the marshalled energy of the peasantry is still a real one in Mexico, despite almost 40 years of urban growth. The peasantry has not disappeared, and issues such as agrarian reform, which one might expect to have faded with the revolution of 1910, are as alive today in many parts of the countryside as they were at the turn of the century. The question of how rural people will shape their own future, and that of the country, has not yet been resolved. It is very much open to experiment.

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Early attempts at rural industrialization

By the early 1970s a serious decline was evident throughout the Mexican economy as a whole to which the stagnation of the agricultural sector had greatly contributed with consequent large rises in food prices and in agricultural imports. This economic slump was related to the international economic crisis, but domestic factors were a major contribution. A number of critical socio-economic contradictions dating from the 1910-1917 revolution have remained unresolved even to date.

Different views of rural development have been evident within the governing political coalition during the past 50 years. With the revolution, the traditional landed elite, in league with foreign investors in plantations and the extractive industries, lost power to groups never before adequately represented within the political system: workers, peasants and members of a nationalist middle class. By the early 1930s, it was clear that these new revolutionary leaders intended to promote economic development through industrialization and the general modernization of society. It was equally clear that a division existed between those who felt that industrialization must follow the capitalist pattern (and most specifically that represented by the United States of America) and those who were searching for an alternative which might include elements of co-operativism, and even of socialism, and who championed a mixed ideology of anarchism, Marxism, liberalism, and Christian democracy, with some roots in pre-Hispanic Mexican traditions.

Agrarian reform was the most pressing problem and by 1934, when Lázaro Cárdenas became president, peasant unrest in protest against the shortcomings of the previous administration's handling of the reform was on the increase. Cárdenas had no choice but to accede to the demands of the peasants. During his administration he distributed more land than all the previous post-revolutionary presidents combined. Expropriation of some of the largest commercial estates was authorized and former agricultural workers were grouped together to form "collective *ejidos*" co-operative enterprises working irrigated land with credit from a newly founded state bank.²⁰ When necessary, land reform beneficiaries were provided guns by the Government to protect their newly won land.

In effect, Cárdenas' strategy of development represented a departure from the capitalist pattern of industrialization. Rather than concentrating all industry in a few urban areas, diversified agro-industrial complexes were to grow out of the collective *ejidos*. Thus, it was thought, the country could avoid or at least significantly reduce the high social costs inherent in the capitalist course. Implementation of such a policy was obviously not easy, even for as strongly populist a Government as that of Cárdenas. The Second World War provided incentives to Mexican entrepreneurs opposed to the reformist measures, and the Cárdenas strategy of development was radically modified; the succeeding president lent open and full support to urban industrialization on the capitalist pattern.

²⁰The *ejido* is a traditional form of communal land-holding dating in Mexico from pre-Hispanic and colonial times. *Ejido* land historically belonged to the entire community and could be worked by anyone. In Mexican agrarian reform legislation following the revolution, the *ejido* became a grant of land to a group of beneficiaries who held title to it in common, and who could not sell or mortgage it, but who could (if they liked) work it individually and pass their particular parcel on to an heir. A "collective *ejido*" worked jointly by all members and not divided into individual plots is an experiment generally associated with the Cárdenas years, although it existed in a few parts of the country before that time.

For a number of years this policy produced high rates of economic growth without much popular unrest. The demand for unskilled agricultural labourers in the south-western United States attracted large numbers of Mexicans, at wages much higher than those they were accustomed to earn; and the establishment of new industries in the principal urban centres of Mexico itself absorbed other migrants. Rural industrialization was therefore neglected, with the exception of traditional activities such as sugar-cane processing which were generally in private hands. Official support for reform of the agrarian sector turned to indifference, and then to open hostility. Agrarian legislation was modified to allow the private sector to consolidate large holdings, which received the benefit of state investment in infrastructure (dams, irrigation works, roads, electricity), credit facilities, technical assistance and price subsidies. As a consequence, the private sector supplied an ever-increasing share of all farm production, while the majority of all *ejidos* and small private holdings were kept at a near-subsistence level. Only a few collective *ejidos* managed to remain well organized and independent, producing efficiently not only for the national market, but also for export (especially cotton, tomatoes, and wheat, in La Laguna, Sinaloa, and the Yanqui Valley of Sonora).

By 1960, however, it was clear that the social costs of a strategy of urban industrialization were high. Landless peasants forced to migrate to the cities provided an abundant labour force which contributed to maintaining low wages in industry. Between 1940 and 1960, real wages in the cities declined by 6 to 10 per cent. The standard of living in the countryside declined precipitously as population growth combined with increasing mechanization reduced employment possibilities. The average number of days of work available to a farm labourer fell from 190 in 1950 to 100 ten years later, with a decline in real wages over the period 1939-1959 of between 7 and 24 per cent, depending upon the source consulted.²¹ As a consequence, middle and upper income groups increased their share of national income. The poorest 50 per cent of the population accounted for 19.1 per cent of all income in 1950, 16.7 per cent in 1958, 15.7 per cent in 1963, and only 15 per cent in 1969.²² Exaggerated urban growth has brought with it serious socio-economic, political and cultural problems. Mexico City, with approximately 13 million people in 1977, is now virtually unmanageable.

When a worldwide economic crisis was superimposed the situation became sufficiently serious to prompt a re-evaluation of current policy. As a result both public and private sectors turned to the possibility of rural industrialization, to be achieved partly by transferring some industries and by establishing others outside the limits of the present conurbations, and partly by setting up small industries in rural areas to make use of local resources and, whenever possible, to produce goods for local needs.

Recent efforts

During the 1970s the public sector has encouraged the establishment of small rural industries, primarily through two programmes designed for the beneficiaries of land reform. One programme is under the Fondo Nacional de Fomento Esidal

²¹ Centro de Investigaciones Agrarias, *Estructura agraria y desarrollo agrícola en México* (Mexico City, Fondo de Cultura Económica, 1974), p. 344.

²² Wouter van Ginneken, *Mexican Income Distribution within and between Rural and Urban Areas*, World Employment Program Working Paper No. 2-23 (Geneva), p. 99.

(FONAFE), part of the Ministry of Agrarian Reform, which was founded during the 1950s to apply funds received by *ejidos* from the exploitation of communal resources (pastures, woods, mines) to such community projects as schools, roads or public utilities. During the presidency of Luis Echeverría (1970-1976), FONAFE was provided with additional public money and its purpose broadened to include the promotion of industrial development in the countryside. By 1976, its funds totalled 2,000 million pesos, compared with 76 million in 1970, and the number of *ejidos* covered by the programme had grown from 3,235 to 5,317.²³ Seventy-eight per cent of these funds were invested, although only 18 per cent of that investment was in productive activities essentially rural industries. A total of 351 peasant enterprises in forestry, agriculture and husbandry, construction, tourism, manufacturing and fishing were financed, with an accumulated investment of 651 million pesos and the creation of 13,161 permanent and 7,000 part-time jobs. During the same period, FONAFE also promoted 36 industries as joint ventures between local people and the State. These cost 323 million pesos and provided employment for 1,908 workers.

Concurrently, a second rural development effort was being carried out by the Programa de Inversiones para el Desarrollo Rural (PIDER) within the Ministry of the Presidency. From 1973 onward, both federal and international (World Bank) funds were channelled to poorer (but by no means the poorest) regions of the country, with the stated goal of restructuring peasant economies on a more productive basis. Investments covered three main areas: physical and economic infrastructure, social welfare (technical training, health, housing), and production (agriculture, mining, fishing and small industries). In all, between 1973 and 1976, 5,824 million pesos were spent to these ends. The PIDER programme co-ordinated its rural industrialization projects with the Compañía Nacional de Subsistencias Populares (CONASUPO). By the end of the Echeverría administration, CONASUPO had set up several small industries: clothing and cloth production, fruit, vegetable and milk processing, and 20 small sewing establishments. In addition, PIDER co-ordinated its activities with the Productive Activities group (*Actividades Productivas*) within the Ministry of the Presidency, in order to incorporate into federal programming the experiences of one large effort at rural industrialization then under way namely the People's Collective Industries in southern Jalisco.

Preconditions for the establishment of small rural industries in southern Jalisco

The People's Collective Industries of southern Jalisco were established with a number of factors in their favour. In the first place, the ecological conditions of the region were good compared with many other parts of Mexico, and natural resources were relatively abundant. There was sufficient water (annual mean rainfall was 700 mm), good crop land and a temperate climate allowing mixed cultivation. Secondly, the historical background of the area provided experience in rural organization: southern Jalisco was the scene of a peasant movement which supported a triumphant faction during the revolution and won land reform as a result. Thirdly,

²³ José Gascón Mercado, "Acción del FONAFE, 1971-1976", *El Ejido Industrial* (Mexico City, FONAFE, 1976).

partly as a consequence of the preceding two factors, standards of living in the region were apparently never as low as in a number of other areas of the country. Finally, experience with manufacturing during the past 100 years has contributed to a local understanding of industrial requirements.

Southern Jalisco covers a little more than 22,000 km² (28 per cent of the State). According to the 1970 census, it has 559,822 inhabitants with an average population density of 22.5 to the km². It has one of the highest coefficients of crop land *per capita* in the country.

The combination of agricultural and industrial activity, including the exploitation of natural resources such as wood, salt, sand and stone, plus the processing of sugar cane, kept unemployment relatively low, 2.9 per cent in 1970 compared with 3.8 per cent for the nation as a whole. Nevertheless, unemployment reached 4.5 to 8.9 per cent in seven counties of the region, and underemployment, exacerbated by seasonal work in agriculture and the few alternative sources of employment, was high.

As a consequence of an armed struggle against large landowners during and immediately following the revolution, a process of land reform was begun in southern Jalisco which eventually delivered 51 per cent of all agricultural land to the peasants. In 1970, there were 35,718 *ejidatarios*,²⁴ grouped in 513 agrarian communities or *ejidos*, holding an average of 7.6 hectares of crop land *per ejidatario*. The fact that land reform beneficiaries predominated and that they disposed of relatively adequate resources (they hold 67 per cent of the irrigated land of the area) was of importance for any effort like that of the People's Collective Industries. Nevertheless, almost half the land of the region remained in private hands; the average size of private holdings was 15.9 hectares, but some properties were very large. Peasant families in some of the more isolated parts of southern Jalisco lived very badly, but the standard of living of most of the population of the region was better than that in much of the rest of the country (see table 1).

TABLE 1. SOUTHERN JALISCO REGION: COMPARATIVE INDICATORS OF THE STANDARD OF LIVING, 1970

(Percentage)

Region	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Southern Jalisco	52.4	28.7	7.9	40.2	65.6	31.2	22.8
Rest of the state	37.4	24.6	...	31.1	41.1	23.5	18.7
Rest of the state ^a	51.5	32.5	...	47.7	65.8	27.9	24.7
Total state	39.7	25.3	9.2	32.7	45.2	24.9	19.4
Mexico	44.7	28.3	9.1	38.8	58.8	37.3	23.7

Source: Calculated on the basis of data from the IX Population Census, Mexico, 1970.

Key: (1) Gainfully employed population earning less than 500 pesos/month

(2) Average population of more than one year old who do not regularly eat milk, eggs and meat

(3) Mortality rate

(4) Population in dwellings without piped water

(5) Population in dwellings without sewage

(6) Population in dwellings of one room

(7) Illiteracy rate

^aExcluding the capital city, Guadalajara.

²⁴Peasants who are beneficiaries of a grant of land and who hold the title to it in common.

Previous experience with industrialization

Since the colonial period the state of Jalisco has been an important agricultural province, and a permanent rivalry has existed between the elite of Jalisco and that of Mexico City. In northern Jalisco, the indigenous population was exterminated, and a combination of the *hacienda* system and small, private, family farms developed to provide food, raw materials and cattle for the famous mining towns of Zacatecas and Guanajuato across the border. In southern Jalisco, a complex of smaller *haciendas* supplying local mines was also established, but its natural advantages made the south primarily a region of sugar plantations. A few communities of Indians were allowed to survive, organized by Catholic priests, on communal lands in some parts of the region. According to one study, the indigenous community in the city of Tuxpan, in the 1950s, had one of the most satisfactory levels of living of any Indian group in Mexico.

Industry, then, originally developed in southern Jalisco as an adjunct to a sugar economy. (Salt mines in the lake area of the upper plateau dating from pre-Hispanic times were also worked by the Spanish colonists, who later increased their output.) But by the middle of the nineteenth century, political independence from Spain and contact with the ideas of the industrial revolution in Europe encouraged a diversification of interests based on revenue from commercial agriculture and mining. Iron ore taken from local mines sustained the development of a small foundry producing crude agricultural tools. In addition, a businessman from the northern part of the state established a successful paper mill which exported high quality paper to the United States.

By the beginning of the twentieth century small industries had spread over about half the region. Besides iron tools and paper, soap, sugar, flour, leather, cigars, matches, rum and alcohol, beer, shoes, candies, soda and bottled mineral water, candles and textiles were produced. Nevertheless, the accomplishments of the early industrial pioneers were undermined by the penetration of railroads into southern Jalisco at the turn of the century, as well as by the chaotic conditions surrounding the revolution of 1910. By 1913, most of the early industries of the region had disappeared. Some of their local owners migrated out of the region, especially to Guadalajara, and were replaced by powerful new groups of entrepreneurs from other parts of Mexico and abroad. Sugar mills long in the hands of local *hacendados* were bought up by outsiders (in some cases by the federal Government) and began to work with credit societies formed by beneficiaries of land reform. A successor to the original paper mill was established during the 1940s, similarly by an outsider and after a few years passed into the hands of the federal Government. (This mill, in Atenquique, still provides relatively well-paid jobs for 500 people and sustains the entire network of services required by the 3,160 inhabitants of the village.) During the 1950s and 1960s three other outside enterprises were established in the region: two cement factories, one owned by a transnational corporation, and an iron works affiliated to a home office in Monterrey.

Socio-economic problems in the 1970s

The increasing penetration of the regional economy by outside interests, combined with the growing control over agricultural land by private entrepreneurs, has caused a number of problems. Control of a growing share of agricultural

production by large commercial farmers has meant, for example, that a special impetus has been given to mechanization, reducing the demand for farm labour and encouraging unemployment. Less food is now produced within the region for local consumption, as land is increasingly used to supply products for industrial processing outside the region (sugar cane, sorghum, fodder, barley). Profits obtained from manufacturing and commerce, as well as from agriculture, are less likely to be re-invested in the region than in the period when local people were involved. At present, commercial centres like Ciudad Guzmán serve to channel resources out of southern Jalisco.

Local rural people are therefore becoming increasingly marginal to the most important economic activities of the region. The result has been emigration. Between 1950 and 1970, the population of southern Jalisco grew at a low rate compared with that of the rest of the country; in the lake and mountain areas it was almost stagnant. Thus there was a clear need for development effort at the local level.

Establishment and performance of the People's Collective Industries

Role of the Comisión del Sur

In 1965, the government of the state of Jalisco divided the territory into regions, each with a commission for the promotion of economic development. This step was not taken entirely on administrative grounds; it also represented a way of distributing power and decision making among the most important groups of the state, thus striking a balance that would minimize political problems for the governor.

The commission established in southern Jalisco, called the Comisión del Sur, was directed by a young, energetic student leader whose father, when governor of the state in the 1920s, had actively promoted agrarian reform within the southern region. At the time of his appointment, he was private secretary to ex-President Lázaro Cárdenas and was therefore enthusiastic about applying his experience to regional rural development in Jalisco. Because of its very limited budget, however, the Comisión was restricted to the role of promoting, organizing and co-ordinating programmes of infrastructure approved by the federal Government. In the process, local peasants were organized to some extent and their demands brought to the attention of official institutions. New roads were opened, small primary schools and health centres were built, and some technical assistance was provided to small sugar-cane producers.²⁵

In December 1970, under the Echeverría administration, the political and economic position of the Comisión del Sur was greatly strengthened. The director of the Comisión was the brother-in-law of the new President and therefore enjoyed his confidence. During the following years, 2,197 million pesos (\$US 160 million) were directed into southern Jalisco by federal government agencies; and the Comisión del Sur was the channel for implementing these programmes.

The role of the Comisión in the field of education was particularly important. Taking note of the inadequacy of standard architectural designs for the prefabricated schools built by the federal school construction programme, which did not allow for

²⁵ This account is based upon personal interviews conducted in 1975, 1976 and 1977. The total amount invested in the region during this period was 28.9 million pesos, of which 23 per cent was provided by the communities themselves. See José Guadalupe Zuno Arce, *Industrias del Pueblo*; thesis, University of Guadalajara, 1977, p. 10.

regional differences in climate and building materials. Comisión personnel decided to design their own schools. Warmer wood buildings with fewer windows were proposed for the colder, higher areas of the region and cooler, more ventilated structures built of brick, with tile roofing, for the warmer valley areas. In one case (that of Las Caleras), which became a symbol of future co-operative effort, an entire community was organized co-operatively to build its own one-room primary school in five days in the face of threats by neighbouring landlords who had opposed all previous popular efforts to obtain education. The Comisión also promoted the establishment of 12 middle-level technical schools. Emphasis was given to co-operative practical activities, including the farming of 10 hectares at one agricultural school near Sayula, which also trains mechanics to repair agricultural machinery, thus providing a service to the peasant farmers of the area. By 1975, 92 boys and girls had graduated from this school, and most of them went on to study at the higher-level regional agricultural school. A much needed technical education was thus made available to children of low-income families in the face of competing demands from a high-income minority for a more academic education.

A further example of the efforts of the Comisión was its attempt to organize land reform beneficiaries and small farmers who supplied timber to the Atenquique paper mill, and who had always been in an unfavourable negotiating position vis-à-vis the government-owner enterprise. Endeavours by the director of the Comisión to persuade the mill workers to support the peasants in their efforts to get better prices failed completely. The workers represented a privileged faction of the local working class and exhibited an utter lack of class consciousness.²⁶

Establishment of the first rural industrial workshops

As the Comisión del Sur became increasingly effective in its co-ordinating role, and as its power and financial resources grew, it was in a position to consider the organization of small rural industries. The decision to move into this field arose from a strong local demand for jobs and a higher income for the landless peasants, but the particular situation that brought about the first small enterprise was virtually a coincidence. In 1973, the Comisión was involved in an attempt to obtain rural electricity supplies from the Federal Electricity Commission. At that time, the Commission could not comply with the request (although it had formally agreed to include southern Jalisco within its electrification programme) because no cement utility poles were available. It suggested, however, that if the Comisión were able to supply the poles, electrification could proceed at once.

This was the kind of opportunity the director of the Comisión and his team were (perhaps almost unconsciously) looking for. It was decided that the people who would ultimately benefit from the electrification programme should make the poles. But the organizers of the project were not sure how to establish an enterprise which was not a typical private corporation or a production co-operative. Given the lack of a legal framework corresponding exactly to what they had in mind, they decided to begin by setting up a corporation with specific regional development objectives. Thirteen share-holders, including the director of the Comisión, founded what they officially called Productive Activities Incorporated; six of them provided capital and

²⁶ Luisa Gabayet Ortega, "Economía familiar de los obreros de Atenquique", in *Ensayo sobre el Sur de Jalisco*, op. cit., p. 199.

seven peasants were regarded as providing labour capital. The distinctive feature of the corporation was that its workers participated in a profit-sharing scheme according to the number of labour shares allocated to each worker, these labour shares being taken as equivalent to the value of the capital shares of the other six founding members.²⁷

With an estimated capital of one million pesos,²⁸ Productive Activities Incorporated produced utility poles which provided an initial profit of 600,000 pesos. By common agreement of all the share-holders, only 200,000 pesos of this were distributed, the remainder being invested in new installations with the purpose of continuing to produce goods for government enterprises and ministries, thus providing work for the young unemployed peasants of the region. Local experience with co-operatives, fostered during the period when the Comisión del Sur had organized the population to obtain public works contracts, was beginning to pay off. The promoters themselves were gaining industrial experience and rural people were beginning to think in terms of setting up their own enterprises. A group of five girls who had once represented a community petitioning for drinking water facilities, for example, approached the director of the new corporation to suggest the founding of a sewing workshop in their village.

Productive Activities Incorporated expanded into the production of wheelbarrows, shovels, pick-axes, gloves, footballs and chalk, and founded a small lumber mill and a forge. The plan was to sell to the Government, which proved to be anything but an easy client. Experience with the wheelbarrows provides a case in point. The contract with the Ministry of Public Works was won in competition with a transnational corporation and therefore represented a triumph for the new enterprise. But it soon developed into a nightmare. The Ministry insisted on delivery at a number of different points throughout the country; since Productive Activities Incorporated did not have the transport facilities to comply with this condition, extraordinary makeshift methods had to be employed. Further difficulties with a government contract arose in connection with the production of footballs. Once the footballs were ready, it was discovered that the official in charge of receiving them had been replaced by another who refused to honour the contracts of his predecessor.

The most basic problem at this stage in the development of the enterprise was that bureaucratic procedures within government offices were too slow for an organization as financially weak as Productive Activities Incorporated. To obtain the raw materials with which to produce finished goods, it was necessary to run into debt, either with the providers or with the Government. But with fixed repayment dates, and delayed payment for goods delivered, the corporation faced large debts with rising rates of interest. Therefore by the end of the first year of operation, most workshops had to be closed. Only the chalk factory and the installations for making cement utility poles, both sustained by long-term contracts, continued to operate.

The result of this initial experience was a drastic change in production strategy. It was decided in February 1974 to produce goods needed for direct sale to the local

²⁷ Julio Pomar, "La nueva revolución: industrias del pueblo en el Sur de Jalisco" (Tuxpan, October 1976, unpublished manuscript), pp. 27-28; and personal interviews, October 1975 and September 1977.

²⁸ Samuel Lichtensztejn, "Grupos industriales del pueblo. Comisión del Sur de Jalisco" (June 1975, unpublished manuscript), p. 1.

people in order to reduce, although not entirely to eliminate, dependence upon the federal Government.

Ten or more workshops, located in small towns (Copala, Tonila, San José de la Tinaja) and the city of Tuxpan were salvaged. A time limit of a month was set for the manufacture of shirts, trousers, shoes, sweaters and several kinds of home-made foods (cheese, sausages, brown sugar, cottage cheese and bread). These goods (plus a store of tools and footballs left over from previous efforts) were then offered for sale in the largest open market of the region, at Ciudad Guzmán. The results were very favourable; most of the goods were sold. At the same time, members of the corporation took note of the types of commodities most demanded by the regional population, on which they decided to concentrate: certain kinds of bread and food, sweaters, clothing and shoes.

This change in strategy permitted an expansion of the number of workshops and lines of production. Ten workshops made wool sweaters in the style of Chinconcuac, a famous weavers' village near Mexico City; and together with the chalk factory, employing 70 worker-members in Tuxpan, they provided the corporation with a monthly profit of one million pesos. This amount was allocated to the solidarity fund for re-investment.²⁹

At the same time, a second line of policy was put into practice. One of the organization's main objectives had always been to provide jobs for the unemployed near their own homes, in the villages, so that landless peasants could be assured an income without migrating. As a first step towards this, a weaving workshop was founded in July 1974 in La Media Luna, one of the more isolated mountain villages. Technical support was provided by the sweater workshop in Puerto de las Cuevas, a nearby town, which in turn received assistance from the corporation headquarters in Tuxpan.

Just over 12 months after the initial change in strategy there were 69 shops in southern Jalisco, with 972 worker-members and 35 administrative employees, and capital investment had reached 18 million pesos an average of slightly over 17,600 pesos per job.

These shops could be classified in two main groups. The concentrated workshops, located in Tuxpan and its environs, had an average of 32 workers each, with an investment of 50,000 pesos per worker, and were each under the direct supervision of a permanent chief. The unconcentrated workshops were scattered throughout the region outside the Tuxpan area, and had an average of 10 workers per shop, with investment per worker of 2,700 pesos and no permanent supervisors.³⁰

Table 2 indicates that 90 per cent of all investment was concentrated in only three lines of production (wood products, chalk and shoes), carried out in nine shops employing 310 member-workers. Dependence upon the Government as buyer had declined: only nine workshops (producing chalk, wooden toys and sweaters) worked fully or partially for the Government. Nevertheless, 31 per cent of capital investment was in these production lines and the Government continued to be the most important single source of income. Chalk, wooden toys and sweaters together contributed an estimated one million pesos per month to the solidarity fund.³¹

²⁹ Julio Pomar, "Una nueva revolución", *El Día* (Mexico City), January 1976, p. 11. (Suplemento 63 de la sección testimonios y documentos.)

³⁰ Lichtensztein, *op. cit.*, p. 3; and for the national figure, Plan Lerma Asistencia Técnica, *Diagnóstico sobre las Condiciones Económicas y Sociales de la Región Lerma, 1960-1970* (Guadalajara, NAFINSA-CNU, May 1972), p. 11.

³¹ Pomar, *op. cit.*

TABLE 2. PEOPLE'S COLLECTIVE INDUSTRIES: DISTRIBUTION BY TYPES OF PRODUCTIVE ACTIVITY, JUNE 1975

Type of activity	Shops		Workers		Investment	
	(Number)	(%)	(Number)	(%)	(Thousand pesos)	(%)
Food processing	26	37.2	296	29.4	440	2.5
Textiles and sweaters	20	28.6	254	25.2	745	4.2
Wood products	3	4.3	185	18.4	8,826	49.6
Chalk	1	1.4	88	8.7	5,019	28.2
Construction materials	8	11.4	68	6.7	515	2.9
Shoes	5	7.1	37	3.7	2,185	12.3
Agriculture and cattle	4	5.7	26	2.6	42	0.2
Others	2	2.9	18	1.8	15	0.1
Administration	1	1.4	35	3.5	-	-
Total	70	100.0	1,007	100.0	17,787	100.0

Source: Samuel Lichtensztein, "Grupos industriales del pueblo. Comisión del Sur de Jalisco" (Tuxpan, October 1976, unpublished manuscript).

At this stage it was also decided to promote the participation of women. Forty per cent of the members already were female, 75 per cent of them concentrated in three major production lines: sewing, sweaters and food processing. A campaign was launched, however, to attract more women worker-members, who were thought to be more responsible, enthusiastic and respected by outsiders than young men.

Once the corporation decided on a programme of production for the regional subsistence market, a commercial infrastructure was required. It was not enough simply to take the products of the workshops to local and regional open markets for sale, because production soon far outstripped their capacity. To avoid dependence on local merchants, a network of small people's grocery stores was established, sometimes an extra room in the same building as a workshop, sometimes a place rented or borrowed temporarily from county authorities. When corporation production was not sufficiently broad-based to meet the basic demands in any store, additional items were purchased from CONASUPO, whose precise function was to run low-cost grocery stores in low and middle income areas. Between October 1974 and May 1975, 28 such stores were set up in southern Jalisco. The corporation continued to sell in the three most important open markets of the region as well. Net profit from all retail outlets, divided almost equally between the two types, was estimated at 828,000 pesos during this period, and sales were on the increase. By the end of this stage the capital-output ratio of the entire operation was 3:0; and the corporation was providing an average daily income to its members which probably fluctuated around 50 pesos, or over 40 per cent above the minimum wage for the region.

The stage of successful expansion

By late 1975, therefore, the corporation could count on strong support for further expansion. At the local level, the provision of jobs and higher incomes for landless peasants (and their daughters, who for the first time in their lives were

allowed to participate in the decision-making process) ensured loyalty to the movement. And at the national level, support flowed directly from the President through a number of regional and local development programmes carried out by various ministries. Regional groups and political organizations, such as the sugar-cane producers' union, manifested their enthusiasm for the collective effort, while the municipal presidents of 42 of the counties of the region publicly pledged their support.

The corporation at this time set out its ideology in a declaration of principles. The main objective, it was stated, was to strengthen Mexican sovereignty through a contribution to the economic independence of the Republic in the face of intervention from transnational corporations. Strong support for women's liberation through improvement of their economic position was also expressed. Above all, the exploitation of man by man was repudiated. Economic liberation was to be achieved through industrial collectivism and workers' solidarity. The means of production must therefore be collectively owned and private profits replaced by a solidarity fund which would ensure the expansion of collective enterprise and the incorporation of increasing numbers of members from the lowest income strata.

These ideals were discussed at long meetings. The importance of peasant culture was also stressed, most particularly through a combination of artistic endeavours. Allegorical songs, marches and hymns were composed by the corporation's director, whose charismatic personality continued to contribute a great deal to the social cohesion of the group. Nationalism, love of work and social solidarity were dominant themes in the songs, as in the works presented by a newly organized theatre group (*el Teatro Campesino*). This process of cultural awakening was furthered through growing personal contact with visitors from all over the world. The exchange of experiences with movements in other developing countries as well as with other communities and classes in Mexico served to widen member-workers' horizons and to make them appreciate the importance of their own corporation.

At the end of 1975, the collective organization had 125 workshops, with 1,500 worker-members, producing 34 different kinds of goods. To the production lines already in existence had been added straw hats, leather jackets, belts, sandals and soap. Food processing had been diversified to include the canning of natural fruit juices; and children's sizes had been introduced within shops manufacturing clothing. By June 1976, the number of workshops was almost 200, scattered throughout 32 counties, and membership had increased to 1,700 workers, 88 per cent of whom were women (more than double the percentage of the year before). Most of these member-workers were very young, ranging from 14 to 22 years of age; without the corporation, they would have represented a significant part of the unemployed of the region.³² They were now in smaller workshops than before, because expansion at this time took place particularly in the unconcentrated area. In June 1975, the average number of worker-members per shop had been 14, but a year later it was only nine. By mid-1976 also, there were 58 people's grocery stores, with estimated average sales of 6,000 pesos per month per store (almost three times their income at the beginning).

Income per worker-member was relatively high by local standards, although it was often irregular because of the time-lag between manufacture and sale of some of the goods produced. Earnings varied according to type of product. In the case of

³²In 1976, 1,700 persons represented 32 per cent of the total unemployed population of the region.

woollen sweaters, for example, one worker interviewed reported earning 110 pesos daily (for the production of 10 sweaters); with her consent, the corporation discounted 40 pesos for the solidarity fund, leaving 70 pesos as her net income, which was still considerably above the minimum wage for the region. Income in the sewing shops varied according to productivity: in some shops the average was 40 pesos per person per day, while in others it was 80. In San José de la Tinaja, 12 girls manufacturing cushions for a furniture factory received between 50 and 83 pesos per day. And in a straw-hat manufacturing workshop in Villa Lázaro Cárdenas, the estimated average daily income per member was 114 pesos. The highest returns were in the chalk factory where workers had a daily income in 1975 of 250 pesos (50 pesos of which were discounted for the solidarity fund) and, in 1976, 350 pesos (43 per cent of which was discounted). The official minimum wage for the region at the time was 33.50 pesos per day, although in the countryside wages were a little lower.

Structure and internal organization of the People's Collective Industries

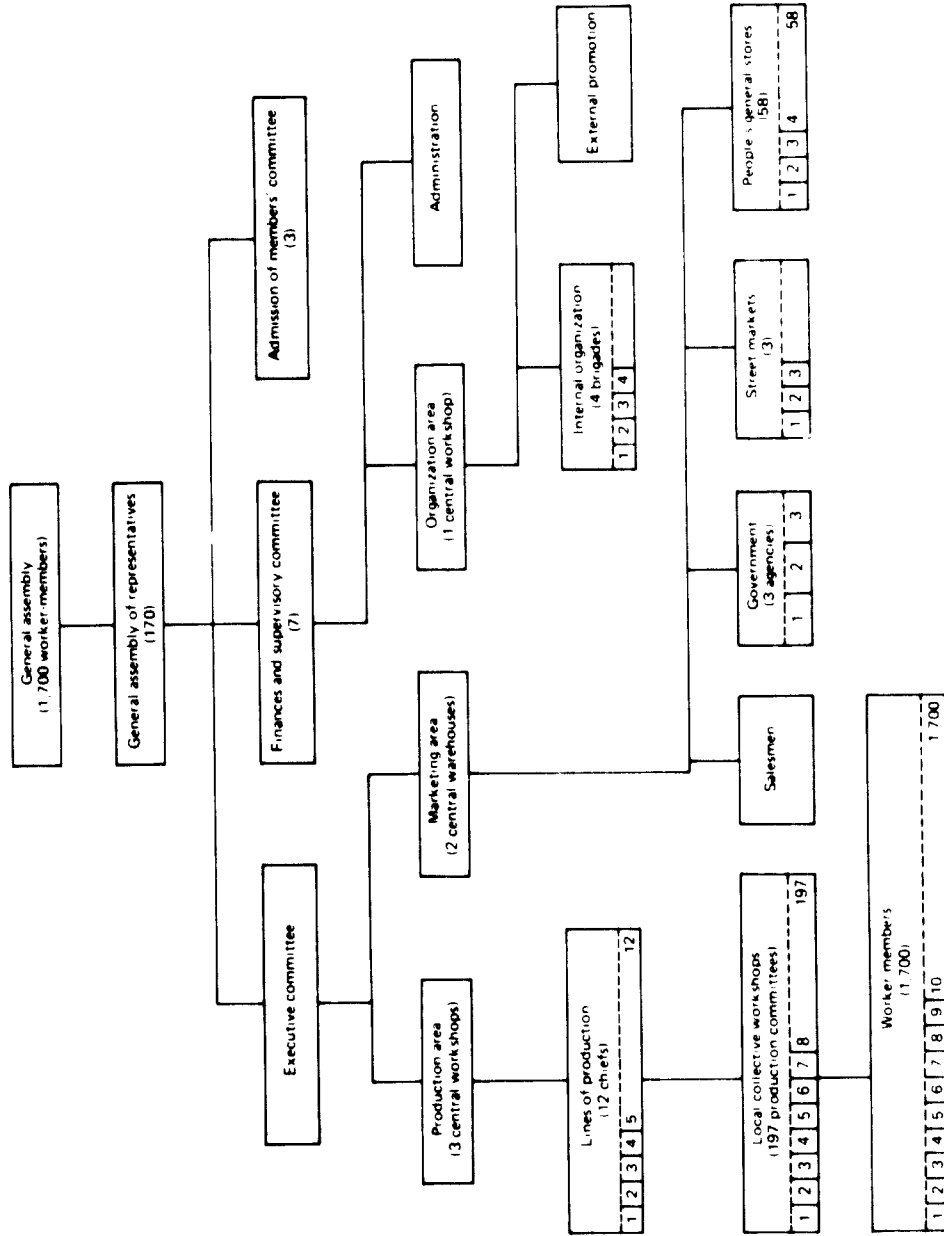
Because it was expanding and diversifying its activities, the corporation also had to find a way of strengthening its internal organization, largely through a process of trial and error in response to continuously changing internal and external conditions. The main aim, however, was to maximize the democratic participation of all members and to minimize the importance and cost of the administrative staff.

At the top of the corporate structure was a general assembly of the entire membership (1,700 people in 1976), with the right to discuss all activities, economic as well as organizational and ideological (see diagram). The general assembly in turn elected a general assembly of representatives, made up of one representative for every 10 worker-members.³³ It also elected three central committees: the executive committee, particularly concerned with production and marketing decisions; the finance and supervisory (or vigilance) committee to control the solidarity fund and therefore investment policy; and the admission of members committee, which submitted its recommendations to the general assembly for final decision. The admission of members committee might propose that a new group of aspiring worker-members be accepted within the corporation; the executive committee would then determine which kind of workshop should be established for them, to which line of production it would be assigned, and its optimal size. Finally, the recommendations of the executive committee would be submitted for approval to the finance and supervisory committee, which would allocate the necessary funds and supervise ensuing expenditures. Members of these committees were elected for one or two years, depending on the will of the general assembly. They could be re-elected, but a basic premise of the organization was that as many members as possible should acquire the kind of experience required to handle the business of the corporation, so that dependence on a single person or small group was minimized. In fact, in 1976, of 70 officers of one kind or another directing the affairs of the organization, only 20 were not of peasant origin.

The executive committee, headed by the director of the corporation and former director of the Comisión del Sur, was the nerve centre of economic activity.

³³This general assembly of representatives is a recent addition to the structure of the corporation, made necessary by passage of the Law of Social Solidarity Societies in May 1976.

INTERNAL STRUCTURE OF PEOPLE'S COLLECTIVE INDUSTRIES, 1976



co-ordinating both industrial production and commercialization. Below the executive committee was a director of industrial production, who worked out production plans in co-ordination with the 12 chiefs of production lines. Each of these chiefs was in turn in charge of a certain number of workshops, directed at the local level by a production committee democratically elected by members of the workshop.

The workshops themselves were arranged in order of increasing complexity, so that the smallest (called "penetration workshops") could count on support from those installed in nearby towns with a certain level of economic infrastructure ("support workshops"), and the latter were provided with additional services by the "central workshops" located in Tuxpan. There were three central workshops within the industrial production sector: one to maintain the equipment and machinery of the corporation; one to cut the cloth before delivery to smaller sewing shops; and one dedicated to quality control and the packing of finished clothing.

A director of commercialization (under the executive committee) co-ordinated four lines of marketing: the Government, with three main sources of funds (the Ministry of Education, the Federal Electricity Commission, and more recently the Mexican Social Security Institute); the people's grocery stores, located in the small towns and villages of the region; the open street markets, which by 1976 had been reduced to the three most important ones (Ciudad Guzmán, Sayula and Tuxpan); and the corporation's salesmen assigned to place expensive products in the largest cities of the country, as well as on the Mexican side of the border with the United States. Two central stores purchased raw materials needed by the workshops, and collected the finished products for eventual sale.

Another very important element in the overall institutional structure of the corporation was the "organization workshop". Brigades within this workshop were involved in activities designed both to strengthen the internal cohesion of the organization and to promote its programme outside southern Jalisco. For example, an ideological brigade, recently renamed the education commission and consisting of outstanding worker-members, had the duty of regularly visiting all local workshops and people's grocery stores in order to detect any problems which might reduce productivity or diminish the members' enthusiasm for their work. It encouraged open discussion of the problems of each workshop, and of the broader socio-economic problems of the region and the country. It also emphasized the importance of understanding the ideology and the legal principles on which the corporation was based. This commission was particularly significant because productivity in each workshop was a matter of personal, individual responsibility; there were no bosses.

There were two other teams under the education commission: the communication and information brigade and the protection of nature brigade. The former promoted both formal and informal education among member-workers, providing links with the relevant public schools and engaging in adult education campaigns. In addition, the children in the rural schools were organized into production clubs. One such club, in La Libertad, raised 16,000 pesos through the sale of six bulls; half this money went to the 23 young members and their families, and the other half was used to buy sweaters for children of low-income families in neighbouring villages. Most recently, the brigade has expanded its activities to include the provision of medical services to worker-members, first of all through an agreement with the Mexican Social Security Institute and later through the establishment of a separate medical service.

The protection of nature brigade began in March 1976 to organize conservation programmes of soil recovery, reforestation, the planting of fruit trees etc., in which the worker-members' participation was seen as contributing to the organization's solidarity.

The organization workshop has been very active in presenting the work of the corporation to interested outside institutions or individuals. Small groups of young people are often sent to be trained in the corporation's workshops, and technical assistance is given in setting up similar collective enterprises. The squatters' colony "*Tierra y Libertad*" ("Land and Liberty"), in the northern city of Monterrey, for example, sent a group of 10 boys and 10 girls to be trained in shoe manufacturing in October 1976. They stayed for a month at the corporation headquarters in Tuxpan, and less than a year later they had established their own collective group in Monterrey. A similar case was a sewing workshop established by immigrant peasant women in the city of Mexicali, on the Mexican border with California.

A changing legal framework: the Law of Social Solidarity Societies

As already noted, the founders and chief officers of Productive Activities Incorporated were searching from its earliest stages for the kind of legal framework which would permit them to establish an organization that would be employment and not profit oriented. Their main objective was to provide well-paid jobs which would allow low-income groups to attain higher standards of living, while sharing their benefits with the rest of the population within their communities. From this point of view, therefore, one of the most significant achievements of the collective industries was the passage through Congress of the Law of Social Solidarity Societies in May 1976. The southern Jalisco corporation was taken as a model for the elaboration of this Law, which was to provide the legal basis for the extension of small collective workshops throughout the rest of the country. Ten days after the Law was promulgated, Productive Activities Incorporated changed its name to the People's Collective Industries Corporation, and became the first group to be officially registered as a Social Solidarity Society.

The law allows low-income rural people, whether landless labourers, *ejidatarios*, small private landowners, or members of other occupational groupings, to form Social Solidarity Societies to provide new sources of employment as well as to produce and market low-cost goods required by the local population. These organizations, each of which must have a minimum membership of 15, may not hire any non-member labour, with the exception of the middle or high-level technicians which the establishment of their workshops might require. Their structure, including the three central committees described above (executive, admission of members and finances and supervisory), is very similar to that of Productive Activities Incorporated. The law foresaw the possibility at some future date of grouping the societies into regional associations, as well as into a national confederation.

Implications of the southern Jalisco experiment for rural industrial development programmes in other areas

Even before the passage of the Law of Social Solidarity Societies, the southern Jalisco experience had begun to serve as a model for federal development efforts in other depressed rural areas. By September 1974, a General Subdivision of Productive

Activities, headed by one of President Echeverría's sons (and a nephew of the general director of Productive Activities Incorporated), had been integrated into the PIDER in order to apply the lessons learned in southern Jalisco to the promotion of rural industrial co-operatives throughout the country. Between April and October 1975, small co-operative workshops were set up in 19 states of the Republic, generally within regions served by PIDER. By the end of 1975, it was expected that over 84 million pesos would have been invested in this programme, with 375 production units established and integrated into 15 central administrative units, some 200 people's grocery stores, and an estimated 2,300 permanent jobs having been created to benefit 60,000 rural families.

Facing the crisis: toward a strategy of self-reliance

Towards the end of 1976, however, changing conditions at the national level began to foreshadow a crisis for the People's Collective Industries of southern Jalisco. The worsening national economic situation was exacerbated by political difficulties which quickly produced a state of uncertainty about the continued stability of the existing system of government. This was more serious than at any time since the late 1930s. As in that earlier period of unrest, the crisis of 1976 grew out of continuing antagonism between conservative groups of big industrialists and landlords, supported by much of the middle class, on the one hand, and adherents of a populist programme of rural development on the other. Between 1970 and 1976, the Government had no choice but to support a policy of development with an emphasis on rural welfare. Its efforts to reduce the sharp differences in income and living standards between the rural poor and the wealthiest sectors of Mexican society, combined with a nationalistic foreign policy and assistance to political refugees from a number of South American countries, earned it the enmity of a significant part of the private sector of the country. Such populist policies were blamed for all the national economic ills, and as a consequence, capital began to flee the country in large amounts. The result was the devaluation of the peso in September 1976, followed almost immediately by a second devaluation and the decision to let the currency float indefinitely.

With the installation of a new Government in December 1976, the People's Collective Industries, which epitomized the development strategy of the 1970-1976 period, became immediate targets for harassment. By November 1976, however, the system of collective workshops of southern Jalisco was already facing a crisis. The first blow had been to their solidarity fund, as a result of the devaluation and consequent price increases. Inflation had been general from 1973 onward, but prices rocketed towards the end of 1976. Since the Collective Industries continued to sell their products at the same low prices to groups of people whose incomes were not rising and who could not afford to pay more, contributions to the solidarity fund (equivalent to profits in private enterprise) fell quickly. The immediate consequence was a stop to the programme of expansion under way at the beginning of the year. Then, with the change of Government, contracts with government agencies began to be cut or cancelled altogether. The Ministry of Education, for example, rescinded its demand for chalk, drastically reducing the operations of the chalk factory and making many of its works redundant. Workshops supplying school sweaters to the same Ministry, among other clients, were closed because they could not continue to

finance the purchase of raw materials. Output in the furniture and wooden toy factories was halved for the same reasons. By June 1977, the number of workshops had declined to 123 (nine of which were temporarily suspended or remained unopened) and the number of worker-members fell to slightly over 1,100 (including 860 in the workshops, 96 temporarily suspended, 76 in the people's grocery stores, and 65 in administration, maintenance and training). Only 45 people's grocery stores remained in operation.

The Comisión del Sur was abolished in 1977, and its supporting programmes were discontinued. The rural population of the region suffered, therefore, not only from the declining employment opportunities, as provided by the People's Collective Industries, but also from the withdrawal of a number of social services formerly provided with federal money channelled through the Comisión del Sur.

At the same time, political opposition to the collective experiment began to manifest itself in a number of ways. One of the first acts of the new municipal government of Tuxpan was to cut off the water supply of the People's Collective Industries, giving as a reason that the latter used so much water that the rest of the town suffered. The collective organization responded by installing its own water system (at an estimated cost of one million pesos); the town, on the other hand, is still chronically short of water, because the new municipal government has failed to find a technician to run the pumping and distribution facilities. In the meantime, the municipal administration found a second way of showing its disapproval: garbage from the town was dumped in the vacant lots adjoining the headquarters of People's Collective Industries, giving rise to an invasion of flies.

Much more serious cases of harassment have recently emerged in the county of Pihuamo, where peasants supporting the Collective Industries have been violently repressed by the police.³⁴ In one case at least, these clashes have also been associated with political struggles within the regional sugar-cane producers' organization.

In sum, then, after a period of solid high-level support for its ideals and its programmes, the People's Collective Industries now face a completely different political and economic environment. This has not come as a surprise to the principal actors in the experiment: they were aware from the beginning that they might have only a few years in which to build an organization which could resist eventual disfavour and opposition. How far they have been able to succeed in that endeavour remains to be seen in the months and years ahead.

Summary and conclusions

The experiment with small collective industries in southern Jalisco by no means represents a typical case of rural regional development, but it is an example of socio-economic change promoted from above within a relatively favourable natural and social environment. The results of the experiment can be summarized as follows.

Technological achievements and bottle-necks

The establishment of small industries was intended to be based on two types of technology. The first was a very simple one relying on raw materials that were available locally as well as on a certain degree of traditional technical knowledge and

³⁴ Personal interviews by the author, September 1977; *Excelsior* (Mexico City), 13 September 1977, p. 27-A.

dexterity. Examples of this were some workshops making wool sweaters which utilized nothing more than small wooden squares into which nails had been hammered in a certain pattern, and the chalk factory where the tools and techniques were also quite simple. Food processing also tended to be based on traditional ways of preserving and baking; only canned fruit juices were processed by more modern methods. On the other hand, modern technology was consistently employed in weaving machines, sewing machines and other machinery for making wood products, soap and shoes. All of these required electricity.

The worker-members of the People's Collective Industries learned after a few weeks' training to handle even the most complicated machinery and they were often able to move from one machine to another as required. At the same time, however, they kept a sense of proportion about the relative merits of modern and traditional technology; a combination of both strengthened their cultural identity and prevented them from regarding local ways of doing things as obsolete. Compared with such gains, both in new skills and in cultural perspective on the process of change, the few bottle-necks have been of secondary importance. Interruptions in the electricity supply were perhaps the most important problem faced by the more modern workshops, and this was not one that the collective organization itself could solve.

Economic achievements and problems

An often-stated goal of the People's Collective Industries has been the increasing retention of regional income within the region itself, thus reducing its economic dependence on outside centres of industrial production and encouraging more favourable terms of trade between the region and the outside world. It is by no means clear how far this goal has been reached; the question, central to any evaluation of the experiment, should be studied in more detail. It would seem that considerable strides were made towards providing a local alternative to imported manufactured goods and therefore that more of the income earned by local families probably did remain within the regional economic system.

By making an effort to understand the needs of local people, and then producing basic goods designed to meet those needs, the People's Collective Industries were able to expand rapidly. Nevertheless, with certain products like clothing, the time lag between market research and the final decision to change the style of particular articles was sometimes too long to permit the workshops to compete advantageously with outside manufacturers. This did not represent a serious bottle-neck, but it was a cause for concern.

Combining collective production with a system of regional distribution under the control of the producers themselves proved a most effective way of coping with competition from outside industrial products. The experience of the People's Collective Industries suggests, however, that co-ordinating these two functions within a single organization is a difficult task. The distribution function becomes particularly complex once the organization expands into the national market where competition is stiffer and the infrastructure required to sustain a marketing effort by a collective organization is largely lacking.

Whatever the problems faced in the course of structuring the People's Collective Industries, there can be no doubt that the experiment provided employment and

income for a significant part of the young, unemployed, landless population of southern Jalisco, and in that basic sense it was a noteworthy contribution to regional rural development.

Socio-cultural achievements and problems

The socio-cultural effects of the establishment of the People's Collective Industries in southern Jalisco were in many respects similar to those of agrarian reform. Member-workers were given a personal sense of belonging to a community, and acquired rights and responsibilities. In essence, their dignity as human beings was reaffirmed. In addition, this process of social liberation was reinforced by stressing those cultural values and traditions that formed the basis of an ethnic identity. It is therefore not surprising that moral, as well as material, incentives were very effective in maintaining work discipline and in stimulating participation in a number of programmes outside working hours. Worker-members went for relatively long periods of time without being paid, until their products were sold and the earnings distributed.

Such a high degree of social solidarity and ethnic identity may, however, give rise to future problems, to the extent that those young people who cannot be immediately absorbed into the experiment will begin to feel excluded. Such clashes have developed in a few places. Nevertheless, the overall impact of the collective effort in the rural communities of southern Jalisco has clearly been positive.

Requirements for rural collective industrialization

The feasibility of rural collective industrialization within a wider socio-economic setting in which a market economy is predominant, but in which the state nevertheless plays a key supporting role, would seem to depend very much on the presence of the following elements at the local level:

Sufficient natural resources

A certain degree of social mobilization leading to the diffusion of feelings of solidarity

Some widespread, if elementary, technical knowledge

Honest, committed and charismatic leadership

The systematic orientation of production towards social, rather than individual, objectives

The promotion of both moral and material incentives

In addition, it would seem important that participants in rural industrial ventures should be aware of the limitations and restrictions likely to be imposed on them by the national and regional environments in which they must operate. Regionally integrated projects would thus have a much better chance of success than scattered development schemes.

Special attention must also be paid, when considering the way in which collective industries are to be financed, to the real problems likely to arise around the issue of whether to invest in projects of a primarily social, collective nature or to

emphasize the distribution of the profits among the individual members of the enterprise. Social objectives are likely to prevail at the beginning of the project when everyone's participation is relatively equal. But when differences in performance arise it is likely that internal conflict will follow. The group involved in any collective enterprise must be aware of this problem and devise a strategy to deal with it.

Finally, it might be added that in third world countries like Mexico, industrialization must not be seen as an end in itself, but only as one means of promoting increased well-being. Local cultures offer a wealth of opportunities for a productive and satisfying life. Modern technology should be introduced only at the points which promise the lowest possible social cost with the highest social benefit.

II. Role of rural industrialization in integrated rural development in Papua New Guinea— problems and strategies

by

*E. M. Wijenaike**

Papua New Guinea emerged as an independent nation in September 1975. New Guinea is the next to largest island in the world, after Greenland, and the area covered by the new nation is about 180,000 square miles, roughly half of the island, the remainder being under Indonesian administration. Its problems in regard to the development of small-scale industry are unique. New Guinea has been cut off for centuries from external influences by an accident of geography. The situation, topography, character, climate of Papua New Guinea, to which the migrant ancestors of the present inhabitants came, offered them a refuge that was well secure from contacts with the outside world.

The topography has been one of the major constraints to rapid industrial development. Nearly one third of the country is composed of steep mountain peaks rising up to 10,000 feet. A similar area is covered with swamps where nothing can be cultivated or grown systematically. This has prevented the development of a good system of road or rail communications in a country which is quite large, with the result that most of the main urban centres are almost totally dependent on air or sea transport. The population of only 2,700,000 presents a small consumer market, which not only has a very low *per capita* income, but is badly fragmented into tiny and in some cases inaccessible parts.

Fortunately, the vast amount of natural resources—mineral, forest and marine—along with plantation crops, has helped the economy to remain stable in recent years despite export price fluctuations. Sound economic management by the Government with the objective of maintaining a hard currency has kept inflation at very low levels. The country is at present greatly dependent on Australian aid, however.

The manufacturing sector itself is extremely small and very underdeveloped. Secondary industry contributes about 7 per cent of the gross domestic product and employs 10 per cent of the total work-force. The value of total manufactured output in 1974-1975 amounted to roughly \$250 million at current prices and employment in manufacturing totalled 16,000. Between 1972 and 1975 employment in the manufacturing sector showed an overall increase of only 5 per cent with an absolute

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decline in two of these years, whereas output increased in real terms by 16 per cent in 1973-1974 and 27 per cent in 1974-1975. Industrial metals and machinery account for the largest share in total industrial employment, with slightly more than one third of the total manufacturing work-force. Two other ISIC³⁵ industry groups, "food, drink and tobacco" and "other industries", employ the remainder.

Along with the narrowness of the industrial base, what is most important is that nearly 98 per cent of manufacturing industry is owned and managed by expatriates. An informal sector is totally absent partly because of government restrictions, such as excessive protection of licensed firms, over-regulation of transport, commerce and industry, and too much emphasis on the orderly development of towns. If the artefact industry, which employs large numbers (perhaps around 100,000) mainly on a part-time basis, is ignored, rural industry as such is also virtually non-existent.

The manufacturing sector is dominated by capital-intensive and labour-saving technologies. This has influenced those who have been trained technically. The tendency is always to throw away and replace rather than to repair, unlike many other developing countries where every effort is made to repair in order to save foreign exchange and to increase employment.

Manufacturing is heavily concentrated in three provinces out of a total of 19—Morobe, Central and East New Britain—and located mainly in the urban centres of Port Moresby, Lae and Rabaul. Over 90 per cent of the population live in rural areas, however, and are mainly involved in subsistence farming, although with the widening of the cash economy a large number are now involved in cash cropping. The case for dispersal of industrial activity is therefore extremely strong. For instance, the Highlands region, which is perhaps the least developed and has the lowest share of industrial activity, has the largest population.

With a growing unemployment problem, particularly among the educated youth, the inability of the manufacturing sector to provide widening avenues of employment is a matter of great concern. If present trends continue, it is estimated that by 1984 there will be 310,000 school leavers without wage-earning employment. This could have serious political implications. In addition, there is a vast disparity in income levels between urban and rural workers. (Minimum wages for rural workers grew by 5 per cent in real terms from 1971 to 1976. In contrast the urban minimum wage rose by 116 per cent in the same period.) As a result the urban labourer earns three times as much as the rural plantation worker, or two and a half times more than the rural labourer. This wide disparity attracts the more skilled artisans to urban areas and has accelerated urban drift with a cumulative effect on unemployment, increases in crime, social tension, pollution, and squatter settlements in urban areas. As yet, however, there are no financial incentives to locate industry in rural areas for fear of creating a favoured class.

The urgent need to divert a greater proportion of resources to rural areas is recognized by the Government in its national development strategy. It proposes to reduce inequalities by creating income-earning opportunities in rural areas. It is also concerned with maintaining subsistence production and improving the range of subsistence goods available. Urban development will be seen as complementing rural development and will be the foundation for future industrial-based expansion.

The administrative system is one of the most centralized among developing countries. It is heavily dependent on expatriates, many of whom have little or no

³⁵*International Standard Industrial Classification of all Economic Activities* (United Nations publication, Sales No. 68.XVII.8).

experience of the problems of developing countries. As in many developing countries, the provision of rural development services has been badly co-ordinated, resulting in poor delivery and consequent loss of confidence in government departments. Emphasis is therefore now being placed on planning at the grass-roots level.

A major step towards involving rural people is the establishment of provincial governments, a number of which have already been set up. Previously, there was a lack of communication between rural areas and the decision makers with a consequent insensitivity to rural needs. It is hoped that rural industrialization within the framework of integrated rural development will create income-earning opportunities, particularly for the self-employed.

Before the arrival of the Europeans, Papua New Guinea had not used metals. The technologies used were bone, stone and wood. Even today there is not one blacksmith, nor can a single shoemaker be found. This is perhaps indicative of the dominating influence of trusteeship by an industrially advanced country. The wheel was unknown until 90 years ago, and even today animals are not used for agriculture or for haulage. The village economy is a horticultural one, based on shifting cultivation of roots and yams, and it is quite different from the rice culture of many Asian countries. Apart from the lack of roads, power, water and transport, artisan skills are generally not available in most villages. This situation might improve in the future with the growing number of young people matriculating from technical colleges, providing they return to the village. At present the rural infrastructure cannot support rapid rural industrialization, except perhaps some cottage industry at the very most.

Like many other developing countries, Papua New Guinea has a dual economy; but here again it is a dual economy with a difference. One writer has observed that the economy is a paradox. It is primitive, less developed and modern—all at the same time. While the primitive subsistence sector of the economy has the features of the horticultural society which existed about 10,000 years ago, its modern sector, particularly trade, banking, urban housing, construction, and communication, has the characteristics of a modern industrial state such as Australia.

A major problem common to all developing countries is that of finding entrepreneurs to undertake small-scale industry projects. In Papua New Guinea the number of indigenous entrepreneurs engaged in industry is but a handful at the most, and in fields other than industry, e.g. commerce and transport, it is only of very recent origin. Even in the urban areas where there are large numbers of educated people, it has been virtually impossible to find entrepreneurs to undertake small industrial projects and cope with the complexities of purchasing raw materials, organizing production, marketing etc. With the present programme of localization of business, those nationals interested in entering business prefer to move into less complex and less sophisticated areas such as retail trading, transport, plantations, rather than industry, since they have never been exposed to an industrial culture.

A number of other factors militate against rapid development of rural industries: for instance, certain socio-cultural factors such as what is popularly known as the "wantok" system. Under this system the right to livelihood is in effect guaranteed as a normal right of membership in a clan or tribal group, in times of peace and war alike. Fear of hunger has never therefore acted as an incentive to economic activities. Not even the quest for profit or self-interest can be considered an adequate explanation for such activity. The expanded family or tribe is the basic unit of the

subsistence sector. In pidgin English *wantok* means a person who speaks the same language; it is really a group of people speaking the same language and sharing similar interests and goals based on the principle of reciprocity and common ancestry. This system continues to assert considerable influence, and despite the pressures of modern society and the rapid growth of population, it would appear to have become even stronger. When people leave their traditional homes and seek employment in other areas, it provides an inbuilt system of social security.

The system has been criticized as detrimental to the development of entrepreneurial initiative, since profits may have to be shared. On the other hand, it is contended that it could be a powerful force for promoting rural industrialization in that clan leaders in the village have a pool of resources at their disposal. Capital, labour and possibly technical know-how which may not be normally available to an individual could be available through the system. Problems of minimum wages, working hours etc. would not arise and group efforts could be as concerted as those in the paternalistic system of Japan.³⁶ There is little evidence, however, in the industrial field to support this so far, although some exists in the commercial sector. Two sponsored potential entrepreneurs in industry have failed because of the *wantok* system.

Other difficulties in promoting small-scale and rural industries remain. A policy directive for preferential purchases by government purchasing organizations of locally manufactured goods is not carried out as it should be. Such goods tend to be rejected in favour of better quality imported goods. Again, it is cheaper in some parts of the country to import goods from Australia than to manufacture locally, even though local raw materials are used, because of the prohibitive internal costs of freight.

Government policy has yet to be clearly defined as to the extent of protection to be offered to small-scale industry. The national development strategy states that protection will be given only to locally manufactured goods that are competitive with imported goods. This is somewhat vague and it is doubtful whether protection could be granted without more precise guidelines. The tendency has been to resist any requests for protection on the grounds that this would raise living costs for the masses.

Another problem is the virtual monopoly of distribution outlets by a few expatriate firms. Even though the goods manufactured by the local small industrialists may be competitive in price and quality, the expatriate distributors prefer to continue their association with their foreign suppliers and the country's fragmented markets make operation outside the established distribution system quite unviable.

As a matter of policy, the private sector is expected to promote industrial development, and only if the private sector is unable to do so effectively will the Government step in. With so many inbuilt constraints it is necessary to ask certain questions about the promotion of small-scale industry. Should the whole programme be abandoned until a later date, when perhaps the preconditions for such development are satisfied, and the resources earmarked be utilized in another sector where the problems are not so complex? Or should endeavours persist to find a solution? It is one thing to promise people from the platform and through government handouts that a new era for small industries is about to dawn, and it is

³⁶ See Dr. Mannan, *The wantok system: Its implication for development in PNG*. Institute of PNG Studies, Discussion Paper No. 16.

another to be actually able to make that era a reality by translating policies into programmes of action.

Those responsible for small industry promotion have the dual task not only of convincing the private entrepreneur of the virtues of investing in industry, but also of convincing those in authority that stated government policies are workable so that maximum financial support could be obtained. It takes time for a bureaucracy to reorient its attitudes towards programmes and policies designed to achieve goals different from those of a previous era, such as that prior to independence.

Although the Division of Small-Scale Industry of the Department of Business Development was created about four years ago, there is still little specialized knowledge and experience of small-scale industry promotion. Until very recently national officers were not sent abroad for specialized training in this field. To their credit, however, they responded magnificently to the task of convincing the country of the benefits of small industry. It is therefore most unfortunate that due to budgetary constraints the UNIDO Programme of Small-Scale Industry Development in Papua New Guinea has had to be implemented in a rather limited way. Also very little has so far materialized from the Technical Co-operation among Developing Countries programme, which could have been of immense help.

There is still considerable scope for rural and small-scale industries, particularly those utilizing local raw materials and simple technologies. Many might well have been developed earlier had not Papua New Guinea been so dependent on imports from Australia. However, the conventional strategy of offering a package of incentives to the private entrepreneur, namely the provision of a wide range of industrial advisory services, training schemes for entrepreneurs, credit on reasonable terms, factory accommodation with supporting services and utilities, and financial incentives etc., will not produce tangible results for the reasons already mentioned. Furthermore, additional funds are not likely to be forthcoming from the Government for the staff and other resources necessary to provide such a package of incentives. The Office of Business Development has therefore decided to adopt the bold strategy of directly implementing a number of small-scale industry projects to demonstrate tangible results in the field rather than to extol the virtues of small-scale industry and offer advice to non-existent entrepreneurs. The alternative would have been to advise the Government that in the present socio-economic context, the time was not ripe to mount such a programme of small-scale industry development.

A number of projects are being implemented and many of them are now in the initial stages of production. Nearly all are resource-based with wide rural application and both backward and forward linkages, e.g. leather tanning, salt, sericulture, timber products, rubber moulded goods, coir products, shells, boat building, saltfish, weaving, handicraft, baking and confectionery. Some of these industries have export potential. Most importantly, since this initiative was taken, substantial additional resources have now become available for investment.

Although an entrepreneurial development programme has not yet been mounted, a strategy has been adopted of identifying Papua New Guineans who have entrepreneurial potential for training so that they are able to start their own industries. Preference has been given to those who will be setting up enterprises in semi-urban or rural areas. A number have already been sent abroad and will set up their own enterprises soon.

The establishment of a parastatal organization to implement small industry projects is being considered. It is likely that such a proposal would have the support

of the Development Bank and the Investment Corporation. The Development Bank has already undertaken one or two small-scale industry projects in joint ventures with Papua New Guineans taking shares in the equity capital of the undertakings rather than merely granting loans. However, in the present context the Development Bank should, because of its greater flexibility, play a much more dynamic role in establishing small enterprises to be hived off to private entrepreneurs at a later date. When the technical feasibility and economic viability of a particular project have been established, a candidate entrepreneur could be selected, initially as a trainee manager of the project, and if he proved himself the project would be transferred to him. The Development Bank or a commercial bank could provide finance. The work of promotion of small-scale industry should remain with the Office of Business Development.

It is intended to set up common facility centres in urban and semi-urban areas from which work would be subcontracted to individuals or groups and vocational schools in rural areas. It is hoped that these centres will be growth centres of the future. It is also intended to promote the tertiary sector in village areas. Young people with technical training who return to the village could earn a living as owners of the small workshops necessary to service the growing needs of agriculture, industry and transport in rural areas as greater government resources are directed to these areas.

There is no question that despite the many obstacles in the way of rapid rural industrialization in Papua New Guinea, growth centres have an important and vital role to play in integrated rural development schemes. Most of the projects presently being implemented involve the closest co-ordination with other government departments.

One of the central tenets of the philosophy of integrated rural development is participation by rural people in the identification, evaluation and implementation of projects. For some time it is doubtful if any real entrepreneurial initiative will emanate directly from rural people. It is true that in other developing countries a large and flourishing handicraft industry has been a breeding ground for indigenous entrepreneurs, but the same cannot be said of Papua New Guinea despite the large numbers presently involved in the artefact industry. With the devolution of powers to provincial government there will no doubt be greater opportunities for mass participation in the process of rural industrialization. Increasing educational opportunities for young people will widen their horizons, and it is also more likely that provincial and village development corporations will take over the function of implementing rural projects in the not too distant future.

Industrialization must inevitably lead to massive changes in the way of life in the village and some disruption of the existing socio-economic fabric. The people of Papua New Guinea are very sensitive to the need to preserve their own cultural and social values and what they call the Melanesian way of life. Already they are greatly disturbed that modernization is eroding these traditional values. Great care therefore will be necessary to ensure that the damage to existing social and cultural values shall be minimal. This is of course easier said than done. Equally, the rural man must learn to understand clearly the disciplines and the work ethic of industry without which rural industrialization cannot succeed.

III. Promotion of the manufactures of rural implements in the United Republic of Tanzania

by

*J. Müller**

Background data

An adequate supply of farm implements, craftsmen's tools and basic household utensils is an absolute prerequisite for rural development. Yet, by and large, it does not seem to be sufficiently provided for in most rural development programmes, at least not, as yet, in the United Republic of Tanzania.

The rural development strategy of the United Republic of Tanzania emphasizes the need to mobilize the productive capacity and to improve the living standards of the 14 million people (out of a total population of 15.3 million) estimated to live in the rural areas, almost all of whom are wholly engaged in subsistence agriculture. (About 85 per cent of the holdings are below two hectares.) A particular target set is self-sufficiency in food production, at least in cereals, by 1980. As regards maize, this would mean an increase of some 450,000 tons over the 1972 level of 880,000 tons; it can be accomplished either by expanding the total cultivated area by about 600,000 hectares (a 50 per cent increase) at the present yield levels, or by raising average yields from 7.5 to 11.5 quintals per hectare. In 1975 agricultural imports amounted to about \$90 million (93 per cent of which was spent for maize, rice and wheat) against agricultural exports of about \$200 million (78 per cent of which came from coffee, cotton, sisal and cashew nuts). Apart from improved seed development, fertilizer distribution, and extension and credit services, agricultural mechanization is an important component in the efforts to reach this target. At present the approximate proportion of village land cultivated by hand is 85 per cent, by animal 10 per cent and by tractor 5 per cent. Despite promotion of animal and tractor power, an official projection of demand from 1973 places the relative shares of the total at 81 per cent for hand tools, 11 per cent for animal implements and 8 per cent for tractor equipment in 1977, to 72, 18 and 10 per cent respectively by 1984, with the total annual demand for hand tools increasing by 2.3 per cent.

With regard to the integration of non-agricultural production in the rural development strategy, the Government's policy is less clear, largely because of the much debated (yet still unsolved) lack of an overall industrial development strategy. It may be observed that whereas large-scale, state-controlled/owned enterprises have grown over the past 10 years, the privately owned, and registered, medium- and small-scale enterprises have stagnated, and in some sectors have declined. In 1968

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enterprises with between 10 and 100 employees accounted for 44 per cent of gross industrial output and 37 per cent of employment; in 1971 these figures were 29 per cent and 23 per cent respectively. The number of enterprises with over 100 employees rose from a total of 86 to 120 in the same period. Although no precise data of industrial production have been compiled since 1972, the situation has not changed.

In 1973, however, a special party directive on small industries was issued. It stressed the need for a technological revolution in the rural areas based on popular control, using existing skills and materials and avoiding heavy capital expenditure. The Small Industries Development Organization (SIDO) was created to formulate and implement a decentralized, small-scale industrial development policy. With no explicit specifications in relation to an overall industrial development strategy, let alone to the rural development strategy, SIDO started out by regarding any small, rural, co-operatively organized enterprise as good, as long as it "mobilized the production capacity" in a particular area. Soon, however, both budgetary and administrative constraints called for difficult decisions about the types of industries to be promoted, where and how. The scope and nature of these decisions will be discussed in detail later in this chapter, on the basis of the manufacture of implements as a case in point.

A few more general aspects of the country's rural development are also relevant. In the early 1970s the Government decentralized parts of its decision processes and planning control. The intention was to achieve a high degree of sectoral co-ordination through planning and implementation at the regional level, with a regional development director in each of the 20 regions. Many parastatal service institutions also opened regional offices, among them the regional offices of SIDO, each headed by a small industries promotion officer assisted by one technician and one economist. The state-controlled wholesale distribution system was also decentralized by the creation of regional trading corporations (RTCs). Finally in 1974-1975 most of the relatively scattered rural population were moved into planned villages, called "ujamaa" or development villages. There are some 6,700 such villages at present.

Formal sector supply

Farm implements

Large-scale production

All large-scale manufactured farm implements were imported until 1970, when the Ubungo Farm Implement Manufacturing Company (UFI), located in Dar es Salaam, started operations. Built with the help of an interest-free loan from the People's Republic of China, its initial investment was 8.4 million Tanzanian shillings (TSh) (about \$1 million³⁷). The number of employees is at present about 350, and although the factory was set up with Chinese expertise, it is now entirely in local hands. The company became a member of the National Development Corporation (NDC) group of enterprises in 1968. The factory is equipped to produce a wide range of hand tools, animal implements and hand-operated processing equipment, such as

³⁷ The value of the Tanzanian shilling (TSh) has varied from 7.143 to the United States dollar in 1970 to 9.67 at the end of 1976.

jembes (hoes), axes and ox-ploughs, plus spares, ground-nut shellers and winnowers. In other words, the produce line is multi-purpose and versatile, with a potential for innovation and adaptation which will ultimately benefit not only the users, but also the workers' trade training through useful experience. If fully exploited the plant could thus become more than just a means of import substitution: it could make a contribution to the technological capacity of the country.

So far, however, it has had other things to cope with, such as initial marketing problems, since its products have to be sold through the State Trading Corporation (STC) together with other imported implements. These were basically solved when STC was restructured in 1973 into RTCs. By then UFI had the monopoly in the import, production and sale of farm implements. Other problems such as shortage of raw materials, lack of shipping space, lack of machine spare parts and occasional interruptions in water and electricity supplies are not unique to UFI, but occur quite often in the establishment of large-scale industries.

UFI has thus not been able to use its full capacity. Its annual capacity of 800,000 *jembes* was about 40 per cent utilized during the first five years. The utilization of its 8,000 ploughs/year capacity has been somewhat higher. A number of axes and ground-nut shellers have also been produced. But all in all, capacity utilization has been below 50 per cent. *Jembe* capacity is now being more than doubled, to 2.2 million/year, and increased capacity for ploughs, axes and *pangas* (machetes) is also being considered. This may be taken as an indication of an increasing emphasis on the part of NDC on the mass production of relatively simple products, i.e. on import substitution and even on the possibility of future exports.

A similar emphasis may be seen in the plans of NDC for a new factory of about the same size to be located in Mbeya (in the southern part of the country near the new Tanzania-Zambia railway). The Mysore Implements Factory of India will provide technical collaboration. Investment is about TSh15 million at 1975 prices. Nearly 300 jobs will be created when the plant reaches its installed capacity of 2,815 tons of hand tools (including 1,000,000 *jembes*), 730 tons of animal-drawn implements and 365 tons of tractor-drawn equipment (mainly disc ploughs and harrows). Trial production may start in 1979-1980.

Medium-scale production

All registered or formal sector production of farm implements other than the new Mbeya plant and UFI are treated in the present context as medium-scale industries. No hard data exists as yet about their type or volume of production. A systematic survey was being made only at the time of writing.

Visits in 1976-1977 to a number of general engineering workshops in Dar es Salaam and in eight regional centres showed that, although the machines and skills for farm and other production of rural implements existed, practically no such production was taking place, nor was it planned. The firms were willing to take limited orders, but for years no order had been made. No one saw this as a direct consequence of UFI control over the market; rather, the firms considered their present production of steel furniture, steel doors and windows, hospital equipment etc. as more profitable. They also carried out a substantial amount of odd repair jobs. One exception was a firm that had developed a simple maize grinding mill in various sizes. Capacity was said to be 30 to 50 mills/month; however, production had almost stopped because of difficulties in importing the diesel engines that go with the mills.

Although not based on a comprehensive sample, a typical, rough profile of a medium-scale firm would be as follows: it is privately owned by people of Asian origin. Fixed capital assets are TSh 50,000 to 100,000. Ten per cent of the machinery is less than 5 years old, 60 per cent is 5 to 10 years old, and the rest was installed more than 10 years ago. Permanent workers number 10 to 16, mainly skilled; two to four are of Asian origin. Annual value of output might be 1.5 times the fixed assets. There are about 25 firms of this type in the country.

The Tanzania Agricultural Machinery Testing Unit needs to be mentioned in this context. This is a unit of the Ministry of Agriculture mainly occupied in testing, adapting and designing farm implements (chiefly ox-drawn implements), but also producing limitedly for sale. It has six Rural Craft Workshops (RCW) in the regions, and these have so far concentrated on production. Total capacity amounts to about 400 ox-carts and 150 ox-ploughs per year, but it is not yet fully utilized. One workshop visited in May 1977 had 18 ox-carts standing in its yard waiting to be sold. Potential buyers had been identified, but no means of transporting the carts to the more remote farmers had been found. The workshop had therefore started making window- and door-frames until the distribution problem was solved. Another workshop, located in a traditional ox-using area, had raw materials supply and management problems and could not meet the area's demand for carts and ploughs.

Six new workshops are planned for the next two years. The aim is eventually to have one in each region and to add an ox-training and demonstration component to them all. They are also supposed to provide craftsmen's training and to encourage the creation of village workshops. This latter function to some extent overlaps that of SIDO, and there might also be competition with the industrial estate general engineering workshops of SIDO not so much for the market as for the supply of raw materials, especially iron. The cost of one rural craft workshop is about TSh 4.5 million of which the workshop equipment and plant accounts for about TSh 1 million. Each workshop is scheduled to employ some 30 persons.

Finally, SIDO has worked on plans for a medium-scale farm implement enterprise in one of the regions as part of an IBRD-sponsored rural development project. Capacity would be for 260 tons of animal-drawn implements per year. Investment amounts to about TSh 2.7 million and some 70 people are employed.

Distribution

As already stated, UFI is charged with controlling the formal sector distribution of all agricultural hand tools and animal-drawn implements, and the main channel used is the Regional Trading Corporations (RTCs). Their policy, as with other state-controlled wholesale agents, is to sell essential tools and consumer goods primarily to co-operative shops and government agencies; i.e., they discriminate against privately owned shops in order to promote co-operative retail distribution and retain trade profits under state control. However advantageous this policy may be, it has had repercussions for the consumer, with a shortage of implements in the villages during the build-up of the RTCs and the co-operative shops. Where there is no RTC district sub-wholesale system, the shopkeeper has had to travel to the regional centres to buy stocks, often without knowing in advance if the items he wants are available. With RTC sub-wholesale stores set up in the districts the situation is better, but a check-up in mid-1977 in quite a number of district RTCs

revealed that they had hardly anything in stock. The main reason given was the problem of transport. This communications problem was previously overcome by a network of privately owned vans and pick-ups. Many shopkeepers had their own means of transport, as the co-operatives of course may eventually have, and the RTCs may also acquire sufficient trucking capacity to ensure timely deliveries to the districts.

Another problem concerns the bureaucratic rigidity of the RTCs themselves in their ordering procedures, market surveying and price-fixing arrangements. For example, one RTC visited had a quantity of Brazilian-made *jembes* of very poor quality in stock, which were useless for the hard soils of the region. However, there appeared to be no procedure whereby the RTC could sell the *jembes* at a lower price, nor could it send them back. It seemed reluctant to order other *jembes* before these had been sold. This example is probably an exception and does not make for a fair evaluation of the RTCs. It is cited nevertheless to illustrate the kind of internal problems the system has to cope with.

There were no means of measuring the relative effectiveness of the distribution system, and no direct, quantitative figures for the overall magnitude of unsatisfied demand for implements. One indirect indication may be given, however. Total demand for new *jembes* for 1976 was projected at about 3.2 million, and the RTCs and UFI had some 1.4 million in stock at the beginning of that year. As indicated below, the expected demand for 1976 should have been only 2.5 million under normal distribution circumstances. It may be assumed therefore that in 1975 there was an under-supply of about 0.7 million *jembes*, as distinct from a deficit in production or imports. The importance of having as full details as possible of the functioning of the distribution system when considering industrialization is discussed in a later section on an alternative approach.

Demand-supply balance

In this sub-section an attempt is made to identify and quantify the gap between demand and supply. Regrettably, reliable data exist only for *jembes*, but as these are the most important implements, the data may serve to indicate the trend. A rural household survey³⁸ made in 1969 recorded an average figure of 3.1 *jembes* per household. Assuming that this holds for 1975 and taking the average household size to be 4.6 people, then the 14 million rural people possessed 9.4 million *jembes* in 1975. To arrive at a rough idea of the size of annual demand further assumptions are needed. Firstly, the average life of a *jembe* is four years, i.e. a 25 per cent annual replacement rate. Secondly, growth in demand is in proportion to population growth, namely 2.7 per cent up to 1975. Thereafter a decrease in demand might be expected to about 1.5 per cent due to mechanization. Both rates are used as possible limits to the projections which are depicted in figure 1. The present yearly demand is about 2.5 million. The recorded sales from imports and UFI production are also plotted in figure 1.

Figure 1 shows an average demand-supply gap in the period 1966-1969 of 0.4 million *jembes*; thereafter until 1974 it was 1.2 million, making an average of 0.8 million over the whole period. (However, this is not a true picture since it does

³⁸ Ian Livingstone, "Results of a rural survey: the ownership of durable goods in Tanzanian households and some implications for rural industry", I:RB paper 70.1, University of Dar es Salaam, 1970.

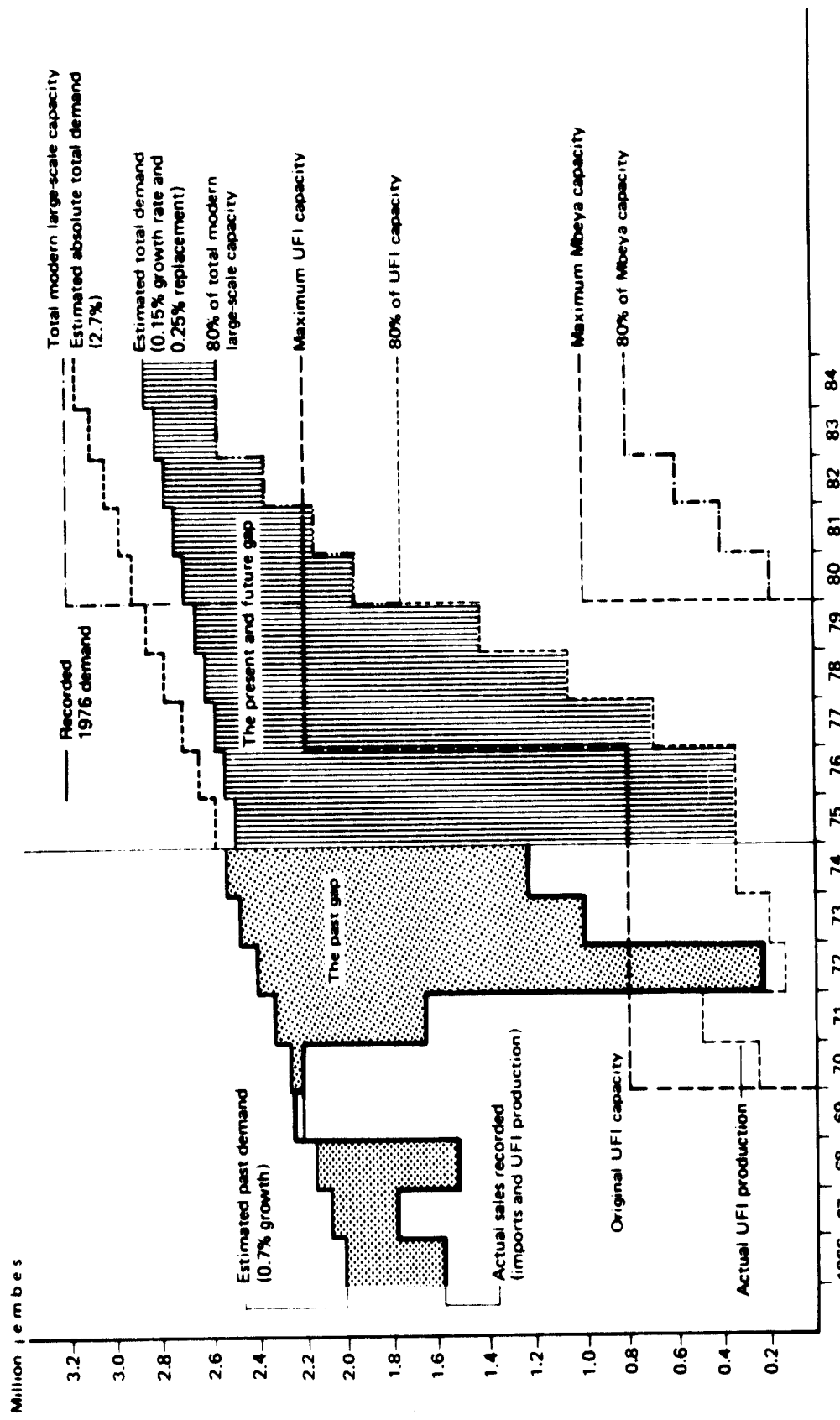


Figure 1. Demand-supply balance of jembes, 1966-1984

not include village production which will be considered later in this chapter.) As regards the "present and future gap" position we note first that possible imports of *jembes* are excluded. Secondly, the increased capacity of UFI and of the new Mbeya plant is included; in total this will give a maximum modern large-scale capacity of 3.2 million *jembes* in 1980. It has been assumed that there will be a three-year build-up to full capacity, and that only 80 per cent of full capacity will eventually be reached. The result is a reasonable estimate of the present and future (until 1985) demand-supply gap at about 5 million *jembes*, starting at 1.55 million in 1978, reaching a minimum of 0.25 million in 1983, and increasing again to 0.29 million in 1984. In the event of the mechanization programme being successful, together with efforts to increase yields by improved seeds etc., the demand curve may decline. If not, it may even increase along the lines of the upper "estimated absolute total demand" curve. In the event of actual modern large-scale production not being stepped up to the extent foreseen, the gap will obviously be larger than estimated. Considering these uncertainties, and the past deficits in supply, it is concluded that the estimate is realistic and at least a reasonable starting point for the discussion in a later section of how the gap can be filled.

Other rural implements

No large-scale production of craftsmen's tools and basic household utensils exists apart from some quite sophisticated aluminium pots and pans mainly for the urban market; and these are the secondary lines of an enterprise making corrugated aluminium, galvanized plates and pipes. One medium-scale enterprise makes enamel-ware, another galvanized buckets and stainless steel-ware, and another kitchen knives all in relatively small quantities compared with the size of the market. Some general engineering workshops occasionally make a series of buckets and other sheet-metal utensils to order. The products can hardly be called rural implements, however, simply because of their price. Apparently, only the buckets and the knives reach rural households. No craftsmen's tools of any significance are made by these enterprises. Most rural tools and utensils are imported. To indicate the magnitude of these imports, the aggregate value in 1973 was TSh 20 million for imported hand tools and about TSh 10 million for cutlery, buckets and other metal domestic utensils.

Essential hand tools normally distributed through RTCs are simply not available in many regions of the country. This is probably not just because of inefficient distribution, but also because of insufficient imports.

Village blacksmiths and tinsmiths and the rural distribution system

Recent investigations indicate that iron was excavated, smelted and forged in north-western Tanzania as far back as 300 B.C. Blacksmiths were therefore at work well before Arab or European intrusion. The early European explorers of East Africa tell of prosperous kingdoms founded on the local mastery of iron-working technology. One report in 1892 estimated the number of *jembes* annually traded at the Tabora market (the main centre for inland trading) as 150,000.

The German and later the British colonial authorities forbade the blacksmiths' trade in many regions of the country, probably on the lines of the general colonial policy of reserving markets for imports. Another reason may have been the smiths' ability to make guns. These measures were only partially successful, however. The smiths continued production in hiding and survived the colonial harassment better than most other original craftsmen, largely because the rural population was dependent for its survival on the supply of tools for subsistence agriculture. One possible reason why the iron-working technology did not develop into a more sophisticated and diversified trade, and remained largely at its pre-colonial level, is that little development took place in agricultural production techniques. Moreover, in most places the blacksmiths' activities were so deeply integrated into the cultural life of the villages that the colonial ban could not effectively stop them.

After independence the blacksmiths' activities were not suddenly recognized or registered. Their very specialized and remarkable skills did not fit into the labour code inherited from the British, e.g. a master smith could not pass a trade test even at the lowest grade. The smiths are thus still officially regarded as unskilled labour. Their technology appears to be quite distinct from that of the formal sector metalworking technology.

Present numbers

No comprehensive survey exists of the present number of rural smiths. While this fact has been observed by many United Nations and other donor agencies' reports on promotion programmes for rural industries, the assumption has been made that there are practically no rural craftsmen's activities. Consequently the reports contain programmes proposing that rural industries be built up from scratch, with certain detrimental effects.

Some data are, however, available. In the 1967 population census,³⁹ the category "blacksmiths, tool makers, machinists, plumbers, welders, and related workers" amounted to 0.09 per cent (12,600) of the rural population. One region, Mwanza, known for its active blacksmith groups, recorded a figure of 0.11 per cent (14,100), i.e. not much higher than the national average. In 1974-1975 integrated regional development plans were prepared for practically all the regions as part of the third five-year plan. Two detailed surveys of existing rural industries were made, in the Tanga and West Lake regions. The Tanga report⁴⁰ gave both black- and tinsmiths as 0.29 per cent (40,600). This relatively high figure presumably reflects the thoroughness of the survey, but probably also the fact that Tanga was historically one of the more active regions industrially. West Lake⁴¹ had a corresponding figure of 0.12 per cent (16,500), but this excluded tinsmiths. Finally, from a village skill survey⁴² in selected districts a figure can be computed of 0.09 per cent (12,600) for village ironworkers and metalworkers

³⁹ CSB, 1967 *Population Census*, vol. 4 (Dar es Salaam, 1969).

⁴⁰ *Tanga Integrated Regional Development Plan*, vol. 3 (1975) (sponsored by the Federal Republic of Germany).

⁴¹ *Integrated Regional Five-Year Development Plan (1975-80), West Lake Region, Tanzania* (February 1975) (sponsored by DANIDA). The survey is recorded in more detail in J. Müller, *Decentralized Industries and Inadequate Infra-structure*, Institute for Development Research Papers A.76.5 (Copenhagen, 1976).

⁴² J. Rudengren and M. L. Swartz, *Village skill survey. Report of the pre-pilot and pilot surveys*, University of Dar es Salaam (Bureau of Resource Assessment and Land Use Planning, January 1976).

On the assumption of 14 million rural inhabitants, therefore, the implied total for the rural metalworking population ranges from 12,600 to 40,600. But it would be better not to be too optimistic about the present number of smiths; 0.1 per cent or 14,000 would seem a quite realistic estimate. It would be preferable for planning purposes to work with a figure of 10,000.

Working methods

A random collection of case studies to supplement these quantitative estimates were carried out in Tanga, Arusha, Mara, Mwanza and West Lake regions in the north, and in Mtwara, Ruvuma and Iringa regions in the south. One general conclusion was that the more remote regions had the most active blacksmith groups. However, within a region it seems that the more distant a smith lives from the district centre the less active he is, unless he lives in an area where iron for excavation and smelting, and firewood for charcoal burning, are still available. In such cases he might be active during parts of the year in iron extraction. This still occurs in two places in the south (Mbamba Bay and Mufindi), and allegedly in two others in the west and north.

An average picture of the knowledge organization, technique and products, i.e. the technology, of the village blacksmiths, based on the sample of 22 groups interviewed during the survey, is given in the following paragraphs.

The smelters have aroused most interest, and have prompted questions about the feasibility of reviving their activities. It is doubtless not feasible, either from an economic or from an ecological point of view, to attempt to encourage this type of charcoal-fired kiln-smelting. The pig iron produced is of high quality (the temperature in the kiln can reach up to 1600°C), but estimates based on recent tests in West Lake region reveal that it requires about 20 to 30 man-days and costs a minimum of TSh 40 per kilogram. The corresponding price from the steel rolling mill in Tanga is about one tenth of this. Moreover, the charcoal burning takes about one ton of wood per kilogram of iron. In some of the places visited the smiths said that one reason why they had stopped smelting was that the particular types of wood they needed were no longer obtainable. The Mufindi smiths, who still smelt each August, were aware of the diseconomy of what they were doing. They all spoke of the hard labour involved, and the long distances walked in order to bring them food while at work. There obviously are cultural aspects to this activity, but all said that they would happily abandon it if they could get sufficient good quality iron from other sources. At present they collect all the scrap iron they can, but demand for their products must be so high that they still choose to supplement this with their own production.

In more theoretical terms, the smelter-smiths seem to regard their opportunity cost as very near zero in the agricultural slack season, given the fact that suitable scrap iron is as scarce as it is. But they would change this view if sufficient iron were made available from other sources. From a national point of view it also seems inefficient to have these highly skilled people chopping and burning wood for charcoal production, digging holes for iron excavation etc., when they could be making useful implements. The smiths who are actively smelting, however, are an exception. Most who previously extracted their own raw iron have stopped doing so, mainly because scrap iron became obtainable and because of deforestation. The smith in West Lake region stopped smelting about 40 years ago.

The basis of the smiths' technology is difficult to describe. It is an inherited craftsman's knowledge, an integral part of the native craftsman's knack and skill. The only way in which the knowledge can be transferred is through intensive apprenticeship. When given a piece of steel, the smith weighs it in his hand, puts it in his hearth, observes how long it takes to get what colour, and finally beats it with his hammer, observing what kind of sparks it makes. By then he knows what kind of steel he has in hand, in the sense that he knows what type of implement it can be forged into as well as what it cannot be used for. He cannot translate his knowledge into percentages of carbon content etc., yet he knows. The testing procedures just described are very much dependent on the use of the smith's own tools, e.g. hearth and bellows, hammer and anvil. Given other tools he might be lost, or it would at least take him some time to adjust his knowledge.

The smiths are typically organized as individual producers, or in groups. This does not mean that they work alone; they each have one or two assistants or apprentices. One operates the bellows, the other assists in the forging, sitting opposite the master smith. The apprentices are typically sons or close young relatives. The smith takes part in all operations himself, even travelling for the collection of scrap iron, charcoal burning and often selling the products as well. At the same time he is a farmer, i.e. he is occupied only part-time as a smith.

When organized in groups, the master smiths occasionally assist each other, but essentially what they have in common are the workshop premises. However, four of the 22 groups visited had started some closer collaboration and had introduced some division of labour. In one village 15 master smiths were sitting under one roof. They had recently moved there during the general movement of the scattered rural population into *ujamaa* villages. They had started the collective gathering of scrap iron and burning of charcoal, and talked of collective marketing once production became larger than the consumption of the village itself. In another village all the villagers had assisted in the construction of a semi-permanent workshop with corrugated-metal sheet roofing. Here the smiths, eight in all, had introduced what they themselves called "staged" production. Stage one was cutting up the scrap into pieces of almost equal size; the next was a rough semi-finishing forging stage; and the last was the final shaping stage. In other words, a division of the forging process itself had been introduced.

The smiths' tools are mostly anvils of stones half buried in the ground; the charcoal-fired hearth is placed next to the anvil in a hollow in the ground, and the bellows are of goatskin activated by sticks with the air blown through wooden and clay pipes. The smiths sit on the ground and use hammers and tongs, often both home made. They use chisels to cut the red-hot iron, peculiar home-made drills for making smaller holes, and files for sharpening edges. The workshop is typically low, open, with a thatched roof and situated on the smith's farm compound. There were only a few signs of reinvestment in improved or new tools or buildings, e.g. the bellows had been replaced by a mechanical air blower driven by a bicycle wheel or the stone anvil by a heavy piece of steel. But the work process remained essentially the same: hand forging and shaping according to the smith's inner vision of what the end-product should look like. One could almost say that the smiths were modelling each item.

A few more advanced workshops were visited. There the knowledge originated from formal training. The workshops were organized as partnerships or co-operatives; electrically powered, mainly welding equipment was in use, and the products were

made according to drawings. The workshops could be called infant general engineering shops. Since they employed only six to eight people, they could be called small-scale enterprises.

Products

It was noted above that the work process of the village smiths is a modelling process. The products are therefore never identical. For example, a smith can make 2,000 axes, but since no two of them have precisely the same shape, he in fact makes 2,000 different axes. However, if given exactly the same shape of raw iron and told that the axes are to be used by the same user for the same type of wood cutting, a smith would produce axes of such similarity that only micro-measurement tools could reveal the difference; in other words the use-value of the axes would be the same. But no two smiths have the same inner vision; all sorts of scrap-iron pieces are used, and the smiths know the preferences of individual customers and the different uses to which they will put the axes. Therefore, the axes they produce do look different, even to an untrained eye. Yet the usefulness of each axe has probably been optimized.

The main product is the *jembe*. The variations in shape are much greater than those described for axes, as varied as the soils and crops throughout the country. Some are heart-shaped with points, some are straight-edged, and others are wide and curved for hard, medium and soft soils respectively. Some are big and heavy, some are small and light. Quite a few smiths were encountered who reshaped the standard UFI *jembes* for their customers. UFI makes only one shape of *jembe* in two sizes, 2½ pounds and 3½ pounds, and although this shape may be the best average standard shape, some peasants apparently are not satisfied and go to the trouble of having the new *jembes* reshaped by the smiths.

The smiths also make *pangas*, sickles and slashers, which are also imported or made by UFI. However, the smiths' product diversification extends much further and includes a large number of items that are not imported or produced elsewhere in the country. Spears and arrows are commonly known tools, but other items are produced for which there are only local and not even precise Swahili names. All are highly essential for the subsistence type of production which is still widespread.

No information was available about how many different types of implements are made, nor how many of the special implements are in use compared with the more common types. Table 3 summarizes the result of a survey of 30 peasant households in the Ibwera area of West Lake region. Out of the 5.1 *jembes* per household, 18 per cent were locally made, i.e. by the village smiths; the rest were imported or made by UFI. Forty-six per cent of the village-made *jembes* were made by smiths in the same area. The last column gives the peasants' answer to the question of durability. They apparently regarded the village *jembes* as more than twice as durable as those manufactured, perhaps because the smiths can repair their own products more easily than they can the manufactured ones. Planting *jembes*, sickles and banana *pangas* appeared to be just as commonly in use as ordinary *pangas* (between 1.4 and 1.8 per household) and these specialized items were wholly locally made, as were the spears and knives.

On the assumption that the situation in Ibwera area is typical of that elsewhere in the country, the calculation of the gap between demand and supply of *jembes* illustrated in figure 1 needs revision. If account is taken of an annual village production of 18 per cent of demand, then the average yearly gap for 1966-1974,

TABLE 3. DISTRIBUTION BETWEEN LOCAL AND MANUFACTURED HAND TOOLS, IBWERA AREA, BUKOBA DISTRICT, 1974

Item	Average number per household	Proportion made locally (percentage)	Proportion bought in the area (percentage)	Duration (years)	
				Manufactured	Local
Jembes	5.1	18	46	5	11
Pangas	1.8	29	21	8	13
Axes	0.5	28	48	16	19
Banana pangas	1.4	100	74		12
Sickles	1.7	100	56		21
Knives	0.7	100	65		13
Spears	0.8	100	64		32
Planting jembes	1.8	100	49		13

Source: West Lake Planning Project.

previously estimated at 0.8 million, is halved. Similarly the gap for 1978-1984, estimated at 5 million, is reduced to 1 million, and the estimated minimum deficit of 0.25 million for 1983 becomes a 0.25 million surplus. For lack of a better figure 18 per cent was used in the above calculation. Whether the actual figure country-wide is 10 per cent or 20 per cent is not known. What is sought is of course an impression of how significant village *jembe* production may be. Some explanation of why agricultural production was perhaps not as badly affected by the deficit in formal sector *jembe* supply as might be expected is given by figure 1, from which a notion is also gained of the implications of keeping village production alive, or even of promoting it.

Apart from farm implements, the blacksmiths make various tools for village carpenters and masons. They also make kitchen knives, scissors, frying pans etc. The tinsmiths make lamps, stoves and other scrap sheet-metal utensils. Some of those visited made items such as buckets, chicken feeders and watering cans from plain galvanized sheets. The infant general engineering shops made wheels, axles and frames for ox-carts, self-designed sheet-metal grooving machines and water tanks, to mention but a few examples.

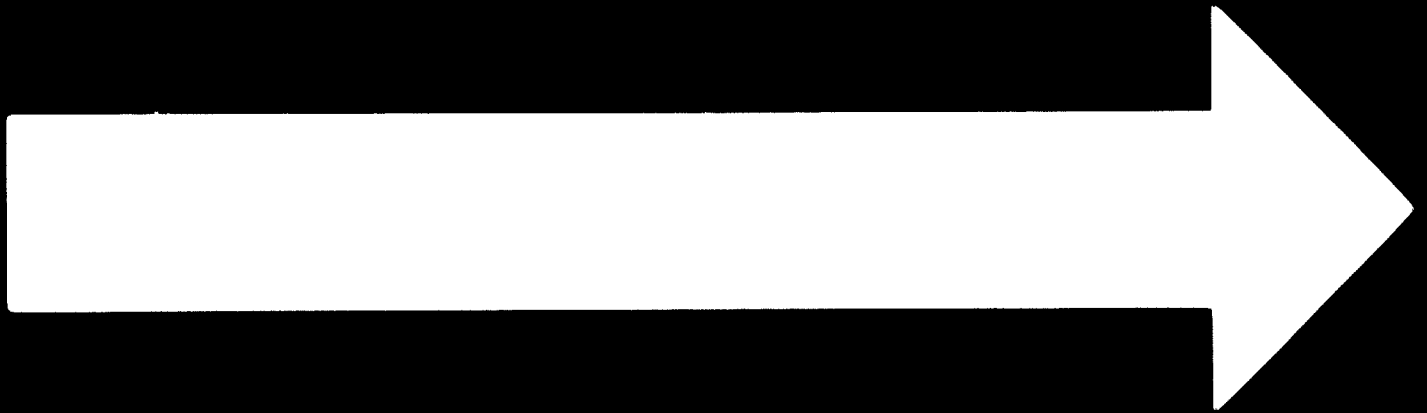
All workshops did a substantial amount of repair work and even simple spare parts manufacture, particularly of implements of their own making. But repairs and spares were also made for bicycles and shotguns.

"Local" distribution system

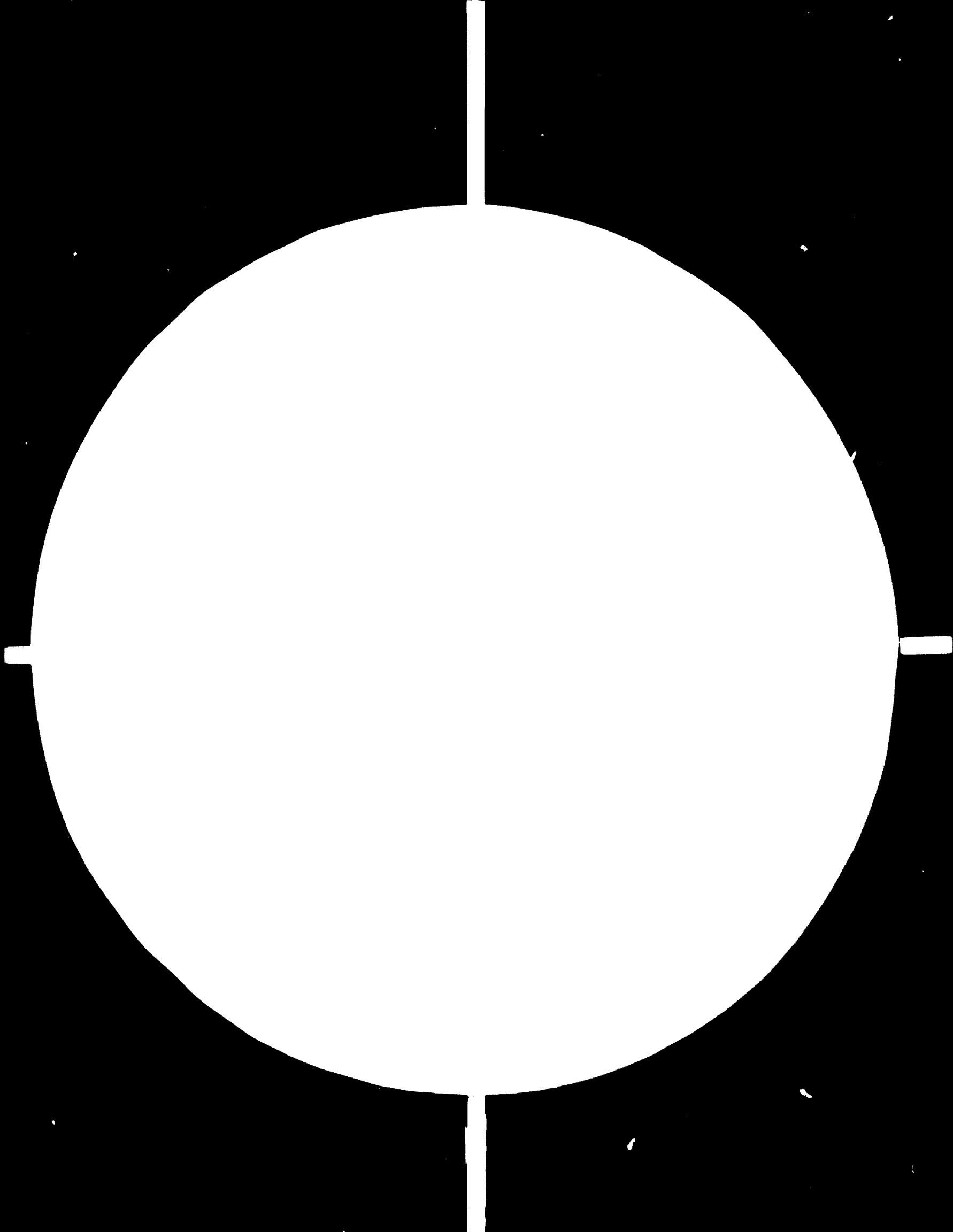
Most of the products made by the village smiths are probably made to order, although in many cases only if the customers provide the necessary raw materials. This type of production poses no distribution problem, although it might be an indirect sign of marketing difficulties.

A considerable proportion, however, are sold through the "local" distribution system. "Local" means what government administration officers used to call the informal non-registered trading system in the rural areas, i.e. excluding the registered

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co-operative shops. The markets and the products that this system involves are called the local markets and the local products. This word is often used in a derogatory sense. Yet the local markets are the only outlets for the products described above. During the survey of blacksmiths several local markets were visited and the tradesmen selling implements were interviewed. Many products had been brought over appreciable distances, say, up to 100 kilometres. The tradesmen had bought them direct from the smiths and then travelled by bus or hitchhiked in trucks. Some had not come to the market especially to sell the products, but on other errands; knowing, however, that the implements in question were in large demand in the area, they brought them, more or less in order to cover the cost of travel. Other tradesmen were smiths themselves or relatives of smiths.

Tough bargaining procedures were used with the tradesmen in order to get as close as possible to the local selling price. When more than one implement of a type was for sale, although all had the same price quoted at the outset, prices quickly varied according to minor differences in shape or otherwise. The significance of this is that in many discussions with representatives of the formal UFI-RTC marketing system about whether some of the local products could be sold through that system, it was invariably maintained that this was not feasible. It was not thought possible to fix one standardized price for products as varied as these. But it is possible for the local marketing system to fix various prices. In theoretical terms, the difficulties in fixing the exchange value of the implements in question were said to be insurmountable for RTCs.

In many districts the local markets were held in different places on a rotating weekly schedule. Travelling tradesmen could therefore cover a large area during the week. However, in at least one case this system was stopped by a directive permitting local markets only on Saturdays after 12 noon. Admittedly this was during a general attempt to mobilize the peasants to cultivate as much food as possible, the argument being that on market days nobody did any serious work. A counter-argument could be that if the peasants could not buy new implements for food crop cultivation, they would probably be held back even more seriously. The case quoted may be an isolated one, but it illustrates, perhaps to an extreme, the status that the local markets have in the eyes of some district authorities.

Programme for rural implement manufacture

Past approaches to the promotion of rural craftsmen

The main question raised in this chapter is, which strategy for rural production would be most expedient and realistic? And in particular, what seems to be the potential role of the village blacksmiths and tinsmiths in such a strategy?

In attempting to answer such questions, it is essential to review the past and present structure in large-scale development, at least within the branch of trade for which the promotion of small industries is also being considered. Similarly, the functions and structure of the existing rural industries need to be investigated.

It has already been hinted that such an approach has not been followed in past attempts to tackle the question of supporting the rural blacksmiths and tinsmiths. There have not been many such attempts. The author knows of three which deal

only partially with the subject: the Rao⁴³, Kienbaum⁴⁴, and Swedish International Development Authority (SIDA)⁴⁵ reports. These reports contain useful information and should not be dismissed completely. They are quoted because they seem to represent three different and typical viewpoints.

In general, they contain only partial, narrowly defined analyses. Yet they all contain remarks about the "urgent need" for an "integrated approach". This would have been all right if the various analyses had supplemented each other, but this is not the case; there tends to be substantial overlap, possibly because they have been made by aid agencies, with the express purpose of designing aid projects. They all conclude with a project proposal. What emerges from them is an impression of donor competition, which seems sometimes to paralyze the implementing authorities in the recipient country.

All of the reports more or less ignore a substantial amount of the existing "local" production of farm implements, probably because of a lack of information. The village blacksmiths, if mentioned at all, are brushed aside typically with remarks such as that of the Rao report:

"At present there is no worthwhile village/small-scale industry which can undertake manufacture of hand tools and manually operated machinery in appreciable numbers. Due to the conspicuous absence of the traditional artisans and basic workshop tools, with the existing skills and resources, only very limited quantities of crude hand tools of poor quality can be manufactured."⁴⁶

Moreover, the Rao report repeatedly stresses the need for "modernity" and, although not stated directly, one is left with the impression that the craftsmen are disregarded because their technology does not fit into the writer's conception of modernity. One could call this the "start-from-scratch" approach.

The Kienbaum report does recognize that "in some villages there are blacksmiths producing axes and *jembes* (crude but improvable)". It goes on to argue that:

"The idea has to be accepted that each of the 6,000 villages in Tanzania eventually will need a metal workshop (blacksmith, mechanic) and a woodworking workshop (carpenter) if agricultural mechanization and better animal husbandry is to find a secure and broad base."⁴⁷

However, although this report recommends that these workshops should employ existing craftsmen it also estimated that each pair of workshops should be provided with tools, equipment and working capital worth TSh 120,000, i.e., TSh 72,000 for the blacksmith workshop and TSh 48,000 for the carpenter workshop, and that each

⁴³ K. K. Rao, "Agricultural implements and machinery production and maintenance", UNIDO/FAO Co-operative project URT/74/006, January 1975.

⁴⁴ Kienbaum Beratung, "Demonstration manufacturing plant", UNIDO contract no. 75/41, TI/RAI/74/009, April 1976.

⁴⁵ SIDA, *Development of Small Industries in Tanzania* (Stockholm, February 1976).

⁴⁶ K. K. Rao, *op. cit.*, p. 19.

⁴⁷ Kienbaum, *op. cit.*, p. 36.

should receive help and advice from an extension service which would cost a similar amount of money. The workshop buildings are assumed to have been provided through self-help efforts.

These sums of money are extraordinarily high. If the implied standard of workshops were accepted for all the 6,000 villages mentioned, it would undermine the whole idea. The cost would be about TSh 14 million (or almost 1 per cent of the total current national development budget) to establish just 60 such pairs of workshops per year, and it would take 100 years to "cover" the country (assuming that the number of villages remained constant). This then is a typical case of a good idea being blown up into nearly impossible financial and administrative dimensions. It could be called the "over-boosting" approach.

The report of SIDA includes a proposal to support village craft development by the production of "means of production". It recognizes that lack of knowledge of existing local skills is an obstacle to support with respect to upgrading of skills, introduction of new skills, and choice of products and product design. It then goes on to propose the establishment of a village workshop cluster, a so-called "Utundu Industrial Development Village", with equipment (including an electric generator) and vehicles worth about TSh 1.6 million and assistance from expatriate personnel corresponding to 11 man-years over a period of two years. The whole project would cost TSh 6.4 million. This could be called the "thorough direct" approach.

The project put forward by SIDA was not approved by SIDO, but SIDA agreed to make the money available for a redesigned project or programme—the Utundu programme described below—in support of village craft development.

The three approaches have a common reliance on development inputs not only from above, but also from abroad. Although adapted to some extent to local conditions, the knowledge, organization, techniques and products i.e. the technology—to be transferred to the rural scene are essentially modern. Such transfers are prohibitively costly for replication all over the country; their effects are therefore limited to comparatively few locations. Furthermore, the relatively high-level infrastructure necessary to fit the technology is expensive to establish and maintain. To run a generator requires diesel supplies, the electrically driven machines require spare parts, and the presumably large production output needs a constant supply of raw materials and marketing arrangements. The district authority granting such a transfer of technology to one of its villages soon finds itself directing comparatively more of its financial and administrative resources towards that village than to others.

But one common argument claims a spread or demonstration effect. Neighbouring villagers will come and admire the new technology, start wanting the same thing, start learning by looking, and then go back and try to do the same things. Experience of how difficult it is to do the same things with no equipment will be likely to result in frustration and passivity. But even if the funds are miraculously raised to buy the same technology, the neighbouring villages might not—at least not all—be able to persuade the district authorities to provide them with the same infrastructural services as the original village. Political pressure might divert the services from the original village to a new applicant; and in all probability this would result in the collapse of the technology of the original recipients. In other words, the demonstration effect may well be negative, whatever happens, although the direct benefits of the new technology may be higher than the direct costs.

Towards an alternative approach

An alternative approach to those already described can be constructed. Its crucial differences concern the underlying assumptions on which the other approaches build their recommendations as much as the recommendations themselves. The assumptions of the suggested alternative approach are as follows:

(a) The potential for production by small industries is by and large already fully exploited, given the policies towards large-scale industries and imports, the effective demand, and the extent and development of the industrial service infrastructure in the rural areas. Lack of reference in the previous approaches to large-scale industrial policies and their incomplete picture of the demand structure have already been mentioned. The following propositions, therefore, cover only the question of infrastructure, defined as the common material and institutional conditions of production, including service agencies such as credit institutions, the distribution system and post offices;

(b) It is false to assume that there can be further development of small industries without a simultaneous general development of the infrastructure, directed in particular towards the requirements of small industries. It is only by coincidence that there is any overlap between the existing export-import-oriented infrastructure and that necessary for small industries;

(c) It therefore follows that it is not sufficient to demand that the technology transferred to small industries be adapted to so-called "local conditions" in order to create an appropriate technology.^{4*} By and large, the technology in use is already adapted to local conditions to the point where no more substantial improvements can be obtained without a change in infrastructure.

The implication is that an absolute precondition for a rural industrial development programme is a simultaneous infrastructural development programme. The infrastructural programme is the more important and therefore needs to be a step ahead. The existing craftsmen are skilled and capable of developing themselves and their technology, given improved common conditions of production.

The West Lake report already referred to included a survey of the existing infrastructural facilities. This recorded the facilities in the district centres and in the designated rural centres, grouped under the headings of "administration and access", "social infrastructure" and "economic infrastructure", within which the most important services were listed. The results of the survey are shown in figures II and III. The bottom half of the circles in figure II depicts the economic infrastructure, which serves an annual export of about 15,000 tons of clean coffee and 21,000 bales of cotton. It would be far less adequate for food crop production or small industries.

^{4*} The connecting feature between the discussion of the appropriate technology concept and rural industries is the contention that appropriate technology is synonymous with small-scale or low-cost technology. Numerous references could be made on this point. Suffice it here to refer to *Appropriate Technology and Research for Industrial Development* (United Nations publication, Sales No. 72.II.A.3). In this publication the demand is made for adaptation of technology to "local conditions" or "circumstances", but it is not clear what these two vague concepts contain. The endowment factors of production are usually included, and it is assumed that infrastructure as defined in this paper is likewise included.

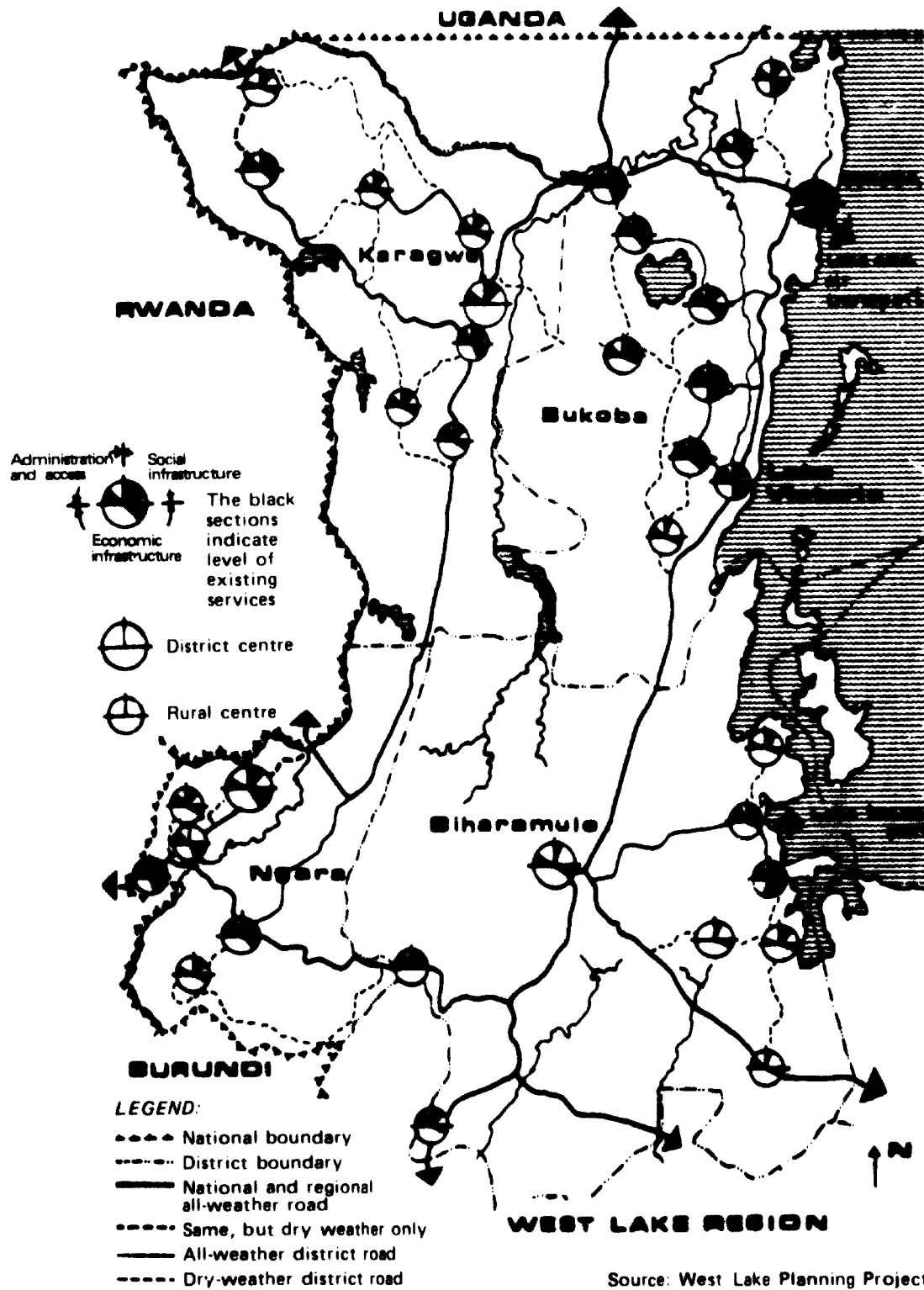
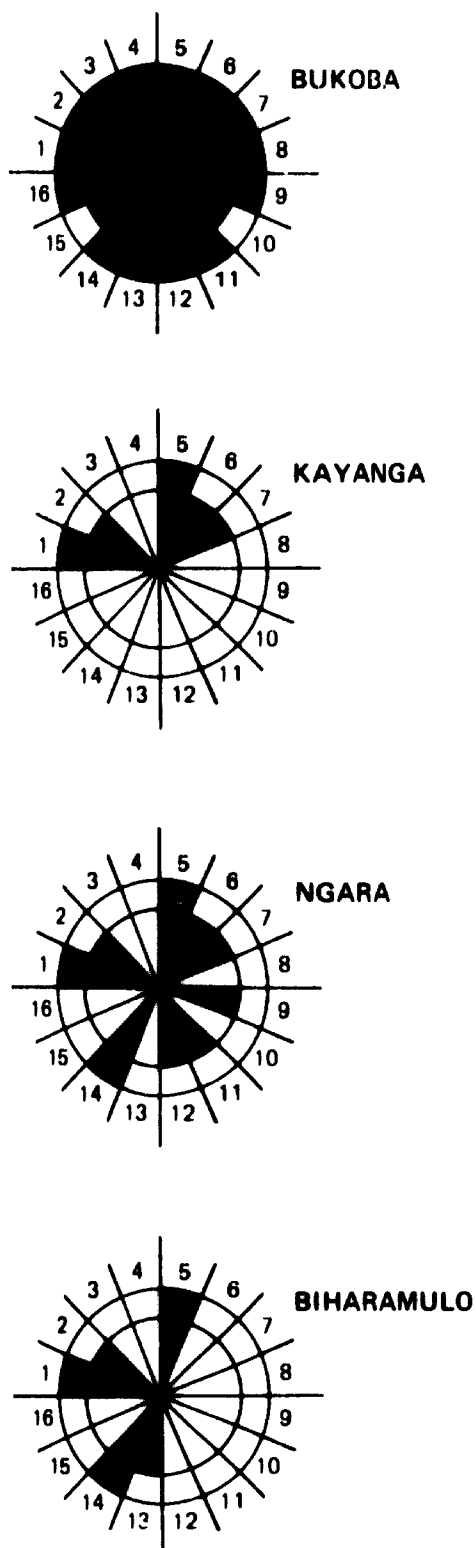


Figure II. Extent of development of economic centres



Administration and access

- 1. District offices
- 2. E and M garage
- 3. Bus station
- 4. Telephone

Social infrastructure

- 5. Hospital
- 6. National housing scheme
- 7. Community centre and library
- 8. Stadium

Economic infrastructure

- 9. Co-operative export crop marketing branch
- 10. Food crop marketing organization
- 11. Co-operative wholesale branch
- 12. Co-operative transport branch
- 13. Regional Trading Corporation (RTC) branch
- 14. Market
- 15. Small industries site and service
- 16. Electricity supply

Note. When a section is fully shaded it means that the service is available to a "satisfactory extent". Partly shaded means that the service is available to a limited but not sufficient extent.

Source: J. Müller, *Decentralized industries and inadequate infrastructure*, Center for Development Research Papers, A.76.5 (Copenhagen, 1976).

Figure III. Example of rural infrastructural development in the West Lake region: district centres inventory, 1974

The less economic infrastructural services and accessibility recorded, the less rural industries existed. This may not appear very surprising, but it nevertheless counters an often cited argument that the more remote places offer relative advantages to small industries because of their nearness to the consumer *vis-à-vis* the large industries which have long and costly transport problems. In general, however, the more remote a location, the more difficult it is to obtain the essential supplies of raw materials and other inputs for small industries.

As regards infrastructure, the three approaches cited make proposals for direct, special services for the particular small industries units included in their programmes. This is a veritable pampering of the fortunate few, a Father Christmas approach. Free tools, materials, marketing services are often proposed for such enterprises, just to keep them going and, perhaps, just to try to prove that some successful industries can be run in the rural areas.

The alternative approach⁴⁹ advocated here has less paternal characteristics. It does not attempt to anticipate infrastructural developments and thus is better integrated with other rural development efforts and more in line with the national rural industries policy in general and the declared objectives of SIDO in particular. Its distinctive features are:

(a) Definition: A small industry is defined as "any unit whose control is within the capabilities of our people individually or co-operatively, in terms of capital required and know-how";

(b) Objectives:

- (i) "To utilize existing or traditional skills and resources in order to achieve increased production and the national objectives of socialism and self-reliance";
- (ii) "... to eliminate step by step the disparities in living conditions existing between urban and rural areas" (and presumably between rural areas).

Details of the Utundu programme

The alternative programme is called "Utundu", which is Swahili for "stubborn" in its positive sense of insisting, inventing, innovating, trying again. It was coined in the SIDA report's proposed "thorough direct" approach to rural implement manufacture. However, SIDO preferred a less thorough and direct support programme, and in close collaboration with SIDO the following alternative approach was elaborated which is in the process of being implemented.⁵⁰

The aim of the programme is to promote small-scale manufacturing and repair of iron and metal items, namely farm implements, tools for other small industries and household utensils. The programme has two components: (a) a product and process development and (b) regional implementation.

⁴⁹The alternative approach is applied here to the promotion of the rural blacksmiths' and tinsmiths' trade. It might not be applicable to other trades, e.g. trades with no rural skill base. In such cases it may be necessary to turn to the "start-from-scratch" approach, if the trade is to be promoted in the rural areas.

⁵⁰Not all the details are finally approved and agreed on by all parties concerned. The reader should therefore regard it as a proposal still under consideration.

The first is the concern of SIDO headquarters. It consists of documentation and information on new product prototypes and improved ironworking techniques. Experiments will be co-ordinated and subcontracted to local workshops, i.e. to industrial estate general engineering shops sponsored by SIDO. As Utundu-sponsored workshops gradually become consolidated at the district centre and village levels, the new products and techniques will be carefully disseminated to them, through a slowly expanding technical extension service and skill upgrading programme. There are two reasons for this initial restraint. It is time- and resource-demanding to carry out experiments, the results of which have to be thoroughly tested before their widespread application.

The first phase of this regional implementation is designed to consolidate existing blacksmiths' and tinsmiths' groups rather than to expand them. The reason for this approach is the recognition that there are groups to consolidate, and that these should not expand their activities too much ahead of infrastructural developments. Otherwise what has been consolidated might easily be destroyed.

Identification and selection of groups

The first step in this regional implementation is merely a continuation, although intensified, of the country-wide survey begun by the small industries promotion officers and their assistants to identify most, if not all, of the active blacksmith and tinsmith groups. Whenever an active group is spotted it will be visited and interviewed. As a minimum the following information will be obtained:

- (a) Precise location of the group (distance to the nearest district centre, type of road etc.) and name of the group if any;
- (b) Brief description of the most important features of the location (size of the village, available social and economic infrastructure);
- (c) Composition, size and organization of the group;
- (d) Full account of products made and prices;
- (e) Count and description of tools in use;
- (f) Source and price of raw materials;
- (g) Marketing questions.

In gathering this information, care should be taken not to create too optimistic an expectation in respect of forthcoming Utundu support. Encouragement to organize better may be given, nothing more. The mere formation into registered co-operative producer groups is a large step for many of them, frequently regarded as a sacrifice which then sparks demands for something in return. That the sacrifice is often real should not be underestimated, because being registered entails various fees, tax obligations and sometimes minimum wage demands. And if these costs are not compensated for the whole economic basis for the enterprise might disappear.

Following the identification survey each group is categorized into workshops, as shown in table 4. This is the first step towards deciding the support to be given by the Utundu programme. In each case the support will be decided in consultation with the Headquarters officer in charge of the programme, who will have the overall information necessary to determine what support is available and most appropriate.

TABLE 4. GUIDELINES FOR CATEGORIZING PROSPECTIVE UTUNDU WORKSHOPS

Characteristics	Group A	Group B	Group C
Location	District or regional centre	Rural centre, village or district centre	Village or rural centre
Physical set-up	Permanent workshop building with electricity from mains; comprehensive set of hand tools, some power tools and machinery and welding equipment	Simple workshop; hand tools only - mix of traditional and modern; some hand-operated machines, partly or mainly self-made	Simple workshop; mainly traditional hand tools, partly or mainly self-made; few hand-operated machines, self-made
Hand-power skills	One or more formally trained in medium-level technical and managerial skills, semi- and unskilled workers and apprentices	One or more informally trained in low-level technical skill; semi- and unskilled workers and apprentices	One <i>fundi</i> (technician or repair man) assisted by one to three relatives (sons); skill mainly inherited
Organizational set-up	Partnership or co-operative	Partnership or co-operative	Individual
Production	Mainly machinery and tools for other small industry units; ancillary items	Agricultural and other implements; repair of same	Agricultural and other implements, although mainly repair; traditional weapon
Material supply and marketing	Material supply through formal trade channels (RTC), marketing through RTC or to order; local and national market	Mainly scrap material; sales to local market mainly to order	Only scrap material; sales to local market mainly to order

As a rule-of-thumb planning indicator, the following figures are used for initial selection and location of prospective Utundu workshops, mainly based on considerations of market size:

Workshop group	Minimum number of families required as base
C	9,000
B	18,000
A	Needs to be determined in each case

Roughly speaking, this means that a maximum of some 300 group-C workshops can be supported, about 15 per region. As the programme develops, and particularly as the raw materials supply and marketing problems are solved, the 9,000 families per group-C workshop planning figure can be decreased. But not before.

Products

Just as the programme builds on existing skills, it also—at least initially—builds on the existing type of production. The aim is to improve working processes and quality. Only when a group has shown itself capable of making such improvements should suggestions be made for other items of production, and other metalworking techniques introduced. The smiths already know what should be made and the regional variations; for instance, what is useful in Karagwe District is not necessarily useful in Tunduru District.

Tools, equipment and raw materials

Lack of tools, and of funds to buy them, is currently preventing the smiths from expanding and improving production. The former is perhaps most serious, because even if the smiths have the money they cannot buy the necessary tools everywhere. Simply by arranging for tools to be available for sale at the respective RTCs, SIDO can give the smiths considerable support. Hire purchase, soft loans or subsidized prices could also be arranged by SIDO with detailed instructions to the regions on the necessary administrative procedures. The Utundu programme does not provide free tools.

In many regions the supply of raw materials is the most serious problem, and must be considered before the supply of tools. At present most smiths rely on collecting whatever scrap they can get, often buying it for about TSh 2 per kilogram excluding their bus fares and other travelling expenses. A first step would be to arrange a systematic search for scrap in the region, e.g. in the garage yards of the various ministries. As a rule SIDO cannot commit itself to carry out the actual material deliveries, but it is investigating the possibility of making a general arrangement with all regional engineers for scrap to be handed over to the Utundu workshops. It is also negotiating with UFI in order to buy their various qualities of scrap. The question of UFI selling semi-finished blanks of various specific steel qualities, shapes and sizes, to be distributed through the RTC, or directly through the regional SIDO officers, is also under consideration. This might take some time to implement, however.

Extension service and marketing

Initially no specific technical advice is foreseen, but at a later stage, e.g. when the semi-finished UFI blanks are distributed, an extension service might be needed. Also when the produce and processes development part of the programme has results to disseminate, this will be combined with extension advice.

Marketing is of the utmost importance. In the initial consolidation stage reliance on the existing very local market is believed to be sufficient. The smiths' claim that raw materials supply is their main problem is taken as a sign of excess demand for their products. When improved tools are introduced, care must be taken to make a market survey. Over-optimistic volume of production as a result of loans must be avoided, and consultations with the RTC need to be made in advance of production for a market outside the district. The RTC generally makes standardization a condition for handling products.

Appraisal of the Utundu programme

Measurement of achievement

The stated aims of the Utundu programme are rather meaningless for a measurement of its success. However, more quantitative measures can be made by referring to the planning indicators in the section on identification and selection of groups. Here a tentative figure of 300 group-C workshops, or 15 per region, is mentioned as a preliminary target for the first phase. Incidentally, this target should in fact ideally be converted into, say, 10 group-C workshops, two group-B workshops and one group-A workshop per region.⁵¹ It is difficult to put time limits on the consolidation of these workshops, but a three-to-five year period perhaps five rather than three seems reasonable.

Measuring consolidation in terms of total production output is impossible although some idea might be obtained by referring back to the *jembe* gap estimates on pages 80-82. For argument's sake, it could be said that 18 per cent of all *jembes* demanded, about 0.4 million, are supplied by the present village blacksmiths. If, at a guess, half these are made by the selected 300 Utundu workshop groups, this corresponds to each making two *jembes* per day which they can easily do (they can make 10 per day per master smith). Doubling this output is therefore easily achieved, assuming Utundu assistance. In 1983 a village production could thus be expected of 0.6 million, or 21 per cent of the projected demand, or a *jembe* surplus production of about 0.5 million, if large-scale production keeps up to 80 per cent of planned capacity.

The consolidation concept needs more precise definition, however. It might be assumed that a smithing group has been consolidated fully (*a*) when it is organized in a way that at least potentially is conducive to the introduction of some interchangeable division of labour between the group members; (*b*) when the primary occupation of the group members is smithing (as opposed to farming); (*c*) when it is capable of earning a surplus large enough for some reinvestment and accumulation of improved tools to take place; and (*d*) when its range of products and repairs tends to become diversified. If the equivalent of 300 village workshops have achieved such consolidation over a five-year period, the first regional implementation phase could be regarded as successful.

No firm cost calculations have been made, but it is foreseen that the Utundu inputs as described will not amount to more than TSh 10,000 per workshop equivalent, or TSh 3 million in total direct costs to SIDO over the next five years. To this could be added another TSh 3 million for administration etc. In other words, TSh 6 million is the maximum estimated for the regional implementation phase. Doubtless the product and process development component of the programme will be costly, but it is unlikely to amount to more than another TSh 6 million, making a grand total for the entire programme of TSh 12 million or TSh 2.4 million per year for five years. Compared with the other approaches mentioned and costed, this would be equivalent to the cost of 50 of the Kienbaum workshops or two of the SIDA workshop clusters.

⁵¹ Regions vary tremendously in many respects, so that the target figures must not be regarded strictly as something that must be implemented for each region.

Testing the programme's assumptions

Admittedly, the Utundu programme has been discussed mainly in terms of an alternative to previous approaches, and in so doing at least two implicit assumptions have been made which need to be tested.

It was assumed that groups of individual blacksmiths would respond to the consolidation aims of the programme, provided the material and institutional opportunities for doing so were improved. Only four groups interviewed had started reacting in this way without the programme. The chances are that not all of the 300 first groups selected will do so, and SIDO must be prepared for a slow and even reluctant response. Efforts to bring about a technological revolution in the rural areas, i.e. converting the pre-industrial type of craftsman's technique into an industrial type, requires high political motivation and readiness to change on the part of the rural population. And an almost absolute trust that what is proposed is not an attempt to exploit the participants, as exemplified in the section on identification and selection of groups.

There is doubt about one of the vital assumptions of the alternative approach. Nevertheless, even accepting that there will be some drop-outs, and that some of the smiths will die with their skills underutilized, the programme seems worthwhile because in all probability all would eventually drop out if the attempt were not made.

Secondly, it was assumed that the general rural infrastructural development would gradually change towards serving the small craftsmen's groups. It would be unrealistic to make this an essential condition of the programme, since the costs would be astronomical, and resort would once more have to be made to the other more direct approaches. Fortunately this is not necessarily so. The kind of infrastructural development needed is very much congruent with the services needed by the peasants in order for them to grow ordinary food crops, e.g. maize. Both maize growing and blacksmithing require reliable access roads, distribution of inputs through district wholesale facilities, bus routes, postal and banking services etc. at least for the kind of production that is to create a surplus that is not to be accumulated elsewhere, i.e. that is supposed to be ploughed back into expanding productive activities in the rural areas.

Such a development needs careful integrated planning. In other words, the Utundu programme presupposes the kind of planning which is actually progressively taking place in the regions of the United Republic of Tanzania, and for which the administrative structure already exists. However, figure II shows that the West Lake region's economic infrastructure was lacking in the kind of services needed by small-holder maize growers and small-scale industries. The information dates from 1974, but the position was practically unchanged when the author visited the region two years later, despite the existence of an integrated, infrastructural development plan for the region.

One instance of a partly ineffective planning effort does not necessarily apply to the rest of the country, but the assumption that integrated rural infrastructural development will progressively take place should be viewed with caution.

However, in spite of these doubts it is not suggested that the Utundu approach be changed. Allowance has been made in this approach for the programme to be somewhat ahead of the desired infrastructural development. The possibility is also

not excluded that the producer groups may be instrumental in speeding up the establishment of infrastructural services at a slightly faster pace than would otherwise have been the case.

Strategy options

If the Utundu programme is taken as the approach most in accordance with the policy objectives of SIDO, a final appraisal must be made of how it fits in with the formal sector policies and plans outlined earlier in this chapter.

There is already one, and there will soon be two, large-scale factories for rural implements. There is untapped capacity in the medium-scale general engineering enterprises, and SIDO has the possibility of promoting others, often of the kind mentioned in the sub-section on farm implements. Further, the Tanzania Agricultural Machinery Testing Unit and the rural craft workshops described in the same sub-section are being expanded.

The first question is of course whether these undertakings might seriously compete for the market with the Utundu workshops. Given the present under-supply of nearly all types of implements in general, the chances are slight. Only rather locally confined competition is likely between the rural craft workshops and Utundu group-A workshops. Improved distribution would remove this possibility; but, distribution being a real problem, such competition should be taken into consideration when the location of rural craft workshops of group-A workshops are planned.

The possibility of a market conflict between the *jembe* production of the large-scale factories and the Utundu workshops by 1983 was mentioned earlier. This eventuality needs to be considered because *jembes* may once again be taken to illustrate the various strategy options in competition between large and small industries. Fortunately, there are many options to avoid destructive competition, but they should be considered in advance of possible conflicts:

(a) The large-scale manufactured products can be exported, presupposing that they are competitive on the world market in terms of quality and price;

(b) The large-scale factories can diversify into other products. This may not be the most profitable thing to do, but the sooner the large-scale factories or means of production start diverting from simple mass-produced import substitution, the sooner the national technological capacity will be strengthened;

(c) The small-scale enterprises may try to diversify, simply because their productivity may be too low to compete. Their choice of alternative products is limited; they may have to be content with repair work, subcontracts or ancillary production.

The chances of medium- and small-scale industries competing are less. The medium-scale industries do not make simple implements, like *jembes*. They may rather come into conflict with the large-scale factories in the manufacture of plough products. In such cases, options (a), (b) and (c) again seem valid.

Option (c) appears to be the least attractive one. Given the marketing difficulties, it is important for the viability of the small- and medium-scale enterprises that they produce as large a variety of products as possible. A regional division of labour between more specialized enterprises might be preferred for reasons of

efficiency and cost; but such division presupposes intra-regional and interregional integration of trade links, which so far are insufficiently developed. This reasoning also lies behind the proposal that the smithing groups should make craftsmen's tools and household utensils as well as farm implements.

Option (b) is probably the best, seen from all points of view other than the strictly economic. It requires that the large-scale factories renounce some of their advantages of scale, i.e. the very argument and basis for their size in the first place. It may also be argued that the medium-scale enterprises are better suited to make innovations and adaptations, in other words, that these enterprises should be assigned the main diversification role.

One particular type of large-scale product diversification would be very important, and has already been mentioned, namely the production of semi-finished blanks. This would answer both the desperate need of the small-scale units for raw materials and the need of the users for adapted shapes of implements. It would, however, leave the large-scale unit with less value added per ton of iron. UFI is considering this possibility.

The last option, option (a), may after all be the most inviting, provided the condition of world market competitiveness is met. This has not been assessed, but it is something the National Development Corporation management has under consideration. In fact, this appraisal lacks a detailed comparison of cost effectiveness between the various scales and technologies dealt with. The discussion of options has been based rather on broader qualitative arguments. Nevertheless, the framework for a proper choice of technology assessment has been made here, and without this framework such an assessment is of little value.

Recommendations

It is recommended:

(a) That the Utundu programme be initiated as outlined in the sub-section "Details of the Utundu programme" (p. 94). Group-B and group-C workshops should be consolidated in rural centres and villages.

(b) That SIDO, the Tanzania Agricultural Machinery Testing Unit, and the rural craft workshops should co-ordinate the establishment of medium-scale production units in regional and district centres. A medium-scale farm implement enterprise should be encouraged by SIDO in regional centres, with Utundu group-A workshops in district centres.

(c) That new large-scale factories should be considered only following a careful assessment of technology and a world market survey.

To sum up, on the one hand, the Utundu programme seems to be the fastest way of increasing the supply of rural means of production. It builds upon underutilized skills and capacities. On the other hand, the programme's expansion depends on integration with seemingly slow infrastructural development. Its likely contribution to the increased supply of implements is thus limited. Medium-scale units have the advantage that much of the infrastructural requirements for their production already exists in many regional and some district centres. Some initial import of skills from abroad seems required, however. Also the necessary machinery will add substantially to the national import bill. But this is an area where aid agencies could be encouraged

to invest, e.g. the "thorough direct" approach or through "sister industry" arrangements.

Whatever cannot be supplied by recommendations (a) and (b) should be topped up by expansion of existing large-scale units. This topping-up needs improved distribution in any case.

The success of the Utundu programme, if adopted, would depend on more than just acceptance by SINDO. National policy decisions on overall industrial and infrastructural development would also need to support the programme.

Conclusion

Although this case study of the rural implement supply sector in the United Republic of Tanzania may have little specific value for other developing countries, it may have some general value for a discussion of industrialization in relation to integrated rural development. It demonstrates that careful surveys may reveal, contrary to what is often said, the existence of a manufacturing capability for some means of production in the rural areas of developing countries. The activity may be dispersed and relatively obscure, for historical reasons. But the suppression of the trade, which was not achieved by colonial administrations, may be in the process of being achieved today through the systematic efforts of the formal sector to penetrate the rural market, and through an infrastructural development policy that places rural productive activities at a disadvantage. In other words, today's independent developing States may find themselves achieving by economic means what the colonial State did not manage to do by administrative means.

It is not argued that the village metalsmiths and tinsmiths should be promoted for any nostalgic or romantic reasons. On the contrary, these craftsmen, if supported, constitute a basis for rural industrialization which would otherwise be wasted. And by rural industrialization is not meant the establishment of any industries in rural areas; it means the establishment of enterprises that are linked backward and forward to other productive activities within the rural communities. The smiths are linked forward to agriculture; and their repair potential is as important as their making of implements.

This case study also illustrates a very important possible linkage between large- and small-scale industries, through the provision of semi-finished blanks to the rural smiths. It is an argument as well for an indirect approach to the promotion of rural industries: an integrated infrastructural programme geared to the needs of small-holder farms and small-scale enterprises is the best means of promoting both types of productive activity. The direct support approach should at least keep pace with the indirect. The snag in depending on small-scale units is that they need large-scale, widely dispersed support efforts to show any significant effect.

One final point should be made about the advantages and disadvantages of small-scale units and their technology. Medium-scale units established at points of existing infrastructural concentrations may be more feasible in the short term, while the common conditions of production are simultaneously improved in the rural areas.

Annex

LIST OF DOCUMENTS

- ID/WG.257/1 Industrialization of rural areas. Case study on establishment of rural industrial estate, Foya, Lofa County, Liberia
D. Skinner, L. Randall and L. Bruyntjes
- ID/WG.257/2 Case study of rural industrialization in Kakamega District, Kenya
R. L. Saluja
- ID/WG.257/3 From the village to the global order. Elements in a conceptual framework for "another development"
P. Wignaraja
- ID/WG.257/4 Industrialization in relation to integrated rural development in India, Nepal and Pakistan
Luong the Sieu
- ID/WG.257/5 Industrialization in relation to integrated rural development with reference to Bangladesh
M. T. Haq
- ID/WG.257/6 Kenya rural industrial development programme: its role as an extension service programme
P. Kongstad
- ID/WG.257/7 The role of industrial co-operation in rural development; experience of Poland
T. Kowalak
- ID/WG.257/8 Promotion of rural implement manufacture in Tanzania
J. Müller
- ID/WG.257/9 The People's Collective Industries of Jalisco: a case study of rural industrialization in Mexico
S. A. Ferrer
- ID/WG.257/10 Role of rural industrialization in integrated rural development in Papua New Guinea—problems and strategies
E. M. Wijenaike

- ID/WG.257/11 Rural industrialization in Costa Rica. Case study of the co-operative union URCOZON in the San Carlos region
R. Escoto
- ID/WG.257/12 Basic issues, macro policies and components of a programme of development
P. K. Das
- ID/WG.257/13 Industrialization in relation to integrated rural development: review of policies and programmes in India
S. E. Joseph
- ID/WG.257/14 Rural industrialization in developing countries: some policy issues
S. V. Sethuraman
- ID/WG.257/15 Issues to be considered by the Expert Group Meeting on Industrialization in Relation to Integrated Rural Development
M. V. Hogg
- ID/WG.257/16 Provisional agenda and work programme
- ID/WG.257/17 Provisional list of participants
- ID/WG.257/18 Annotated agenda
- ID/WG.257/19 Rural industries and rural non-farm activities development in Iran
A. Heydari
P. K. Das
- ID/WG.257/20 Industrialization in relation to integrated rural development
Food and Agriculture Organization of the United Nations
- UNIDO/ICIS.52 Industrialization in relation to integrated rural development with selected reference to Indonesia, Papua New Guinea, the Philippines and Thailand
UNIDO secretariat

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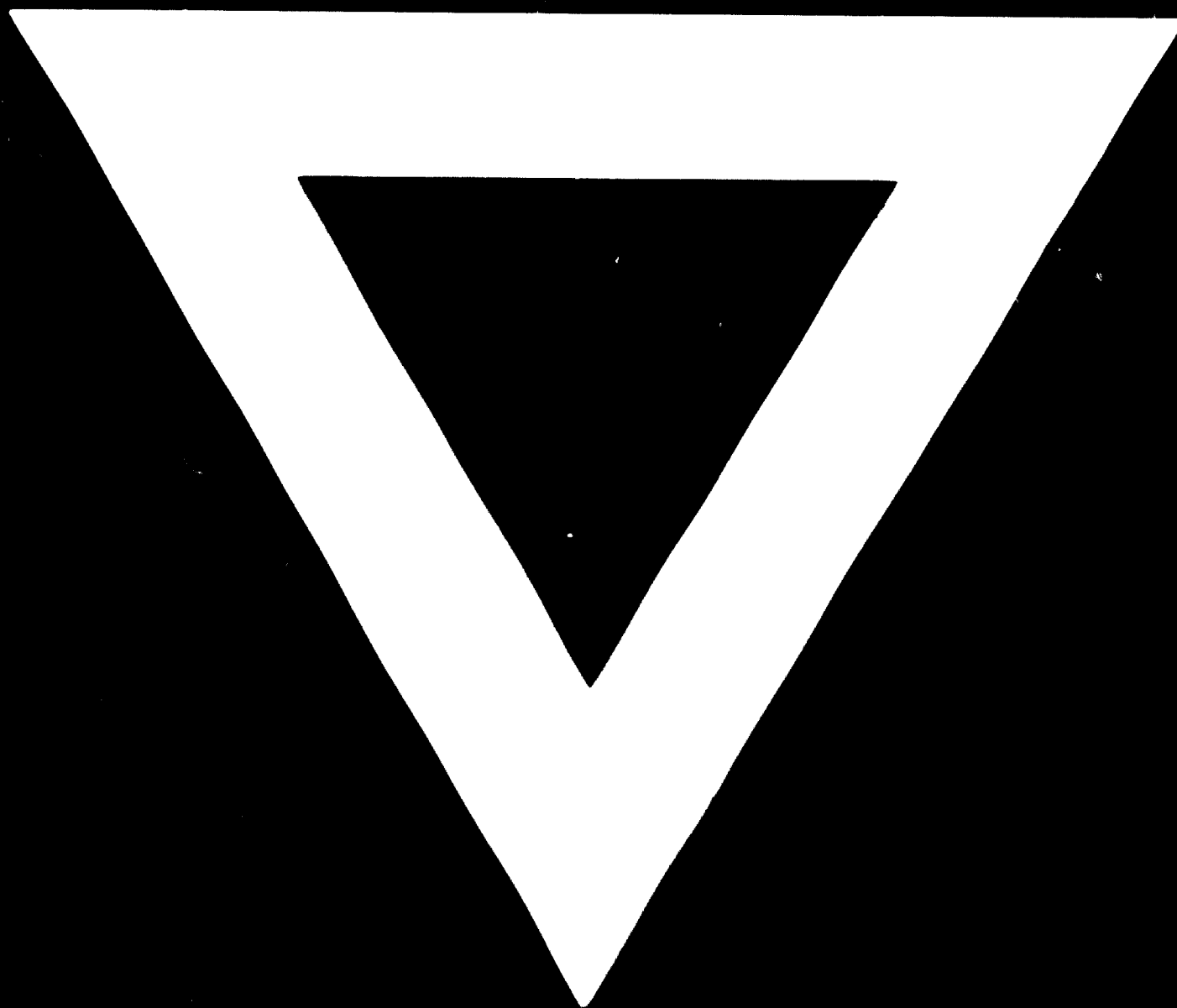
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