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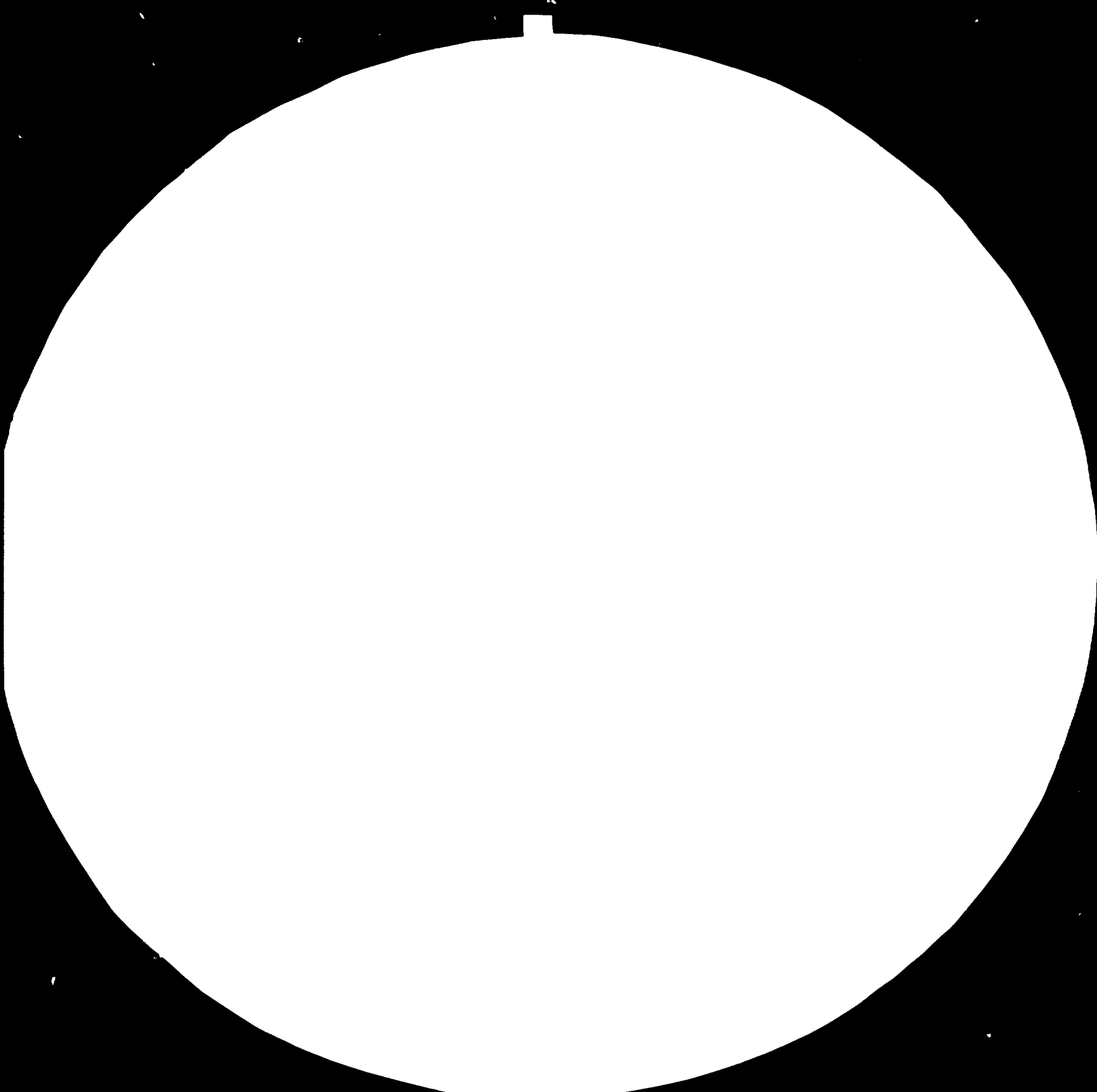

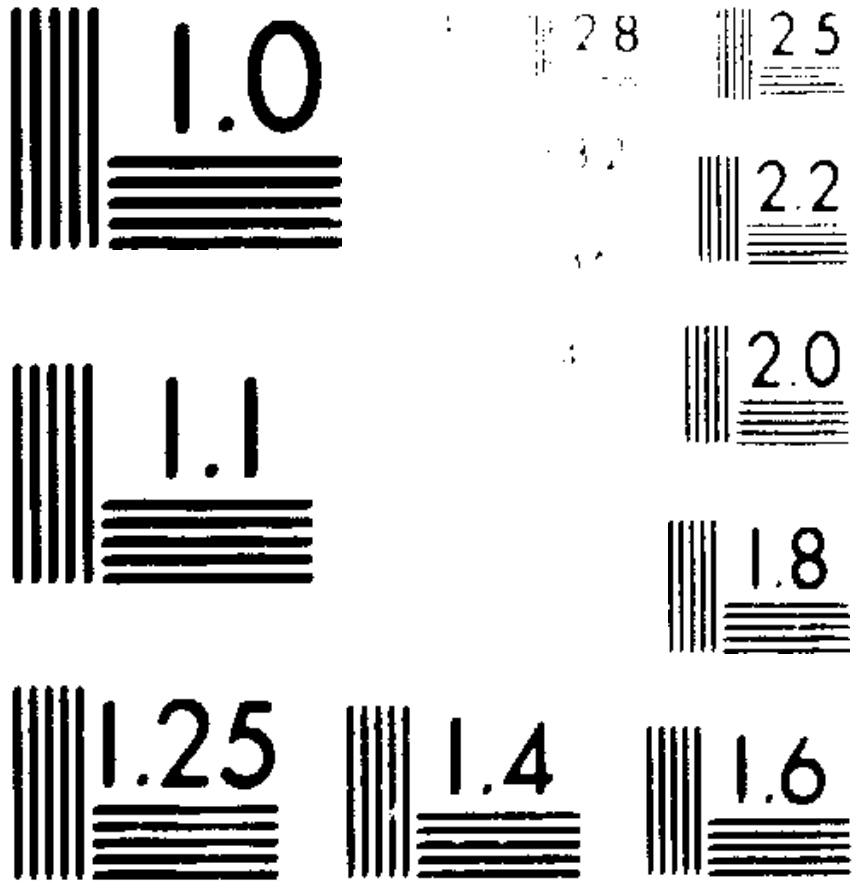
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BACKGROUND PAPER FOR AGENDA ITEM 5g, UNIDO IV .

# Industrial Policies and Measures to Achieve Rural Development and Self-Sufficiency in Food Supplies in Developing Countries

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CONTENTS

## INTRODUCTION

### 1. The Opportunity of UNIDO IV

The Fourth General Conference of UNIDO has created an opportunity for review and reflection on the progress of development in rural areas and the role of industrial activity in such development. This is timely because of the profound disquiet and concern which is now almost universal amongst observers and practitioners of development (let alone those who are to be developed) at the inequities of the pattern and nature of development so far. Rural development is a pressing issue today because it addresses the serious and growing imbalance within societies in developing countries; moreover it addresses directly the needs of the majority of the population in these countries.

Therefore the opportunity exists at UNIDO IV to recognize the increasing imbalance and inequality and to identify those practical steps which can be taken to reverse this trend. The conference has already, under Agenda Item 4, examined the outcome of the broad development initiatives in the two development decades and measured progress against the particular objectives set at the Second General Conference of UNIDO at LIMA in 1975. The window which is now open allows a reconsideration of the aims and objectives for rural development and our highlighting of the major problems which have constrained progress to these ends. In looking forward into the period 1985-2000, which is our major purpose, we can thus focus on the priorities necessary to remove these constraints. We can also take into account, when planning new industrial initiatives, recent experience with techniques and instruments of intervention/assistance by external (*) agencies.

Before moving on to consider the issues and problems of rural development and to frame proposals for policies and measures of assistance it is perhaps necessary to recall that in considering rural development we are not discussing merely a sectoral category of programmes and projects with special characteristics which are optional extras in a national development plan.

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(*) i.e. external to the rural area and society concerned

In most developing countries the process of rural development lies at the heart of national development mechanisms and activities and their interrelationships; the rural areas are the fabric of the developing countries; they contain not only the majority of indigenous resources, but also a prime means of utilizing these - through the rural population itself.

The idea of influencing the pattern and nature of development in rural areas has become increasingly attractive to planners, decision-takers and to development activists as dissatisfaction with the consequences of recent development processes has grown. The more popular this subject matter has become however, the more the issues and processes involved have become clouded by the rhetoric and explanations offered by observers and practitioners alike. Research into rural development has produced all-embracing definitions which encompass every aspect of human society and human activities; due regard has been paid to the diverse physical environments and landscapes inhabited by man, together with the multiplicity of dynamic relationships and reciprocal interactions between these numerous elements. The resulting debate has made for no little confusion amongst determined interventionists - be they politicians, planners, officials or their advisors.

The fact remains that, rural development, its characteristics, causes, processes and participants do pose complex problems which defy simple solutions. Clearly in approaching the subject the perspective which we adopt is of overriding importance. Since the aims of this paper are to discern the role and contribution of industrial activity within rural development processes and to establish an order of priorities for constructive intervention in these processes a clear view of the basic issues in rural development as seen from our particular standpoint is of paramount importance.

## 2. The Perspective of Two Development Decades

Understanding of the nature of rural development has increased significantly in the last two decades and our concern at the inequities of development has been reinforced by events in this period. The rate of urbanization has increased at an unprecedented rate; this has increased the polarization and segregation of socio-economic activities within these countries. The emergence of economic dualism in developing economies has allowed the creation of modern sectors (largely urban) in parallel with traditional rural sectors. Attempts to redress this state of chronic imbalance have often made it worse. Satellite modern agricultural projects have extended the reach of the monetized economy into rural areas but have rarely been integrated with their immediate locality; development projects targeted on the traditional sector have too frequently strengthened the position of the rural elite and increased the number of landless labourers seeking employment. Increased awareness and greater mobility amongst the rural population have generated additional migration to urban areas. Yet, despite this rural to urban migration, the absolute number of rural poor and their relatively poverty(*) have increased.

The incidence and extent of rural poverty have become more widely recognized in the last two decades and a proper concern for the distribution of productive assets and income earning opportunities has come to the fore. At the same time economic growth in many developing countries, especially in the least developed countries, has been so disappointing in quantity so as to frustrate attempts at redistribution within those countries; many developing countries themselves have increased their indebtedness and hence their dependence on the richer countries of the international community.

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(*) There is some evidence of an increase in the absolute poverty of the rural poor in some developing countries, especially in Asia. See . Griffin and Azizur Rahman Khan, Poverty in the Third World: Ugly Facts and Fancy Models World Development. Vol.6, No. 3, P.295-304.

3. The Lima Declaration and Plan of Action

Within the overall target, set at the Second General Conference of UNIDO, of increasing the share of the developing countries to at least 25 per cent of total world industrial production by the year 2000, the Lima Declaration and Plan of Action laid emphasis, inter alia, on the principles of full utilization by developing countries of their natural resources and of the human and material potential at their disposal. A premium was placed on self-reliance in the efforts by developing countries to realize their full potential. It was envisaged that national industrialization policies would lay emphasis on the encouragement and support of small, medium-scale and rural industry and industries which fulfil the basic needs of the population and which contribute to the integration of different sectors of the economy. Similarly an equitable distribution of the benefits of industrialization among all sectors of the population was strongly recommended. The Plan of Action called for the promotion of an integrated industrialization process based on the potential of each country with the object of achieving the highest degree of interaction between industry and other sectors of the economy, particularly agriculture. Thus the Conference drew attention to the complex of interrelationships and mutually dependent elements in development strategies and the integral role for industrial activity in the rural development process.

4. The Ultimate Objective

In 1979 the World Conference on Agrarian Reform and Rural Development defined the ultimate objective for rural development as the 'transformation of rural life and activities in all their economic, social, cultural, institutional, environmental and human aspects. National objectives and strategies to achieve this transformation should focus on the eradication of poverty, including institutional improvement, and be governed by policies for attaining growth with equity, redistribution of economic and political power, and peoples' participation'.(*) At this stage we have to bear

(*) WCARRD Declaration of Principles and Programme of Action, Rome August 1979 endorsed by General Assembly resolution 34/14 of 9 November 1979.

in mind the magnitude of the transformation which is the ultimate objective. Developing countries' populations amount to over two thirds of the world's total; with a few exceptions in Latin America and the Middle East, the majority of the population in these countries lives in rural areas and derives its livelihood, such as it is, from rural economic activities. The majority of natural resources possessed by these developing countries are located in rural areas yet the rural population have been marginal to the pattern of development created in the last two development decades.

Amongst the rural people the pressure for change is increasing as rising expectations and increased awareness flow from the spread of education and the mass media. This pressure for change has been reinforced in the last two development decades by the economic plight of the rural majority. UNIDO IV is therefore faced with the challenge to help reverse this trend by providing new opportunities to break the self perpetuating cycle of poverty and to release the initiative and potential of many of the people who live in rural areas.

Nowhere is the need for change more keenly felt than in the production of food. Just as agriculture itself is central to rural development, so the production of food is central to farming activities. Despite significant progress in some regions of the world, notably in India in recent years, many developing countries are unable to the demand for food from domestic production. This has come about through the relative neglect of agriculture in development policy For example in Africa the outcome has been a

drastic deterioration in supplies, severe shortages of food, decline in per-capita consumption to levels below nutritional requirements, large post-harvest food losses, and rapidly increasing dependence on food imports over the last two decades. It is not surprising therefore that self-sufficiency in food has become a high priority.(*)

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(*) See Lagos Plan of Action

## SECTION ONE

## ISSUES, PROBLEMS AND POLICIES TO DATE

### The Need for an Area Focus

In reviewing the development process in rural areas and in particular attempts to harness rural resources to these changed priorities, an overrriding need is evident to integrate external interventions with local initiatives and ambitions not only at the level of individual project implementation but also in the whole process of industrial development planning. With rural development projects because of the scale and complexity of the issues involved, the temptation has been to rely on centralized planning, to concentrate resources on large capital and management intensive projects, and to trust the demonstration effects of such model projects. However the paucity of 'external' resources available for rural development, when set against the intertia and complexity of local realities, serve to emphasize just how carefully any external initiatives or responses have to be oriented to local circumstances and local participants if the total inputs are not to be frustrated in their aims. In rural development the processes are not simply the function of abstract economic relationships - there are also the social, cultural, institutional, environmental and human aspects of a particular locality which need to be taken into account. An 'area focus' for each project is therefore a sine qua non in implementing a strategy for rural development. New initiatives must be borne of a particularly rural locality on a scale and with a timing and a nature that is appropriate to that locality, rather than be imposed on it from outside the rural society in that place.

The University of the Rural 'State'

There are a number of universal and intrinsic characteristics of the rural 'state' which must be clearly understood and continually borne in mind whilst examining the basic issues within rural development processes. These are: first, the importance of location. Rural societies and activities need to be examined within the context of their location in relation to the prevailing centres of socio-economic activity within the region to which they belong. Rural areas are by function part of the periphery and their proximity to one or more centres of activity within the hierarchy of settlements is a crucial determinant of the nature of the development process in those rural areas. Rural areas are inextricably linked to urban places in diverse ways, and at many levels. These linkages not only influence the movement of people, goods and ideas but also constrain their use and development.

Second, the geographic character of a rural area, its landscape, climate, homogeneity or diversity, will influence the pattern and nature of activities and settlements in that area and its relationship with its neighbours. Third, the natural resource endowment of a rural area and the ability of its inhabitants to exploit those resources will determine not only the nature of human activities and their orientation towards external influences but their wealth and power, the strength of linkages with market centres and neighbouring regions, and their dependence on trade for essential inputs.

Last and not least, the nature of a society inhabiting a rural area, its history and culture, its homogeneity or diversity as well as its structure will profoundly influence its relationships with central places and other regions as well as its own internal development process.

These characteristics of the rural 'state' amount to a distinctiveness of area and the human response to that area which distinguishes it from other areas. Since rural development is concerned with changing human activities and their relationships, this distinctiveness of area is a major influence on development processes. Recognition of this distinctiveness is fundamental to the success of external interventions in rural development process.

## The Characteristics of Urban Places

At this point because so much confusion has arisen over the term urban, it is appropriate to establish its meaning within this paper. Urban places are those places which are distinguished by their functions, not by their size or administrative status - although there is some relationship between the range and diversity of urban functions performed in a place and its size. Urban places are places of concentration of human activities; they tend to develop at meeting places, at market places, crossing places, entry points; they provide a range of specialized services - retailing, wholesaling, trading, financial, commercial, administrative, judicial - of varying degrees of sophistication and of choice according to their degree of centrality and the size of hinterland they serve. Such central places inevitably attract manufacturing and processing activities, which obtain some or all their essential inputs from the surrounding rural areas and supply those areas with the output. Urban places range from large villages on the one hand to metropolitan conurbations on the other, in a complete hierarchy of settlements. Lower order settlements (towns and villages) are considered part of rural areas and cannot be regarded as separate in terms of rural development processes in which they play a pivotal role.

## The Processes of Centralization

Development involves the creation of a hierarchy of settlements providing services and undertaking activities for themselves and their rural hinterlands. The meteoric rise of the 'primate' cities in developing countries has produced a distorted, top heavy hierarchy, which merely serves to drain the rural areas of their resources and amass a disproportionate share of national resources so as to dominate the national space economy. This polarization does not generate growth in rural areas

nor serve the interests of the majority of the population; it represents an excessive concentration of wealth and power in the hands of a minority and too few central places. Development in many countries over the last two decades has produced a pattern of growth which is over centralized and damaging to the prospects for a more equitable distribution of benefits of development. In large measure this has arisen from over centralized planning and administration both by national governments and by international agencies. As governments have assumed an increasing responsibility for the provision of essential services, health, education and basic needs, the administrative mechanisms which they have adopted to distribute services and extend their control to the entire country have greatly reinforced the centralizing tendencies already present in the economy through market forces and the control of those forces by a small minority. The same risk arises with rural development policies, especially where the implementation of these policies relies heavily on city based institutions and agencies.

The Basic Issues in Rural Development

What then are the basic issues with which we are concerned in rural development? Rural societies and their activities are close and sensitive responses to their environment; they are directly engaged in utilizing indigenous natural resources and are usually well adjusted to that task. Rural societies and activites tend to be diffuse, often over large areas, sometimes with great variety in their situations and their responses. The manner in which these societies and activities are organized is well structured, clearly organized with strong traditions. Though often widely scattered the total numbers of people are large; the total mass therefore is great and so is the resistence to change. Rural societies tend to show marked disparities in the distribution of wealth; they are often characterized by the presence of small minorities,monopolizing power and wealth within a stable or slowly changing structure,and large numbers of poor - sometimes even the majority. The opportunities for an individual

to accumulate savings, to change his social position, and to gain access to additional productive assets are few. For the majority the aim is to achieve basic needs, to maintain their position in society or at worst to survive from one day to the next.

The Central Role of Agriculture

Rural societies and activities are predominantly agrarian. The cultivation of crops for food and the provision of other material requirements are the most basic activities around which rural life is organized. In traditional rural societies and farming the demands of cultivation largely dictate the distribution of settlements and absorb the majority of the labour supply available; staple food crops predominate in the cropping pattern. Agriculture is subsistence oriented and such traditional rural areas are frequently self-reliant in large measure.

Within the last two decades the agricultural sectors in many developing countries have made significant progress. Improvements in crop yields, through improved seed varieties and use of fertilizers, better cultivation practices, the expansion of irrigation and mechanization have made cultivation more productive; growth rates in agricultural output by developing countries in aggregate have achieved 2.6 % average annual rate*. There have of course been significant variations between different regions and countries, and within individual developing countries. The relatively high growth rates in agricultural output also need to be seen against high population growth rates in many developing countries; nevertheless overall some modest increase in agricultural output per head was registered in the 1960's and 1970's.

Within this considerable achievement of aggregate growth, some countries and some regions have progressed much more than others; in particular large numbers of poor in the rural areas have experienced what some observers have called a 'crisis of poverty'. Various explanations have been offered;

* Source: Statistics and Survey Unit, UNIDO Division for Industrial Studies.

the major causes have been analysed in the context of Asia by Keith Griffin with assistance from Ajit Kumar Ghose(*). The weight of the evidence is that the crisis of poverty is primarily a distributive crisis through growing inequality in the distribution of incomes rather than the cyclical instability of food supplies or high population densities and growth rates having strong negative effects on agricultural growth performance. It is revealing to note the views that agricultural production has recently become largely stagnant despite the 'green revolution':

despite growth of per capita income and per capita agricultural output large number of rural people in Asia have experienced absolute impoverishment. In some areas real wage rates for agricultural activities have declined and many knowledgeable observers believe rural 'unemployment' to have increased almost throughout the whole of Asia. More substantiated evidence reveals the increasing proportion of landlessness and the rapid growth of a rural wage earning labour force. It is relevant to recall at this point that Prof. Amartya Sen(**) has argued convincingly that it is not food availability per head which gives rise to famine so much as food entitlement, through a decline in terms of trade vis-à-vis food or alienation of land or a wage earner being unable to sell his labour.

Perhaps the most debilitating consequence of poverty is hunger, not only in times of famine but through long-term malnutrition. Since rural incomes have tended to be distributed very unequally and the living standards of the lowest income groups either have remained unchanged or have deteriorated, the problem may be said to be one of an inappropriate pattern of growth rather than inadequate growth per se(***). In Asia the high income elasticities of demand for food have led demand to outstrip supply. In Africa a series of natural disasters and inappropriate policies have seen harvests fall alarmingly. Two consequences have followed, rising food imports by countries at a time when their resources were already stretched by rising costs of energy imports, and inflated domestic prices for food which have hit the poor who tend to spend a higher proportion of total income on food anyway.

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(*) Keith Griffin and Ajit Kumar Ghose - Growth and Impoverishment in the Rural Areas of Asia. World Development 1979, Vol. 7, pages 361-383.

(**) Prof. Amartya Sen: The food problem and policy. Third World Quarterly - July 1982, Vol. 4, No. 3, p. 457.

(***) Keith Griffin ibid.

FAO have stated the food supply problem in terms of requiring a 60 % increase in agricultural output over 1980 levels by 2000 to meet demand from the growth in population alone. Cereal imports alone by developing countries are expected to double. The number of seriously undernourished has been estimated at over 600 million by the end of the century.(*) Developing countries need to double their food and agricultural production by then, but better distribution would be required to deal with undernutrition and this could not be sustained without better income distribution.

Agricultural development to date has been concentrated in the modern sector. Growth has been achieved with capital-intensive methods in support of technological innovations such as the high yielding seed varieties, the spread of irrigation and the use of tractors. In each case these innovations have been accompanied by greater inequality and poverty in many developing countries.(**)

A striking illustration of the impact of modern agricultural techniques can often be seen in the large plantation established either on virgin land or else through consolidations of land holdings. These highly capital intensive operations produce large volumes of high quality produce, often for distant markets, under sophisticated marketing arrangements. They are important generators of scarce foreign exchange and have received priority in allocations of scarce resources. Yet despite their location in the heart of a rural area, they remain enclaves of carefully managed intensive agriculture, largely independent of their immediate rural surroundings, yet heavily dependent on urban sources of supply of inputs and services.

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(*) Director Generals Programme of Work 5 Budget for 1982/83. FAO 1981

(**) Keith Griffin ibid.

It is greatly to be regretted that in many developing countries attempts to break this pattern of capital intensive agricultural development have failed to reform traditional farming systems to any significant extent. Where progress has been made it has merely been to create enclave -type 'demonstration' projects which have had limited spread effects. Attempts to reach small farmers with extension services and credit facilities have tended to benefit the larger and more responsive farmers from middle and upper income groups. Where inputs are rationed or allocated by non-price mechanisms, 'access' to the allocating institutions or officials under the flow of inputs rarely seems to extend to the poorer groups. Fundamental reforms of land tenure or improved access to other productive assets in general have made little progress.

It goes almost without saying that this process of selective modernization has not only left the majority of the rural population untouched, but it has also discriminated between those rural areas enjoying comparative advantages of location and resources endowment and those more isolated and backward areas. Cash crops have brought greater specialization in farming but have given a greater importance to improved communications and orientation towards market centre. While increased trade with more distant markets has brought integration of the rural economy with the wider economy for favoured minority, it has imposed an additional penalty on the impact of isolation of rural areas from such centres of influence and opportunity.

Non-Farm Activities in Rural Areas

While agriculture clearly plays a central role in rural socio-economic activities being the kernal of local productive activites, its predominance though marked in traditional rural societies is by no means complete. Even the more isolated and backward rural areas have a surprising range and quantity of non-farm activities within their economy and, as development gathers pace, the introduction of greater specialization of labour and the strengthening of economic linkages with first nearby,and ultimately more distant market centres gives rise to a significant expansion and diversification of non-farm activities. Industrialization involves a progressive construction of production capacity, involving different combinations of power, know-how and technological skills, together with the enhanced capability to utilize these inputs to meet the market's requirements. Much of this capability has to be created through learning by doing over a substantial period of time both at managerial and 'shop floor' levels. This progressive development can clearly been seen in rural industrialization where the dispersal of activities around and away from the central market place reveals many industrial activities at different stages in this evolutionary process. Household and 'unorganized' or informal industrial activities are at one extreme,and highly specialized, systematically organized enterprises subcontracting to other enterprises or serving distant export markets at the other.

Non-farm activities in rural areas supply a range of goods (both capital and consumer) and services to agriculture and to the rural population, contributing both directly to agricultural output and to the living conditions of the rural population. Their contribution is therefore central to the creation of increased production capacity and to enhanced capability to utilize that capacity in primary,secondary and tertiary sectors. Non-farm activities provide a major source of employment for the landless

and other rural wage earners; many of the poorest groups of the rural population are entirerly dependent on them for their livelihood. For many others non-farm activities are a source of supplementary income. In the context of increasing rural poverty and rural unemployment/under-employment, non farm activities offer substantial alternative employment and income-earning opportunities even in more backward rural areas. Furthermore the potential for growth in non-farm activities and their tendency to concentrate in central places (such as larger villages and towns) localizes employment opportunities for the increasing numbers who lose their means of livelihood with the modernization of agriculture - thus effectively decentralizing urban growth.

For evidence of the importance of rural non-farm activities we have to rely on employment data rather than income or value added data which are scarce and more unreliable than statistics for employment. The evidence available from national censuses and various regional and rural surveys was reviewed exhaustively by Chuta and Liedholm in 1979.(*) This drew on information from 18 developing countries where relatively recent data was available and revealed that over 20 % of the rural labour force (excluding that in the larger rural towns) was primarily engaged in non-farm activities. Taking into account the inevitable undercounting which is endemic in such surveys (especially concerning women's participation), this reveals the extent of the dependence of the rural workforce on this sector. Data on secondary employment in such activities is not generally available, but Chuta and Liedholm estimated that 10-20% of the rural male workforce were so engaged. They concluded 30-50 % of the rural labour force in developing countries found employment (both primary and secondary) in non-farm activities in rural areas. This was supported by the limited data available on rural incomes, where non-farm earnings accounted for over 20 % of total rural household income.

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(*) Luyinna Chuta and Carl Liedholm: Rural Non-Farm Employment. A review of the State of Art. MSU Rural Development Paper No.4 1979 Dept. of Agricultural Economics. Michigan State University.

In addition Chuta and Liedholm's analysis threw some light on sectoral composition of rural non-farm activities. The most important subsectors were manufacturing, services and commerce in terms of primarly employment in rural areas. The ranges were:

| | % total rural non-farm employment |
|---|---|
| Manufacturing | 22 - 46 % |
| Commerce | 11 - 35 % |
| Services | 10 - 50 % |
| Construction, transports, utilities | under 25 % |

They noted the relative importance of rural, as opposed to urban, manufacturing; the evidence indicated that employment in small, rural manufacturing often exceeded that in large urban manufacturing firms. For example:

| | Rural manufacturing employment as % total manufacturing employment |
|---|---|
| Sierra Leone | 86 % (Liedholm and Chuta, 1976) |
| Bangladesh | 70 % (Bangladesh IDS 1979) |
| Malaysia | 63 % (IBRD 1978) |
| India | 57 % (IBRD 1978) |
| Korea | 32 % (Korea 1972) |

Clearly there are substantial variations in this pattern between individual countries and within countries. However the size of even the smallest rural manufacturing sector is such that these activities are clearly of great significance within the national economy as a whole and the rural economy in particular, and proper provision must be made in planning and the allocation of development resources to realize their growth potential if a distorted pattern of economic development is to be avoided.

It is necessary to examine the characteristics of these rural industrial activities and their role in the rural and national economy before considering how development assistance can best be organized to further their growth.

It is necessary to examine the characteristics of these rural industrial activities and their role in the rural and national economy before considering how development assistance can best be organized to further their growth. A detailed breakdown of rural industrial products is given in Appendix I; this is based on the categories of product opportunities for rural industrialization programmes identified by the Expert Group Meeting on Industrialization in relation to Integrated Rural Development in Dec. 1977. *

Many of these products are produced by traditional 'artisan' type industries, with some being undertaken on a part-time or seasonal basis. Most production is carried out on a small-scale, with low level technologies using relatively low capital and high labour intensities; many enterprises show some specialization in production. Rural enterprises are typically managed by the owner-proprietor, who is normally an imitator not an innovator. Such entrepreneurs rarely have had any business training, so business practices and practical skills within the enterprises have been learned 'on-the-job' and much of the labour is under an 'informal apprenticeship'.

The majority of production in rural enterprises is organized in small-scale batches and many items are made to order, even 'custom made'. Such enterprises process locally produced raw materials, manufacturing simple consumer goods, or producing simple tools and equipment. They serve quite small market areas with a limited range of products. Competition is normally restricted and is fought on price; rurally produced goods are often uncompetitive in quality, consistency, standard of design, and performance with goods imported from larger urban settlements more open to competition and improvements in technology. Rural enterprises are protected to some extent by their isolation, limited infrastructure and poor communications. Their distribution is dispersed in response to local demand but even so shows some sensitivity to centering tendencies within the economy and most are found in the larger villages or rural towns.

* UNIDO Vienna 12-15 December 1977. Report published United Nations New York 1978, ID/215.

Rural industrial enterprises, above all, are closely integrated with the local economy, holding an established place with local society and contributing significantly to a rural areas' capability to be self-reliant.

The contribution of rural non-farm activities to the economy is a matter which has generated much speculation over the last two decades in the absence of empirical studies. However research investigations have slowly revealed the net worth of these activities and hence their future prospects. Perhaps the most important issue has been the efficiency with which rural enterprises utilize their economic resources especially in relation to larger enterprises. The issues are too complex to be discussed in detail here but Chuta and Liedhom's review of the art(*) provides helpful guidance on key questions. In summary the weight of the evidence is that existing rural enterprises are generally more labour-intensive and smaller scale enterprises possess a higher labour capital ratio than larger scale enterprises (producing the same products). Average productivity of labour is lower in smaller scale enterprises than larger, although this may not be so important in rural areas where labour is not normally a resource constraint. There are divergent opinions on whether rural small-scale enterprises use the scarce factor capital as efficiently as do other enterprises and the evidence is not conclusive. The majority of the evidence supports the view that smaller enterprises tend to achieve a higher productivity of capital than do larger, more capital intensive enterprises.

The growth potential of smaller scale rural enterprises is of course crucial to the longer term contribution of non-farm enterprises. Here too substantial evidence has been accumulated in recent years; a most helpful review of these dynamic aspects is contained in Anderson's discussion(**) of the growth process. In summary household or cottage industries tend to

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(*) Chuta and Liedholm ibid.

(**) Dennis Anderson: Small Industry in Developing Countries: A discussion of the issues. World Development Vol. 10, No. 11, 1982, p. 913-948

decline in terms of employment as industrialization proceeds, while small workshops and factories emerge rapidly in response to growth in markets (here the growth in agricultural output is obviously a major determinant of progress for rural enterprises). Larger scale operations tend to predominate as development proceeds but much of their growth is rooted in the expansion of smaller enterprises. The key issue of the supply of enterpreneurial skills to mobilize and apply the available resources to commerical opportunities is fundamental to any expansion of the rural small enterprise sector. While growth in demand in many developing countrie has generated a remarkable response in entrepreneurial activities and the supply of entrepreneurs would seem to be elastic, Anderson raises important questions about the efficiency of the entrepreneurial response. This can perhaps best be seen through the process of growth of an enterprise from a tiny, family run business into a first small workshop or factory with hired labour, and later into a medium-scale enterprise. This process of growth within the enterprise demands both structural and organizational changes and changes in the kind of managerial skills required. This insight into the nature of this growth process is valuable in that it points to the different kinds of external assistance required to accelerate the process of growth of individual rural enterprises through the amelioration of both internal and external constraints at different stages of their growth.

The growth of non-farm activities does have large and far reaching consequences for rural development in terms of employment and output. This growth process can be accelerated by external assistance, provided this is tailored not only to the particular characteristics and processes within small rural enterprises. These are the scale and market orientation of production, the level of technology involved, the supply of entrepreneurial skills (especially managerial and technical), access to key inputs (especially finance), and the development of shop floor skils.

The rural situation of these entreprises also needs to be borne carefully in mind. Improved communications and linkages with market centres are crucial to the growth of rural enterprises, but traditional enterprises are vulnerable to competition and the consequential changes in the market demand an adjustment in supply capability. Rural enterprises possess limitations in management, finance and technology which constrain their speed of response and adaptability-issues which must be borne in mind when designing external assistance and the undertaking promotion of expansion in this important sector of the rural economy.

The Pressure of Population Growth and the Growth of Rural Poverty

Between 1950 and 1975 world population grew by about 1.5 billion* - an increase of 60%, the bulk of this increase has been in developing countries which have both high fertility and the bulk of the population (72.5% or 2.9 billions). This increase has come about through a momentous decline in mortality rates under the impact of disease control and health care. The revolution in mortality rates has reduced the crude death rate by 45% producing a surge in population reaching an annual rate of 2.3% in developing countries for 1950-1975. This pressure of population increase has contributed to a growth in rural poverty. The important characteristic of rural poverty is that it has a downward "ratchet" effect as the impact of inflation, national or personal disasters, dowries, etc. force the sale or mortgaging of assets or the incurring of debts which increase powerlessness. The consequences of this population increase in rural areas have been to reduce self reliance and to increase greatly the demand for basic needs not the least of which is food. In the light of the inequalities of wealth, income, institutional structures and political power and the bias in the pattern of economic growth against the poor, growth in population has increased inequality in the distribution of income within developing countries. This has found expression in the resurgence of rural poverty. The poverty of the rural population can be seen in widespread under-employment and increasing unemployment amongst the rural work force. The expansion of the numbers of landless has given rise to increased migration to the towns and cities. Two important comments need to be made here concerning the basic issues of growth of migration and the incidence of poverty. The first is that the process of urbanization is an unavoidable part of the process of development but it is not necessarily a parasitic process - hence the importance of the linkages and relationships between rural areas and urban settlements within those areas has already been emphasized. Second, the causes of poverty are legion. Robert Chambers provides helpful insight into the holism of poverty and its five interlocking dimensions (lack of assets, physical weakness, vulnerability to contingencies, powerlessness and isolation).

* W. Parker Mandlin: World Population Situation: Problems and prospects World Development 1977 Vol. 5, Nos. 5-7, p. 395-405.

The uninterrupted progress of this downward spiral in recent decades has left many of the rural population at a major disadvantage. This unacceptable situation led the World Employment Conference in 1976 to adopt a resolution concerning less developed countries to the effect that "Strategies and national development plans and policies should include explicitly as a priority objective the promotion of employment and the satisfaction of the basic needs of each country's population ... Basic needs include two elements. First they include certain minimum equipments for a family for private consumption : adequate food, shelter and clothing as well as certain household equipment and furniture. Second they include essential services provided by and for the community at large, such as safe drinking water, sanitation, public transport and health, educational and cultural facilities". (ILO 1977).

The industrial component of the basic needs basket is substantial. It includes such items as processed food, clothing, footwear, housing and construction materials, basic drugs and medicines, bicycles, matches, soaps and detergents, textbooks and stationery, domestic ustensils and household items, lowcost furniture and energy supplies for heat and light. As was pointed out* in the Report of the Expert Group Meeting on Industrialization and Rural Development, the promotion 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 widly disposed; it therefore lends itself to more dispersed forms of production especially where infrastructure and communications are poorly developed. At present this huge potential source of demand is inhibited by a lack of purchasing power.

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* Expert Group Meeting on Industrialization in relation to Integrated Rural Development, UNIDO, Vienna, 12-15 December 1977.
Report published by United Nations, New York, 1978, p.22

Priority problems to be addressed by industrial development

In the light of the basic issues of rural development and the role of rural industries, what then are the priority tasks which can be addressed by further development of rural industrial activities ? In essence these are two : Rural industries already make a significant contribution to rural socio-economic activities and as development of the rural economy proceeds, they will play a greater role. Firstly, this expansion can be planned and promoted in such a way as to support and facilitate development of the agricultural sector and in this way multiply the size and scope of such initiatives. Secondly rural industries themselves are the largest alternative form of employment to agriculture for the rural population; as such they proved additional income earning opportunities and a means of diversifying the rural economy and generating additional rural resources.

There exists a strong structural interdependence between agricultural and industrial sectors at all levels within the economy of a developing country. Forward and backward linkages between the two sectors are many and manifold. The Expert Group on Industrialization in relation to Integrated Rural Development envisaged that the first priority product category for rural industrialization programmes would be the supply of agricultural inputs. These are essential to the modernization of agricultural production techniques, the application of power to agricultural activities and the raising of agricultural productivity. The greatly increased supply of modern inputs to agriculture is fundamental to increasing yields, improving cultivation practices, harvesting, storage and physical distribution. Allied to the supply of those inputs is the capability to service and repair equipment and machinery. As new agricultural technologies are introduced there support services must also become more sophisticated. The lack of such ancillary services can be a major constraint on agricultural development.

The processing of agricultural output both for local consumption and for larger, more distant markets must also carefully complement any increase in agricultural production capacity. Several stages of processing may be involved and economies of scale tend to be more critical where larger markets are being served. But some preliminary refinement of raw materials commonly occurs in rural areas, often being combined with production, while large central processing operations often produce by-products which serve as the basis for other industries.

Rural industries contribute directly to development processes in two main ways : firstly they are an important source of non-farm employment, and secondly they form an important part of the structure and diversified economic activities within those settlements which serve to close the gap between the larger urban centres and their rural hinterlands, thus changing the pattern of development. The creation of additional employment opportunities in rural areas both directs new income flows predominantly towards the landless labourers and wage earning groups of the rural work force. Crucially they provide income earning opportunities outside the scope of the traditional rural society; they can in time generate new skills and savings opportunities and hence new movement within the rural society which represents a major departure from the old social order.

The promotion of new and expanding industrial enterprises and business activities itself contributes to improving the quality of life in rural areas. Not only is there a dispersal of industry and hence of employment opportunities away from the primate cities but the expansion of the small scale sector realises local initiatives and taps additional local resources. New services are created and in response to demand, improvements in physical and institutional infrastructure and communications follow in train - greatly improving the quality of rural life.

SECTION TWO

## POLICIES AND MEASURES FOR THE DEVELOPMENT OF INDUSTRIAL ACTIVITIES IN RURAL AREAS

Rural development strategies and programmes have to be placed within a national framework and implemented according to national priorities. Rural circumstances and resources vary so greatly that there can be no simple standard model for widespread application. Certain principles can be put forward around which rural development policies can be built and tailored to local requirements and conditions.

The first of these is that without a strong, positive and visible commitment to rural development over an extended period, neither the government officials, concerned agencies, nor the rural people themselves will respond to any development initiatives. Clear objectives will need to be established, and special responsibilities allocated to define the direction and means of progress. The example set by senior politicians and officials will be marked and copied for better or worse. Here governments do face a major problem in that the timescales necessary for rural development initiatives to bear fruit - perhaps a generation, or more - do not fit with five year planning cycles, nor is progress in rural development always simple to measure. The solution lies in the realm of politics and represents a major change of values and priorities within society.

Secondly without the allocation of the necessary minimum resources in terms of finance and trained staff to design and implement rural development programmes will neither be credible nor make much progress. Here again governments in many developing countries face a genuine dilemma. All too often there are insufficient local resources to carry out priority tasks and rural development projects are expensive in local costs. All too often the results are slow and none too visible which makes them less acceptable politically. But the

allocation of national resources is not sufficient on its own; much greater attention is required to disbursement and distribution. Projects have to be multisectoral and multi level so as to penetrate the sectoral and social barriers, especially where poorer communities are the target groups. In addition the resources of the public sector have to attract and mobilize local rural resources otherwise they will simply be inadequate to deal with the scale of the task and rural inertia to change.

Thirdly as has been seen in the earlier section, the rural "state" is distinguished by certain functional characteristics, some of which are hostile to development, especially to industrial activities. Carefully tailored approaches to rural development problems are essential if an initiative is not to be lost in the complex of interrelationships and in the face of rural inertia. Motivation of the key participants in a rural development project is a prerequisite for change; to achieve this involves the creation of opportunities for local community leaders and key decision takers to participate in the preparations for a project as well as in its implementation.

The development of the planning function

Responsibility for the planning function lies with national governments; it is a core activity within the administrative process. Even where the political philosophy lends itself to a supportive rather than an interventionist role, the preparation of a national planning framework is essential to fix priorities and allocate scarce resources within national guidelines. However, the planning process should not terminate with the declaration of and budgeting for national targets nor with the issue of guidelines for implementation. To be effective proper provision must be made for programming, supervision of implementation, monitoring, evaluation and reformulation of the plan. The difficulty with the planning

process in many developing countries has been the tendency for this to become over-centralized and isolated from the very areas being developed. Planning often stops with budget formulation. Planners themselves are a scarce resource within the administration and are limited by their lack of local knowledge and up-to-date information provided by national surveys or district administrations. The ability of planners at the national level to identify or create new development initiatives in the field is very limited and so national governments need to create low-level planning capabilities at the regional or district level to generate those initiatives. These low level planning activities must be based on first hand knowledge and insight into the rural areas being developed and be opened to local influences. Within each country this devolution will have to be launched on an experimental basis, and adapted to local circumstances before being replicated on the scale necessary to tackle rural development within the entire country. In-depth programme training and experience requirements will determine the speed with which such a system can be replicated.

National resources will need to be supplemented initially by external expertise, especially sectoral specialists, to assist with project identification and the development of project methodologies appropriate to the distinctive characteristics of rural areas. However such external inputs would best be provided on a regular basis rather than through one-off programming missions. To this end regional teams of expertise could be organized to make such assistance available to countries on request.

A key role of the low level planning function is to achieve the essential integration and co-ordination of rural development initiatives and resources so that they become mutually reinforcing. To assist with this tasks there is considerable merit in the concept of integrated regional development planning, which has the aim of creating

a more diffuse and orientated system of settlements in a region; its objectives are to diversify the services and facilities available to rural residents, increase their access to town based markets, new sources of agricultural inputs and non-agricultural employment opportunities, and to provide guidelines for sectoral investment and location decisions.

Within the framework of regional or area planning there will be two overriding requirements of project planning and project development : One, the specific project proposals should be appropriate and oriented to the precise needs of a rural area (in terms of technology, management systems, training methods, marketing systems) and special emphasis on project orientation will be necessary to bring this about. Two,the specific proposals should utilize local resources and local skills as far as possible with substantial reliance on local initiative for implementation. If prime responsibility for implementation is not placed at the local level, the development process will not transform rural areas but will merely transplant "enclave" type development into the rural areas.

Allocation of resources

What then are the priorities for the allocation of scarce national resources in the planning and distribution mechanisms ? It is impossible to provide any fixed order of priorities for universal use because local circumstances vary so greatly. To be compatible with the poverty oriented approach, resources must be allocated for investment in the supply of agricultural inputs although the precise blend between larger scale "core" industries such as fertilizer or pesticide plants and smaller scale agricultural engineering activities will depend on local circumstances. Even when larger scale core plants are located outside rural areas, opportunities to locate break of bulk operations, such as packaging in rural areas may well arise. The Expert Group on Industrialization in

relation to Integrated Rural Development places the production of basic needs type consumer goods and provision of services for rural communities next in priority to the supply of agricultural inputs because such activities are highly labour absorptive with ease of entry and lower entrepreneurial requirements. However the Lagos Plan of Action for African Developing Countries has placed high priority amongst industrial sectors on the food processing industries to help alleviate storage and wastage problems and reinforce the drive towards self-sufficiency in food. Within the context of rural development the processing of agricultural output to meet the needs of local and regional markets must closely complement and reinforce progress in increasing agricultural output. Other industrial activities such as the production of building materials, mineral processing, and non rural resource based industries tend to be governed more by comptetitive conditions in regional, national and international markets but special local circumstances can overturn these factors. Perhaps the overriding criteria to establish priorities is the need to exploit to the maximum available local resources.

Just as important as any sectoral priority for the distribution of resources will be the need to achieve a wider disposal of resource flows. Within each sector special attempts will have to be made to disburse funds at the lowest possible level e.g. through block grants at the district level so that disbursement meets local priorities within national guidelines.

Some developing countries have pursued a policy of concentrating resources in large scale capital intensive plants or groups of such industries in "growth poles" with the aim of creating catalytic or spin off development in the surrounding rural areas through subcontracting and indirect employment effects, etc. Such a strategy can work in selected localities if sufficient resources are available but the cost of such a radical and geographically limited form of development is so

high, it is doubtful if the core region of a developing country can support and sustain many such growth poles for long enough for them to become self sustaining. Not only that such growth poles compete with other neighbouring centres in the urban hierarchy and with other rural centres beyond their immediate hinterland. Such a policy is discriminatory and does not lead to sufficient disposal of the benefits of development.

Participation in project implementation

Once a particular development strategy for a rural area has been laid down and a series of programmes launched to achieve these aims, two aspects of project management will largely determine their progress; these are the extent to which control of resource disbursement and project implementation is decentralized to regional or district government officials and to other key decisions takers, and the extent to which there is a regular process of review and evaluation so that constraints and problems can be quickly identified and dealt with. The lessons of experience with agricultural development projects in this regard should not be ignored.

Local officials will be much more able to translate development priorities into locality specific initiatives and management decisions than any heavily tiered institution or single central agency representative. However to enable local officials to deal with the technicalities of particular issues they need to be provided with quick and effective access to technical specialists who can advise on specific problems or aspects of project development. Participation of project implementation can only work if sufficient autonomy is given to local officials and if good communications and support services reinforce their local knowledge and contacts with key decision takers.

Unless large scale industrial plants are being developed for strategic or catalytic objectives, key decison takers in the process of industrial development in rural areas will be local entrepreneurs,

who own or manage individual businesses, and the suppliers of key inputs such as trades, bankers, etc. Since those parties are not normally bound by official plans or administrative decisions, the development of rural industries in practice involves distinct stages : one, the identification of the individuals concerned, two, the promotion of certain aims and activities to increase awareness and knowledge of rural development initiatives and incentives, three , selective support of interested parties and proven abilities, and four, regular follow up over an extended period. Much can be done through effective co-ordination of existing agencies and improved access to existing services to bring those about.

## The Maturing of Development Expertise

New policies for rural development and rural industries and the measures necessary to implement them require substantial expertise within and belonging to developing countries. While manpower is rarely a problem, training and the gaining of practical experience are difficult problems for developing countries to overcome. The expertise required to implement these policies is more than administrative expertise. While efficient administrators will be required to deliver technical assistance programmes to rural enterprises, specialist skills including those of industrial promotion and technical production skills will be required to implement them. Additional resources will be required to fund not only formal training programmes, which are institutional based, but also to fund post training experience in commercial situations. There are important opportunities here for South South co-operation to take advantage of the institutional capacity which has been created in the last two development decades. However a major constraint is the limited opportunity for work experience for development specialists in ongoing business or commercial operations. This is perhaps one area where North-South co-operation can greatly expand at limited cost by drawing on the established business structures of the developed countries to expose development officials to the realities of commerce and viable enterprises.

The systematic and intensive training of development officials in industrial promotion techniques is a further priority for national policy. While the integration of rural development projects can be initiated at the planning level, it can only be consumated at the level of project implementation. In part decentralization of resources allocation will help to solve this problem, but the joint training of development implementors can do much to achieve effective co-operation in the field. For example there is a major overlap of interest between local development officials and local bankers if their approach can be harmonized in formal training situations.

Within developing countries too there now exists significant expertise in specialized fields which should be shared whenever possible on a regional basis. Consultations and exchanges of experience, study tours and short term attachments can all contribute to increased technical co-operation. In some instances the initial contacts may have to be generated by internationational programmes but already cooperation at the bilateral and multilateral levels is growing through regional institutions established for that purpose, such as the Regional Rural Development Centres in Asia and Africa, or the Regional Centre for Agricultural Machinery in Asia.

Until such time as this national expertise can be generated in sufficient quantity, there is a major role for international agencies in providing the services of technical experts firstly for programme development, then for project development and orientation, and also for technical back-up. Such support would best be provided on a regional basis to encourage the build up of multi-disciplinary teams with first hand, working knowledge not only of the countries within that region but also of the rural areas within those countries. Substantial sectoral and infrastructural expertise now exists within the scope of the international agencies; this now needs to be applied consistently at a much lower level within national economies than hitherto.

Key Policies and Measures

Given the scope and nature of the rural development task, four industrial policy areas stand out for priority attention during the period 1985-2000, if rural industries are to become self-generating and help change the future prospects for the rural majority, many of whom are poor. These broad policies are designed to meet the twin aims of supporting and reinforcing agricultural development, especially the expansion of food production, and the expansion/diversification of rural industrial activities. These are:

- the creation of a favourable economic climate for rural businesses, and the launching of rural industrialization programmes;
- the improvement of the management capability (including marketing) of rural industrial enterprises - for unless the available resources can be used effectively and efficiently to explore clearly identified market opportunities no significant return will be obtained on new investments and the multiplier effect of growth will be lost;
- the increased flow and greater availability of finance and other essential inputs to rural enterprises so as to improve access to the means of production and diminish the inherent disadvantages of rural enterprises - only through a redistribution of productive assets away from the cities can sufficient opportunities for rural initiative and creativeness be made in an acceptable time-scale, i.e. a single generation;
- the development and adaptation of technologies appropriate to smaller scale activities in rural areas within developing countries themselves will be essential to help achieve greater self-reliance - similarly resources will have to be made available for dissemination of such knowledge and provide much greater access to improved or different technologies for rural enterprises. This last priority is perhaps the most difficult policy area in which to make significant progress, but it is the most crucial to the long term development of rural industries.

These policies themselves will not succeed in developing increased rural industrial activity unless the improvements in development planning and delivery mechanisms already discussed are also introduced on sufficient scale to address the breadth and depth of rural development. Many observers have noted the bias against the interests of the rural majority which is to be found in many developing countries be it in their development policies, institutions or the attitudes of concerned officials. This has inaccurately been described as an urban bias; rather it is a matter of elitism , of vested interests of the minority, who manipulate the levers of political power. This bias is no less potent for its human origins; unless it can be reduced or better still removed, rural development will remain a pious theoretical objective far removed from reality.

The Creation of a favourable economic climate

In many developing countries industrial policy has led to investment in a modern manufacturing sector with large-scale operations, dependent on imported technology and capital, and oriented towards the demands of urban markets for consumer goods. This situation has arisen because of a policy of import substitution in an attempt to leap into the industrialized stage of development. This growth in output has been the response to strong incentives for the transfer of capital and know-how and the use of the abundant labour supply in developing countries. In some situations the strategy has developed into establishing export oriented manufacturing industries in free trade zones; sometimes with outstanding success. However such concentrated patterns of industrial development have served to reinforce the unbalanced growth of very large urban centres and the industrial activity has never had any strong link with the local economy - rather it has been grafted on as an appendage. Neither has it proved to be very adaptable to local conditions. Its foreign or urban market orientation have allowed it to create an artificial environment far removed from its rural hinterland, and one which is vulnerable to rapid changes in demand in distant, competitive markets.

In part the growth of the modern industrial sector has stemmed from the allocation of a large share of the available local resources; in part it has also flowed from distortions in the economy such as factor prices have been organized in favour of capital intensive activities through subsidies on the cost of capital, or the introduction of protection from imports, encouraging inefficiency and lack of competitiveness. Special provisions for infrastructural development to service such activities have given them an unfair advantage. Artificially high exchange rates have favoured imports rather that exports. Just as these distortions have favoured large scale urban industries so they have discriminated against rural interests. Agricultural investment has been neglected; rural output and incomes have therefore been left behind especially in periods of high inflation. High cost sophisticated consumer goods have been produced rather 'basic needs' goods; technologies used have been capital intensive rather than labour intensive. Prices for rural produce have been kept low, while imports of capital intensive producer goods have often been subsidised.

What has become evident from experience with industrial development over the last two decades has been the extent to which industrial policies have discriminated in favour of modern industrial capacity, chiefly in urban areas, and against smaller,indigeneous,low technology industries outside the main urban conurbations. For example the whole thrust of government regulation and control of industry in such matters as collection of data, taxation arrangements, production and import licensing, introduction of standards, and access to industrial incentives or allocations of scarce inputs has been oriented to more organized and larger enterprises. Smaller enterprises, especially those in remote locations and with poor communications find the interface with government institutions much more difficult; because they lack the resources and systems to make 'the system' work, they therefore are at a major disadvantage unless special arrangements are made to protect their interests.

The creation of a favourable economic and business climate for rural enterprises is fundamental to business confidence and business activity. Only by setting up special institutional arrangements within government and its agencies to identify and actively further the interest of rural enterprises can the worst effects of broader industrial policies be mitigated. More than this however will be necessary; active promotion of rural industries, supported by selective assistance, will be essential to initiate new activities and facilitate the expansion and diversification of existing ones.

The Expert Group Meeting on Industrilization in Relation to Integrated Rural Development in its conclusions(contained in Appendix II)envisaged that comprehensive rural industrialization programmes would be required in developing countries to catalyse and accelerate growth in this sector. New approaches and new mechanisms would be required and established techniques of industrial promotion would need to be re-examined and perhaps adapted. Different countries would doutvless choose the mechanism most suited to their requirements, but the Expert Group Meeting highlighted the role of an industrial extension service as the point of contact with and access to various specialized agencies and arrangements which will be required. It would be wrong however to place too heavy a responsibility on an extension service for the delivery of assistance to rural enterprises since the range of problems and expertise required for their solution is too great for a single institution. Rather the role of an extension service should be an 'enabling' role designed to facilitate access and use of specialized agencies and services.

Mention has already been made of the location of the key decision takers within rural industries i.e. the entrepreneurs themselves. Due account must be taken of this simple fact when attempting to motivate and stimulate new initiatives at the local level. While much can be done by representatives of formal institutions through publicity and awareness campaigns, promotional activities, business opportunity clinics, project advisory teams which can be targeted on specific groups, the basic motivation must be rooted in the

rural community. The Expert Group Meeting recognized that development agencies and 'change agents' were required to liberate and not to constrain the initiative, energies, knowledge and skills of the rural people. Change agents in industrial activity are many and varied and are still imperfectly understood; they may be institutions or individuals, ideas or techniques and be either internal or external to a particular rural situation. Many governments in developing countries have already recognized this need in other sectors through 'community development' programmes of various kinds. The birth and shaping of industrial initiatives in rural areas must be part of this process.

The Expert Group on Industrialization in relation to Integrated Rural Development concluded 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. The Group recognized that such co-operative forms of production were most effective when the initiative and drive for their establishment came from below.

The Development of Management Capability

The overwhelming majority of rural enterprises come within the small or medium scale sector. Many very small units might usefully be described as 'informal' or 'unorganized' businesses with a single power/proprietor/manager/shop floor supervisor. For such enterprises the organization of the production process is the dominant management activity whereas other areas, such as control of financial resources or marketing will be just as crucial to the survival of the enterprise. Small workshops or factories require greater specialization in management skills with greater attention to organization of raw material supplies, accounting functions and management of working capital. Should such a small enterprise grow and expand its output significantly, investment decisions and the management of the work force will be more demanding of management resources. There

will be a wide range of management skills required by very few key decision takers and these management capabilities will need to evolve as the business activities grow and change their nature. The qualities and skills required of an entrepreneur in launching a new enterprise are very different from thos required to foster its growth and diversification.

Attempts thus far to provide management development and training services in developing countries have focused on formal educational institutions and full time courses, although some attempts have been made to provide 'consultancy' services through extension services or technical assistance projects. But extension workers rarely have commercial or managerial experience. Few part time training facilities are available and self-instruction materials in basic techniques in the local language are rare. Little use is made of local business organizations such as chambers of commerce, etc. to create awareness of the need for training. Thus far very little progress has been made in helping rural enterprises in this key problem area which is of great significance for their growth prospects.

New approaches in management training and development are urgently needed to solve this problem. Local formal educational institutions can make some contribution with specially tailored courses on occasional or part time bases. However, new instructional techniques using mass media, roving demonstrations, self help teaching materials (using local idiom and visual presentations) together with incentives for training at both management and supervisory levels are required. Perhaps the key basic management skills for rural industries are their capability to utilize financial resources effectively and market capabilities. These two areas should be given priority in management development programmes in rural areas.

Improving the supply of inputs

Finance : A shortage of finance is a universal complaint amongst small enterprises : this constraint may indeed be real and seriously constrain the performance and growth prospects of a rural business. However it is also true that many small businesses make inefficient use of the total resources they possess through bad planning, poor control of stocks and work in progress, poor purchasing of new materials. Thus while small scale activities may be relatively efficient in use of capital in comparison to larger scale enterprises, they may suffer from inadequate working capital in the running of their business through poor management of their internal resources. Small businesses may also suffer from lack of access to longer term credit for investment in productive assets on terms equal to the financial facilities extended to larger scale industry.

It is the major task of any attempt at providing assistance in this area to distinguish between cause and symptom of a financial constraint in a small business. Nevertheless poor access by rural entrepreneurs to all kinds of credit can be solved by small business development agencies and financial institutions. Because of the higher risks involved and the reluctance of banking institutions to extend credit facilities to the small business sector, especially to relatively unorganized units, special facilities often have to be created or else guarantees provided by government to insure bankers' loans. The most important measure is to distinguish clearly between the different purposes of the loans. With credit for the purchase of fixed assets (land, buildings, and equipment) special facilities with easier repayment terms are often necessary, but subsidized interest rates are less important than improved accessibility to loans. In rural areas with smaller loans there is much to be said for hire purchase credit schemes, where the loan is secured by the capital good or asset. The provision of working capital has long been the traditional role of the banks, but their limited branch network in rural areas and reluctance to make high risk loans is often a major obstacle. While special measures might well be necessary to persuade

the banks to assume their full responsibility for providing working capital in rural areas, the banks need to accept their share of the task for educating and servicing rural customers' credit needs to integrate these business into the formal economy and to foster sound financial practices in those businesses. It is important in rural development schemes to ensure that financial assistance is made available to activities at all levels of rural society, so that even petty traders or part time service activities can be upgraded. Only in this way can the expansion of industrial activities reach down to the poorer sections of the community.

Labour : At first sight the supply of labour is rarely a constraint within rural industries, but trained or skilled labour is often in short supply. Andersen and Leiserson have pointed out * that the primary training ground in developing countries in basic manual and business skills are the rural business activities. Up to one half of the total numbers employed in skill based activities may be under training through traditional apprenticeship arrangements. The introduction of raw technologies or the upgrading of skills therefore presents special problems, not likely to be solved by formal training institutions. Just as with management training and development so a revolution in approach and technique is necessary here. Two comments can be made at this stage towards possible paths to progress with these difficulties. First if the knowledge and skills of workshop or 'shop floor' supervisors can be improved significantly this will have large spin-off effects for the work force as a whole. Second the concept of improving the traditional training capabilities of the enterprises themselves offers much promise particularly if this can be done at least in part through self help teaching materials, etc.

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* D. Andersen and M.W. Leiserson. Rural Non Farm Employment in Developing Countries Economic Development and Change - 1980 - p 127-148

Infrastructure : The supply of land, building, utilitie and essential services are important inputs for the growth of rural industries. Many developing countries assist in their supply through the construction of industrial estates or 'advance' factories, or special assistance with the cost of constructing buildings. The availability of water and electricity services are almost a pre-condition for any form of industrial activity but the construction of industrial estates or modern buildings is perhaps less relevant to the needs of many very small rural enterprises. At a later stage when larger industrial units are being established, the supply of land and buildings becomes a more pressing issue. Usually at this stage however the need to control land use also plays its part in the designation of 'industrial areas'. The cost of physical infrastructure is so high that the construction of industrial estates perhaps should follow only from an overwhelming demand and be a lower priority within rural industrialization programmes than has sometimes been the case.

Raw materials : It is inevitable that small, dispersed forms of production will have more difficulty in organizing their supplies of raw materials than larger plants. Transport, the availability of credit for raw material procurement, storage facilities - all these factors bear on this problem. In certain circumstances the bulk purchase and transport of raw materials can be a valuable source of assistance to cottage or household industries which may make for a significant improvement in the quality of output. However in general the organization of supplies is too complex to merit from public sector intervention. Therefore efforts to improve the flow of materials to rural enterprises are probably best confined to improving the workings of the market, through educating the buyers on quality, etc., introducing standards, and perhaps organizing special credit facilities.

The Development and Adaptation of Technology : Because the scale of production in rural areas tends to be limited, the technology employed requires careful selection if it is to be appropriate to its environment and still contribute to the viability of the enterprise. The prime difficulty is that in practice in any individual project the choice of technologies available tends to be very limited. Examples of the common technologies in use will mostly be in urban areas and few rural entrepreneurs will have

access to these or be capable of developing their own adaptations. Few business promotion organization or technical assistance organizations have any broad competence for the development of more appropriate technologies, therefore lack of technological supporting services is a major constraint on the longer term growth of rural enterprises. In the last two decades a number of important new technological facilities have been established at the international level, so as to provide a skeleton of reference points for would be enquirers who can gain access to them. UNIDO itself has a Technological Information Exchange System among technology transfer registries in 32 developing countries. Various networking arrangements exist such as that for agricultural machinery in the ESCAP region under the auspices of ESCAP, FAO and UNIDO. Some Regional Technology Centres have been established including a centre for the promotion of agricultural machinery in developing countries in Peking. There is further scope for linking up national institutions which deliver technological services to industry through net working arrangements, exchange of technical information, mutual referral of problems and shared use of specialized facilities. However, in terms of the needs of rural industries perhaps the greatest need is to improve access to the national and international facilities which already exist. To this end contact facilities at the national level should be established so as to guide would be users into the most appropriate "entry point" of the system. Greater emphasis is also required on the diffusion of standard technologies and progressive improvements to individual entrepreneurs. In the longer term more concerted efforts are necessary at the national level to seek out and support entrepreneurs with the rare capability to innovate, so as to integrate their activities with those of concerned agencies and institutions.

## SUMMARY OF CONCLUSIONS

In the light of the unsatisfactory pattern of development in the last two decades, when many developing countries have seen a polarization in their economies and societies and there has been a failure to integrate rural areas into the remainder of the economy and the majority of the population has been relatively untouched by the development process, renewed efforts to alter the thrust of rural development efforts are urgently needed. Yet there is nothing new about rural development processes or providing selective assistance to small enterprises as has been advocated. What is required is a significant improvement in delivery mechanisms so as to disperse development processes more widely and to penetrate to the lower levels of rural society. The task is huge and, furthermore, the resources available within the developing countries and amongst the different international agencies are limited. To make progress requires a change in priorities within planning activities and resource allocations at the national level; it also requires concerted action in support of these changes in priority at the international level. In terms of the contribution of industrial activities to rural development two priorities emerge:

First, to organise the development of rural industries so that these activities support and reinforce the development of agriculture, particularly the production of food.

Second, to promote the expansion and diversification of rural industries at all levels within rural economies so as to achieve a greater dispersal of industrial activity and to provide additional non-farm employment for the rural population.

Industrial activities already play an integral role in the development process both within urban centres and their rural hinterlands. The growth of rural industries will improve the linkages between urban and rural areas and help to redress the present imbalance in the settlement hierarchy to be seen in most developing countries.

The policy areas where action is necessary to revitalize rural industries have been explored and more detailed measures to meet the needs of the rural situation have been discussed. The most important question remaining is who is to take the initiative? In large measure the answer to this question must be the rural people themselves. However, action is also necessary at both national and international levels to help bring this about.

National steps towards rural industrialization

1. A firm national commitment to rural development and its objective of reaching the needs of the majority is a prerequisite for progress. There should be a clear designation of responsibilities and a change in the attitudes of the bureaucracy, and concerned officials towards the needs of the majority.

2. National resources should be harnessed towards rural development and adequate allocations of funds and trained personnel made to implement rural industrialization programmes.

3. Much greater decentralization should be introduced into development planning and project administration. Circumstances will vary between countries but ideally planning and programming responsibilities should be moved to regional or district levels.

4. Project identification and development of project methodologies should be carried out by trained staff with personal knowledge and contact with the area and people concerned. Projects should be oriented to local circumstances.

5. There should be opportunities for participation in the planning process by community leaders, key decision takers, and concerned local officials.

6. Communications between political and economic centres and their rural hinterlands should be improved so as to integrate the rural economy with the wider economy.

7. Rural industrialization programmes should be launched to promote the establishment of new rural industrial enterprises and the expansion of existing enterprises. Entrepreneurial development programmes will play a crucial role in these promotional activities.

8. Extension services should function as an effective form of outreach to rural areas and serve as the point of contact for access to tailored support services provided by specialized agencies, which should be expanded and made more accessible to rural enterprises.

9. Resources should be allocated and selective assistance made available to rural industrial activities which supply and service agricultural inputs and bais needs items. The capacity to process agricultural output should be expanded to complement any increas in agricultural production, especially of food.

International steps towards rural industrialization

1. Regional initiatives should be launched to foster international co-operation within particular region and to mobilize regional resources. Significant development expertise now exists within developing countries which can be shared at least on a short term basis. The establishment of teams of regional experts to service more of the region's requirement for consulting and specialist expertise in the fields of rural development would make that assistance more appropriate to the problems in view.

2. International collaboration on rural development policies, planning procedures and techniques would greatly improve the effectiveness of project planning and implementation. Consultations for the exchange of experience, and exchanges of personnel on short term attachments would be most appropriate forms of co-operation on either a bi-lateral or multi-lateral basis.

3. Opportunities exist for collaborative ventures in strategic or core industries for the supply of basic large volume inputs, or fundamental technologies. Thus for only a small proportion of international trade lies between developing countries; however joint ventures in larger capital intensive processes, the sharing of production technologies for key inputs into agriculture, or marketing arrangements could foster increased self-reliance amongst groups of developing countries in such industries.

4. Collaboration on technology whether new or established is now an integral part of technical co-operation between developing countries. While opportunities still exist for further co-operation through the integration of national networks, priority should also be given to improved access to established networks and reference facilities and to the dissemination of standard, basic production technologies. In the interests of economy this might best be organized at the regional level, although the availability of technical material in the vernacular will have to be safeguarded.

5. International co-operation through access to formal training facilities is now also well established. However further opportunities exist to create short training courses, tailored to the needs of rural development, designed

to strengthen development expertise in government and other public sector organizations. A particular opportunity exists to integrate the training arrangements of industrial promotion officials with those of bankers whose approach to rural entrepreneurs should be co-ordinated.

Support by the international agencies for rural industrialization policies and measures

1. International agencies will clearly have a supportive role in reinforcing national initiatives towards rural development. Lead agencies have an increased responsibility to ensure the careful integration of support for project initiatives. In the past the industrial component of rural development programmes has been insufficiently recognised in planning and implementation processes.

2. It is envisaged that UNIDO should make a greater contribution to project planning and programming at the lower level than has hitherto been the case. The aim would be to provide assistance with project identification, development of project methodologies, and project orientation to the needs of particular localities mainly through the provision of planning and sectoral specialists. The creation of regional teams of such experts on which agencies could draw would be a major step towards improving the appropriateness of this assistance.

3. An expanded role for the office of the Senior Industrial Development Field Adviser in rural project identification and development would be necessary to ensure improved delivery of technical assistance to the lower planning level (i.e. a region or district within a country) and to rural development projects in remote areas. This would facilitate the more frequent process of project monitoring and evaluation necessary for rural development projects, and also improve the efficacy of project management.

4. Substantial agency assistance is likely to be required in the development and training techniques and materials for rural industrialization. The full resources of the international agencies will be required to develop new approaches and materials particularly those which lead themselves to self-help learning processes. A similar requirement exists in the training of supervisors and the enhancement of their training capabilities for unskilled workers.

5. There is substantial demand for post formal training'work experience' courses amongst both development officials and technologists in the form of short term attachments. Such specialized requirements can best be organized through the international agencies and will involve a combination of South-South and North-South co-operation. The one area where North-South co-operation will be of unrivaled value for the maturing of developing country expertise will be that of commercial experience both for marketing and technical skills. Here the well established and diversified corporate infrastructure of developed countries should be exploited to the maximum extent possible.

6. There will be considerable demand for technological support services designed to upgrade production techniques in rural industries. Increased demand for technical advisory services can also be anticipated in the period in view. A network of regional centres for the transfer of technology is already being established; the challenge will be to extend the outreach of such centres to rural industries. The international agencies have the infrastructure to encourage and extend this outreach through the office of the Senior Industriel Development Field Adviser within individual countries. The necessary additional resources will have to be provided to fulfill this function.

## PRODUCTS COMMONLY PRODUCED BY RURAL INDUSTRIES

The range of product possibilities(*) for rural industries may be summarized as follows:

- traditional craft industries
- service industries
- agro-industries
- other resource - based industries
- other manufacturing and assembly operations

It is difficult to generalize about the kind of industrial activities which may exist in a particular rural locality. The range is large from highly sophisticated and self-contained satellite plants to pre-industrial forms of manufacturing such as the production of building materials, traditional handicrafts and the processing of agricultural produce using manual techniques. However in the majority of cases, existing industry in rural areas is normally of the 'artisan' type, although some simple manufacturing and processing activities may have developed as an adjunct to retail or trading concerns. Traditional artisan type enterprises rely on simple, well proven techniques and manual skills. There is often surplus capacity in relation to demand, and the enterprises are commonly family based and owner/proprietor managed. Production tends not to be organized systematically and there is little consistency in output; however such units have low overheads, are close to their markets and are adapted to the local environment.

Traditional craft industries utilize a great variety of locally available raw materials, the cost of which is often limited to that of collection. These craft activities meet rural needs, they supply consumer goods, but they may also find urban, tourist or export markets as 'hand crafted' items. Rural production is largely sheltered by isolation and shows little variation in design; much of the production is carried out by women on part time or seasonal basis in or near the home. Tools and equipment tend to be very unsophisticated.

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(*) Based on the list of priority industries for rural development programmes contained in the report of the Expert Group Meeting on Industrialization in Relation to Integrated Rural Development held in Vienna 12-15 Dec. 1977. (ID/215)

Service industries: there are several different types of service activities which range from repair activities, sometimes combined with manufacturing on a jobbing basis, and pure maintenance and replacement of parts. to manufacturing/assembly allied to retail operations. They are perhaps best categorized by the markets they serve; these are:

(i) agriculture - maintenance and repair of machinery and equipment including the fabrication of some simple parts; in traditional systems simple tools and implements may be manufactured, in more sophisticated systems a wide range of inputs may be produced e.g. insecticides, packing materials, break of bulk for fertilizers and seeds.

(ii) rural crafts and small scale manufacturing units - repair and maintenance of simple equipment for weaving, pottery, wood working, etc.

(iii) rural transport and infastructure - repair and maintenance bicycles, carts, cars, trucks and buses and essential public services of water.

(iv) maintenance and repair of domestic equipment.

Agro-industries are mainly processing activities covering a wide range of crops including:

- field-crops: grains, oilseeds, fibre crops
- tree and plantation crops: fruits, nuts, grapes, tea and tobacco and spices
- market garden crops: vegetables, fruits and flowers
- products of animal husbandry, poultry, farming, inland and marine fishing
- products of forestry and wild life

A number of characteristics of agro-industries distinguish their activities and suitability for rural locations. Several stages of processing may be necessary before a product reaches the final consumer; these may be carried out at different locations or else combined, or the initial processing may even be integrated with the agricultural activity itself. Processing for the local rural community, such as in the case of food, is often done in relatively small-scale plants although increasing specialization does bring some increase in scale of production. In addition some by-products and wastes from processing are utilized in rural areas, and there is therefore some incentive to process these products in the locality of the growing areas. Other agricultural produce is seasonal in supply or perishable; in such cases there is a tendency to locate such processing plants in the rural producing areas.

The more diversified the agricultural sector the greater the product range and prospects for agro-based industries in rural areas. Climatic and ecological conditions largely determine the produce or type of raw materials available for processing, but even here irrigation and artificial environments have greatly widened the options for production given sufficient demand.

Other rural resource-based industries involved extraction and processing of raw materials for use in either rural or urban areas. Some are traditional activities but many have arisen out of the greatly increased demand of urban settlements and their large-scale andmore sophisticated processing processing and manufacturing activities; some rural mining or extraction activities are highly organized on a large-scale with sophisticated technology. There is a great variety which includes:

Stone quarrying, crushing, cutting and finishing
Sand collection and washing
Clay pit operations
Extraction, grinding and cleaning of mineral pigments
Mining and cleaning of salt

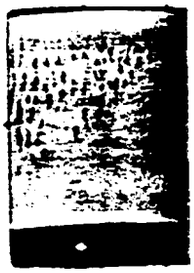
Mining and burning of gypsum and lime
Mining of minor minerals and semi-precious stones
Manufacture of building materials
Manufacture of pottery and ceramic ware
Manufacture of glassware

Other manufacturing and assembly operations may utilize imported materials and take advantage of rural labour, land, energy sources etc., to produce a wide variety of consumer goods and simpler capital goods. The product groups include cement products, textiles, hosiery and clothing, sports goods, giftware, curios , small engineering goods and machined parts.

The distiguishing characteristics of rural industrial enterprises are normally their orientation towards local raw materials or local markets (which may include nearby central places). Almost without exception they rely on unskilled or semi-skilled labour in large measures for which they may draw on a surprisingly large catchment area.

CONCLUSIONS OF THE EXPERT GROUP MEETING ON INDUSTRIALIZATION IN RELATION TO INTEGRATED RURAL DEVELOPMENT

UNIDO, Vienna, 12-15 Dec. 1977



# II. Conclusions

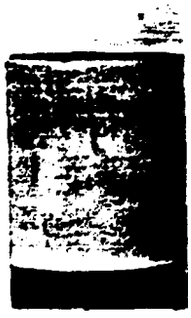
The conclusions of the Expert Group Meeting were adopted at the last session on 15 December 1977. They are given in the following paragraphs.

### 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

[1] Change 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.



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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

[2] Entry 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;



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*(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.

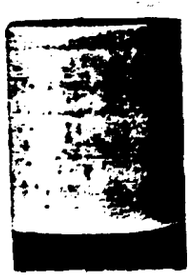
The group thought that one beginning to the processes of rural industrialization might be found in policies for dispersing further industrial development and growth away from existing large concentrations of industry in major metropolitan centres.

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



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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.

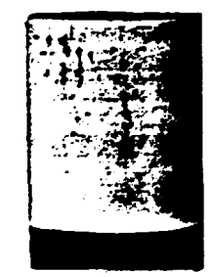
The Expert Group concluded that there had been a failure in many countries to recognize the merits of more co-operative forms of organizing production. Their reliance on self-help and the advantages of scale which they conferred, especially in the production of items for the satisfaction of basic needs 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 industralization 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. Proposa

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APPENDIX III

## UNIDO ON-GOING ACTIVITIES OF RELEVANCE TO RURAL DEVELOPMENT

UNIDO has been involved in activities concerned with various aspects of rural development over a substantial period. These activities have included technical assistance to individual projects in developing countries, arrangements for technical co-operation at bilateral and unilateral levels, consultations at regional and international levels in specific issues related to rural development, and also a consideration of the policies and measures for industrialization in relation to integrated rural development at an expert group meeting held in Vienna in December 1977, the conclusions of which make up Appendix II.

Much of UNIDO's work bears indirectly on rural development processes and mechanisms; for example, assistance with the development of basic metalworking and engineering skills contributes to the capability to develop an agricultural machinery industry. Work on low-cost building materials contributes to the construction of the rural housing stock. Technical assistance with the production of pharmaceuticals reduces dependence on imports and increases the effectiveness of rural health programmes. However, for the purpose of this background paper, some examples of UNIDO activities of more direct impact on rural development are given below to illustrate the range of the development task in view.

### Examples of Projects Providing Assistance to Rural Industries.

1. DP/ETH/77/018 - Assistance to Handicrafts and Small Industries Development Agency: The objectives were to activate available indigenous skills and to mobilize capital resources to support small industries and handicrafts development, thus complementing agricultural development and that of large scale industries; the small-scale and handicrafts industries were intended to decentralize industrial development and provide employment in both rural and urban areas using labour intensive, capital saving production methods.

2. US/URT/77/003 - Consolidation of the village production of agricultural implements by local blacksmiths: the purpose was to improve both the quality and production volume of small industries engaged in the manufacture and repair of agricultural implements.

3. DP/ZAM/82/019 - Assistance to Village Industry Service: the purpose was to provide mobile workshop vans to foster the orderly development of village industries in Zambia by spreading knowledge of industrial operations and the use of modern tools and simple equipment.

4. DP/ZAI/81/014 - Development of small medium enterprises in Zaire, especially in the Kiva region: the objectives were to generate economic impetus and decentralization through development of small and medium enterprises, and to promote the exchange of goods between regions and sub-regions.

5. DP/ZIM/80/020 - Small-scale and rural-based industries support services: the aim was to support small-scale and rural-based industries in order to mobilize available resources for decentralized growth of manufacturing industry, satisfaction of basic human needs, generation of employment and income and the stimulation of local initiatives.

6. DP/FIJ/80/003 - Assistance to small-scale rural industry: the purpose was to increase participation by the rural indigenous population in industrial activities and to create new employment opportunities especially for rual youth through the establishment of rural service workshops together with technical and training facilities, providing advice and assistance to rural entrepreneurs and establishing a rural extension programme.

7. DP/BOT/72/009 - Botswana Enterprises Development Programme: the aim was to accelerate rural development through the fostering of small enterprises in the major rural villages by strengthening the Botswana Enterprises Development Unit and its capabilities to provide assistance to rural enterprises.

8. DP/JAM/81/002 - National Planning and Development of Small Industries and Handicrafts: the objectives were to plan and implement a national development programme for creating new enterprises and expanding existing areas for labour intensive handicrafts, and to restructure existing institutions producing crafts, and establish new activities to create employment opportunities for the weaker economic sector in both rural and urban areas.

9. DN/SRL/78/038 - Strengthening of Development Planning: the purpose was to organize a study of small-scale industries, identifying major constraints for small rural industries with a view to strengthening various planning organizations and their planning capabilities in these fields.

In addition, UNIDO already has substantial experience of technical co-operation among developing countries through UNIDO implemented projects and activities. Some examples of recent experience in the field of rural development within the ESCAP region are given below: -

## ENERGY AND ENERGY-RELATED TECHNOLOGY

### Regional network for small hydro power (RN/SHP)

UNIDO and ESCAP have closely co-operated during the last three years with the UNDP and with Governments and Agencies in Asian countries in promoting the development of small/mini hydro power generation in the region. Three workshops and one expert group meeting were held on the subject, the first in Nepal in September 1979, the second in China and the Philippines in 1980 and the third in Malaysia in 1983; the expert group meeting took place in 1982 in China. These efforts have culminated in the establishment of a Regional Centre for Research, Development and Training in small/mini hydro power in Hangzhou, PRC. The Regional Research, Development and Training Centre will be used as a focal point in a network of national mini hydro power generation organizations or institutions designated by individual member countries of the region. The Centre will act as a catalyst with the following development objectives:

a) To undertake scientific research and technical development in the field of mini/small hydro power;

b) To exchange technical information on mini/small hydro power generation;

c) To carry out technical training of personnel from developing countries in mini/small hydro power; and

d) To provide technical advisory services and assistance to developing countries in mini/small hydro power.

More than 10 Asian developing countries are expected to participate in the networking arrangements through designated focal points.

The national focal points established in the various countries are expected to provide a large number of services. The focal points will co-ordinate the activities in this field within the country and furnish the necessary inputs required to other focal points. These focal

points are expected to provide the following services in the assigned aspects:

- Organize an information service (technical and general);
- Accept or recommend candidates for training from other focal points;
- Make available short-term advisory services;
- Undertake R and D projects depending on the facilities available to the focal points;
- Organize meetings for the benefit of the network;
- Establish links with institutions outside the network.

Bio-fuels and Syn-fuels

UNIDO's technical co-operation projects on bio-fuels and syn-fuels in Brazil, China, India and the Philippines are addressing major research and development problems of interest to other developing countries. These four countries have agreed to share the results of UNIDO's projects with other developing countries and to collaborate with them under TCDC arrangements.

The project in the Philippines deals with production of ethanol from cellulosic materials. Assistance has been provided to the National Chemical Laboratory in India to strengthen R and D efforts in the use of cellulosic materials. The work involved studies and processes for the production of microbial biomass animal feed from cellulose, the enzymatic hydrolysis of cellulose to glucose and the conversion of glucose to ethanol. In Brazil, assistance was provided to strengthen the R and D work of a number of research organizations on the problem of enzymatic hydrolysis of cellulosic materials for the production of ethanol. In China assistance has been provided to the industrial biomass technology demonstration plant and experimental station.

An earlier project in the Philippines has already resulted in the development of a pyrolytic converter to use rural waste.

Projects for coal conversion technology (gasification, liquefaction) in China and India would enable exchange of experience and mutual application of results.

## ENGINEERING INDUSTRIES

### Regional network on agricultural machinery

ESCAP in co-operation with FAO and UNIDO has been successfully executing a project promoting co-operation among ESCAP countries in the development of agricultural machinery. The project is essentially oriented to information dissemination and mechanization of agriculture, including the use of appropriate agricultural tools, equipment and machinery.

### International centre for the promotion of agricultural machinery industry in developing countries

Following the first global consultation meeting on agricultural machinery industry organized by UNIDO in 1979, the People's Republic of China hosted a meeting in 1980 on exchange of experiences and co-operation among developing countries in the development of agricultural machinery industry. The meeting discussed product/production, design and adaptation of equipment, training, service network, installations, information service and research and development. After detailed discussions it unanimously recommended that a centre for the promotion of agricultural machinery industry in developing countries should be set up in Beijing, PRC. A draft project document was prepared and examined by a group of high-level experts who met in Vienna in December 1981.

The proposed project is of a global nature aimed at promotion of technical co-operation among developing countries and at establishing interlink/twinning of specific activities between institutions and manufacturers of developing countries and interested industrialized countries. The project is a "programme network" which will interlink specialized institutions and manufacturers at all levels. The project programmes relate to preparation of industrial/engineering/technological profiles and information dissemination; exchange of experience and promotion of techno-economic discussions; promotion of co-operative applied engineering; manufacturing promotion; technical training. China has proposed a contribution of 7.639 million RMB Yuan towards the cost of the project.

## CHEMICAL INDUSTRIES

### Pesticides

*UNIDO/ESCAP/UNDP* have established a regional network for the production, marketing and control of pesticides in Asia and the Far East. Nine countries of the region participated in this project. The project provides for opportunities for increased co-operation among the countries of the region not only in controlling and monitoring the use of pesticides, but also in exchanging experiences on pesticide formulation, research and development. Mutual co-operation may particularly assist in the development of flexible multi purpose production units.

### Fertilizers

The fertilizer industry in the region needs a comprehensive assistance programme including in some areas direct support to industrial plants and factories and the establishment of industry-oriented training and information centres on both production and application of fertilizers. There is considerable scope for benefiting from the experiences of the more advanced of the developing countries of the region. In this connection a survey on training needs and capabilities in selected developing countries has been completed and a training workshop is proposed to be held in Indonesia. Meetings will also be held on exchange of experiences in the construction and operation of fertilizer plants in the developing countries, on a regional basis. Construction operation and maintenance problems will be handled not only through exchange of experiences but also intensification of in-plant training and training of managers.

## TECHNOLOGICAL CO-OPERATION

### Technological Information Exchange System (TIES)

UNIDO operates a technological information exchange system among technology transfer registries of 32 developing countries. The total number of contracts registered is over 7000. Detailed information on contracts for specific technologies is provided to member institutions. A coding manual for exchange of information on service agreements is in operation. A methodology for evaluation of technology payments as well as guidelines for software licensing agreements are being developed.

A common denominator of technology transfer registries is that they have regulatory, co-ordinating, promotional and monitoring functions. The nature of the national technology transfer policy determines which function dominates. Through the system of TIES (Technological Information Exchange System), significant co-operation has been established among the registries to facilitate exchange of economic and technological information contained in approved and registered contracts. The information is exchanged on a confidential, reciprocal, equal and mutually beneficial basis. In practice, this means that only these registries which supply data to TIES will receive data through TIES/ It also means that when a registry is legally restricted to supplying certain data only, it receives through TIES only data at that level. It is believed that in this way reciprocity would be maintained and co-operative spirit safeguarded.

A further strengthening of TIES would undoubtedly increase the national technological capabilities in negotiating for acquisition of

technology and strengthen the collective bargaining position of the developing countries in the technology market, thus bringing about greater co-operation.

During the relatively short span of its existence, TIES has proved to be an extremely useful co-operative mechanism for developing countries to learn from each others' experiences in acquisition and application of technology, and the technological, financial and legal framework of technology transfer contracts. This has led to improved bargaining and negotiating capability on the part of developing countries in the technology market, where they are still largely dependent on the multi-national and other enterprises of industrialized countries.

Technological Services Delivery System (TCDC)

UNIDO has developed an approach to mobilize the research work of industrial research and service institutions (IRSI) for application to industrial enterprises. This approach was called the "Technological Services Delivery System" in the Philippines. The system provided for linkages between industrial enterprises and research institutes.

Such a system, on a regional basis, has been developed in the Caribbean - the Caribbean Technological Consultancy Service (CTCS). It is conceived as a network mechanism by which the knowledge and skills already accumulated at different institutions on the national level are mobilized to the needs of Caribbean industry and, where appropriate, adopted and transferred to productive enterprises, to make them better adjusted to local circumstances and more self-reliant.

There is scope for linking up national institutions which deliver technological services to industry in each country through networking arrangements, providing for exchange of technical information, mutual referral of problems and their solution through exchange visits, optimum use of specialized facilities, etc.

changes or lead to the adoption of a correction factor. The successful implementation of such a programme would make a significant contribution to participants' competitive effectiveness in international markets.

## INDUSTRIAL TRAINING

### Centres of Excellence Programme

Under this programme the UNIDO Secretariat seeks to identify existing training institutions/centres, assess their capabilities and potential and develop technical co-operation projects, to strengthen such centres to serve both national needs and, as appropriate, those of other developing countries. This programme offers one of the most promising ways of strengthening co-operation among developing countries. After identification and assessment, the selected institutions are assisted to strengthen training capacities and capabilities; to develop a network for improved co-operation among industrial training institutions; and to exchange information on programmes developed to meet the short, medium and long-term needs of developing countries. A survey in the ESCAP region has covered 11 countries. 65 institutions have been assessed so far.

### Training Programme in Diesel Engines, People's Republic of China

Since 1979, an in-plant group training programme has been organized in China every year in the field of operation, maintenance and repair of diesel engines. The objective is to develop middle-level supervisory and technical personnel for the repair and maintenance of diesel engines in developing countries. About 15 persons are trained every year. The training programme is organized by the Shanghai Diesel Engines Works, Shanghai. The project promotes co-operation among developing countries through the exchange of relevant experience and technical information.

Training Programme in agricultural machinery

China is providing facilities at the Zhenjiang Institute of Agricultural Machinery for training of engineers and higher level technicians in the manufacture of small and medium-sized agricultural machinery. About 15 persons will be trained every year in the design, manufacture, construction and performance of small and medium-sized agricultural machinery including working tractors and agricultural implements.