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RURAL INDUSTRIALIZATION IN THAILAND

STRATEGY

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ANNEX 1: Urban Development in Regional Cities

ACRONYMS

ATI	Association of Thai Industries
BOI	Board of Investment
CDG	Carl Duisberg Gesellschaft
CDSS	Country Development Strategy Statement
CIDA	Canadian International Development Agency
DIP	Department of Industrial Promotion
DTEC	Department of Technical and Economic Cooperation
IBRD	International Bank for Reconstruction and Development
IDA	Irish Development Authority
IESC	International Executive Service Corps
IFCT	Industrial Finance Cooperation of Thailand
ILO	Industrial Labor Organization
NESDB	National Economic and Social Development Board
NIDEP	Northeastern Industrial Development Project
NGO	Non-Governmental Organization
RTG	Royal Thai Government
SIFO	Small Industries Finance Office
UNIDO	U. N. Industrial Development Organization

I. Introduction and Summary Conclusions

In February 1984 USAID/Thailand prepared a new Country Development Strategy Statement (CDSS) which recommended substantial changes in the direction of the USAID program. The strategy was based on several key factors -- that Thailand has had over the past twenty years one of the fastest economic growth rates in the world and has emerged as a middle income country; that Thailand has excellent natural and human resources; that USAID is a minor donor in Thailand; and that USAID is shifting from a predominantly grant-financed program to a loan-financed program. Each of these factors dictated a change in USAID philosophy and approach, particularly in pointing out the need for a more collaborative operating style. The Mission concluded that its program should be more concentrated -- a small number of large projects in one or two priority areas -- and more in tune with major policy issues and interests of the Royal Thai Government. After lengthy discussions with RTG policy makers, USAID decided to focus its future program on two major priorities : rural industrialization, and science and technology.

This strategy paper follows up on that initial proposal, answering questions raised during the AID/Washington CDSS review and recommending a strategic approach for rural industrialization. Since the March 1984 Washington review of the CDSS, the Mission has commissioned studies on rural employment/unemployment, rural credit, rural industrial structure, rural demand, and rural industrialization policy. These studies form the basis for the strategy and course of action proposed.

The objectives of USAID's rural industrialization strategy are to promote rural employment, increase rural income, and reduce income disparities between rural regions and the greater Bangkok area. The rationale for this strategy and the interventions proposed to implement this strategy are outlined below and discussed in this paper.

The Government of Thailand anticipates that employment generation will be one of the major problems facing Thai economic development in the medium term. While fertility has been declining rapidly in the past decade and is expected to continue to fall, the high fertility and survival rates of the 1960s and earlier will translate into a rapid increase in the size of the labor force in the years ahead and in potential new family formation. Employment is estimated to be growing by 2.4% annually, compared to 3% growth in the labor force. Agricultural employment growth is down to around 1% and declining. Open unemployment among university graduates is already severe, although some professions (e.g. nursing, engineering) are reported to be in very short supply. The emergence of an employment problem will present a sharp contrast with the labor market conditions of the past. The traditional escape valve -- pushing back the land frontier -- is virtually gone. The more recent escape valve -- several hundred thousand migrant workers in the Middle East and elsewhere -- will probably continue to employ the numbers already there but will not expand significantly. Further, a decline in Middle East development activity could

add substantively to the numbers of skilled and unskilled laborers returning to rural areas.

It is important to understand the ambiguity of applying standard notions of employment and unemployment. With very little observed open unemployment (a little more than 1%), any residual between formal job growth (in manufacturing and services) and labor force growth must be absorbed in agriculture or the informal services sector. (The picture is further complicated by the seasonal swings and the much greater difficulty in an agricultural economy of defining involuntary idleness). Thus agriculture sector employment will continue to grow as required, but at a cost of declining marginal productivity due to a combination of (a) further expansion of cultivation into very marginal lands, and (b) rising disguised unemployment as the land/labor ratio declines in settled areas. Similarly, in the informal services sector, more employment can be absorbed by increasing division of micro retailing and other occupations. At an aggregate level these outlets for new job-seekers will keep official unemployment rates relatively low, but at the cost of restraining growth in per capita income on family farms and depressing wage rates. In sum, without more rapid growth of labor-intensive agricultural intensification along with labor-intensive growth in industry and services, real wages (especially for the unskilled) will stagnate if not decline and regional income inequalities begin to widen again after a long period of narrowing.

Rural industrialization can absorb underemployed rural labor and increase rural wages. To a large extent this industrialization is dependent upon increased rural demand arising from increased income from agricultural production or specialized crop production resulting from agricultural intensification. At the same time certain types of rural industrialization can help promote intensified agricultural production and increased agricultural income. For example, agro-processing industries can lead to area concentrations of provincial demand growth that can, in turn, support demand-linked provincial manufacturing. And more efficient local industries serving local agricultural requirements can reduce agricultural production costs resulting in increased discretionary income to increase demand for other locally produced consumer goods.

The USAID strategy for rural industrialization recognizes that the linkage between agriculture and rural industry is basic to rural industrial growth. The interventions planned to implement this strategy are intended to build on this important linkage.

There are three types of rural industry: 1) on and off-farm "village" based non-agricultural activities such as handicrafts; 2) agro-processing industries which serve both domestic and export markets; and 3) town-based small scale industries serving local and occasionally regional requirements.

On and off-farm "village" industries currently are a major source of income in rural areas. However, the findings of USAID's Rural Off-farm

Employment Assesment Project as well as the experience of other countries indicates that these type of activities are unlikely to be a significant source of employment and income growth in the future. Thus, USAID's strategy does not propose to focus on promotion of this segment of rural industry.

The other two segments of rural industry do have, however, significant potential for increasing rural employment and incomes and are the focus of AID's strategy.

The expansion of agro-processing industries has the potential for increasing rural incomes because of powerful backward linkages to agricultural employment and forward linkages to transport and other sectors. At the same time, agro-processing industries can make an important contribution to production and demand growth by initiating agricultural diversification through the creation of new avenues for agricultural response to external market opportunities. Furthermore, there are strong incentives for locating such industries in rural areas near the source of production. Therefore, the centerpiece of USAID's strategy for rural industrialization is the promotion of agro-industry.

While the RTG and private sector have many of the components required for rapid exploitation of agro-processing, and while the infrastructure such as roads and power are in place to support such industries, the infrastructure has not been fully utilized and certain major constraints to expansion of this industry sector have not been overcome.

These major constraints are medium term credit and the coordinated linking of farm production to industry requirements and industry production to markets. To overcome these constraints, USAID proposes a Rural Industry Development Fund, and a Rural Industrialization Assistance Facility.

Small scale town-based industries such as those producing agrticultural and local consumer goods, while also dependent on the growth of rural incomes do offer extensive possibilities for increased employment and incomes because such industries are numerous and widespread (in 1980 there were about 17,000 such industries outside the greater Bangkok area) and because minimal assistance can result in major improvements. Therefore, a second component implementing USAID's rural industry strategy will focus on these town-based industries. This component will consist of consultative services and entrepreneur training, and a small entrepreneur credit scheme.

Finally, appropriate government policies and regulations will continue to be necessary to stimulate rural industrialization. As a basis for such policies, USAID's strategy will support research and evaluation in this area.

To sum up, the RTG sees employment generation as a major objective in the Sixth Plan period. It hopes to develop a strategy that promotes rural industrialization as one of the important sources of employment

creation. This will require an emphasis on industrial sub-sectors that: a) have strong backward linkage effects on agricultural employment; and b) are labor-intensive. A related objective of rural industrialization is the contribution it can make toward lessening the severe regional imbalance of Thai development.

Although the factors favoring industrial location in the Bangkok region (and the Eastern Seaboard in future) will certainly remain powerful (we review in Annex 1 the apparent trends of Thai urban development strategy), recent years have seen the beginnings of RTG and institutional interest in promoting rural industries, reflected in various programs that have been and will be initiated and expanded. This strategy identifies innovations that have yet to be tried and that seem warranted, and points of leverage where assistance from USAID will help achieve significant expansion of rural industry and rural employment in a fairly short time frame. The development of this USAID program will also contribute significantly to the analysis and planning the RTG is undertaking as it prepares for the Sixth Plan.

II. Background Analyses

A. Present Industrial Structure: Location, Employment and Characteristics

One of the major signs of Thailand's approach to Middle Income Country status has been the rise in the relative importance of manufacturing, which in 1981, at about 21% was approaching the share of agriculture (24%) in GDP. In recent years the manufacturing sector has been growing at two to three times the rate of growth of agriculture.

The concentration of manufacturing in Bangkok and the central region surrounding Bangkok is extreme. About 46% of all manufacturing enterprises are located in Bangkok and 25% in the Central Region, compared with only 29% in the rest of the country. The provinces immediately surrounding Bangkok have seen the fastest growth in manufacturing in recent years. These provinces share the locational advantages of Bangkok without the disadvantages of congestion, pollution and flooding. Thus in terms of manufacturing value added, the Central Region's share rose from 37% in 1968 to 46% in 1977, while Bangkok's share dropped from 40% to 36%, and the rest of the country slipped from 24% to 19%.

For statistical purposes (and following standard practice) small and medium scale enterprises have been defined by number of employees by most of the studies and surveys that have been undertaken in Thailand. For example, one study classifies as cottage those enterprises employing less than 10 workers; small-scale, between 10-49; medium, 50-200; large, more than 200. In 1980, 63% of manufacturing enterprises were cottage, 30% small-scale, 5% medium, and a scant 1.3% large.

The size distribution categories are only an approximation for the substantive differences that typify the characteristic groupings of manufacturing enterprises in Thailand. Virtually all village-based manufacturing falls into the cottage category, with the labor for each "enterprise" consisting entirely of the individual family. Products include items for own-use or village sale, and some items (in some locations) for commercial sale through sub-contracting arrangements, e.g. cotton and silk weaving, and wood carving. Production processes are labor intensive and rudimentary. Small-scale industries tend to be more "modern" in the sense of being located in the towns, utilizing some electric-power driven equipment, hiring labor outside the family (amounting to about half of small-scale employees), and including the partnership and limited company forms of organization in addition to sole proprietorship. Many of these more "modern" enterprises fall statistically into the cottage category based on number of employees, although their economic characteristics are quite different.

Medium scale enterprises include food and non-food agro-processing, tobacco, textiles, chemicals and metals. While many small-scale enterprises in the Bangkok region sell to trading houses for export, few such enterprises outside the Bangkok region produce export products (outside agro-processing). Provincial enterprises have strong local linkages in terms of ownership and labor, use of local or regionally derived raw materials in the case of agro-processing, and sale of output (except for agro-processing for Bangkok and export). Local or regional linkages with respect to intermediate inputs in manufacturing (other than agricultural raw material) are very weak, with most such inputs purchased from Bangkok.

Seasonality of operation seems to be much wider in provincial manufacturing than in the Bangkok region. In addition to the marked seasonality of agricultural raw material supplies, firms catering to local demand for agricultural inputs and equipment and a variety of consumer goods also experience wide seasonal swings in demand.

Labor and working conditions show some significant differences between small and medium scale enterprises. Smaller enterprises tend to pay more by piece-work. Workers put in long hours and 7-day work weeks to earn higher total wages than are often available from medium scale employment. Still, the small enterprises tend to lose workers to the larger ones that may pay minimum wages (or less, especially for the first six months on the job) but require workers only to put in regular shifts and regular hours. Thus the small-scale shops are serving the classic function of feeding apprentice-trained workers to the larger scale enterprises.

The key distinction is a spatial one. With the objective of promoting more decentralized employment creation in off-farm activities, we divide Thailand into three areas as a first generalization to set the framework of the analysis: "greater" Bangkok (including Bangkok municipality and the five immediately surrounding changwats), the Eastern

Seaboard project area, and the rest of the country. The Eastern Seaboard development will in effect create a second Bangkok and will induce the location around its deep-sea ports of most new "foot-loose" industries or of Bangkok-based industries seeking to escape from the capital's rising costs and diseconomies. Thus the problems of industrial location to help generate employment in rural areas falls into the third area, even though the Eastern Seaboard project is just getting underway.

The third area is rightly called rural, since most provincial urban areas have very small populations and spatial extension, and with very few exceptions (e.g. tourism in Chiang Mai and the beach resorts) have an economic base that is linked almost entirely to agriculture and to the immediately surrounding area. Within the rural industrial sector the most meaningful distinctions for the understanding of the sector's dynamics, and for consideration of possible policy and program options, are as follows:

a) village off-farm or household (usually defined as "non-farm") activities - including handicraft production for own-use or for sale, largely a dry season occupation;

b) town industry enterprises;

c) locally-owned medium-scale enterprises processing agricultural commodities for Bangkok and export;

d) Bangkok-owned medium and larger-scale agro-processing;

The distinction between provincial and Bangkok enterprise ownership is critical for understanding location patterns of investment and for developing financial and technical assistance interventions tailored to provincial requirements. While there are locally-owned enterprises with more than 200 employees (at least during peak work periods), these tend to fall into an intermediate classification if measured by size of fixed capital. As in many countries, the larger provincial enterprises, including those family enterprises that have matured from family-management to hired professional management and that have plants in different locations, often locate their headquarters in the metropolitan center. The distinction between Bangkok and provincial location of enterprise ownership is important for: a) the access of the enterprise to banking headquarters and the center of Thailand's informal credit market; b) knowledge of, and access to government agencies with responsibilities for regulation, benefits and technical services; and c) relative need for promotional services.

B. Policy Framework

In addition to the effects of the powerful agglomeration pull of the Bangkok region, and the social aspects of family enterprise formation and expansion, investment decisions on location of industry are also strongly affected by the overall policy framework that has developed over the past years as the RTG has sought to promote the country's economic growth.

Policies and programs that help determine the scope and profitability of rural industries can be divided into those that increase supply elasticities (e.g. technical assistance and advisory services) and profitability (credit, infrastructure, the trade regime, industrial incentives); and those that affect the level and rate of growth of rural household demand (agriculture taxation and pricing, research and extension programs, infrastructure). In general, policies designed to promote exports based on a developing country's comparative advantages in agricultural commodities, rather than highly protective policies designed to promote urban-based import substitution, impart both a demand-increasing effect on rural household incomes and a rural location effect on agro-processing and demand linked industries.

It is clear that the net effect of RTG policies in these areas, even taking account the incentives for provincial location (preferential reductions in business and corporate income taxes; double deduction from taxable profits of the cost of transportation, electricity and water; additional deduction for depreciation; credit incentives from IFCT and the Bank of Thailand; establishment of industrial estates), has been negligible in the light of RTG policy to promote decentralization.

From a macro-economic perspective, the two areas with dominant impact on rural industrialization (and on related questions of firm size and labor-intensity of production technology) concern import versus export-oriented industrialization incentive systems, and the taxation/pricing structure affecting rural household income.

Agriculture price/taxation policies stretching back several decades have long been recognized as having the effect (besides food price stabilization) of transfering agricultural sector surplus to the government and urban industrial sectors, and of keeping urban food prices low. The depressing effects of these policies on rural income have been reinforced by the trade regime and industrialization promoting policies that have strengthened Bangkok's agglomeration advantages and produced (even if inadvertently) negative effective rates of protection on agro-processing industry.

Since the early 1980s however, the general direction of RTG policies in these areas has been more favorable to rural industrialization and to the growth of agricultural income. The tariff structure is being rationalized in a way which reduces the bias against rural industry. The RTG is moving toward automaticity in the administration of BOI incentives and privileges which should make it easier for rural firms to obtain these benefits. The government is also focusing on the needs of several of the rural industrialization support agencies in order to enhance their performance. (Action in this area is noted in Section V.B 1.) Most importantly, there has been significant movement in the direction of maintaining a better price structure in agriculture, including sharp reductions in commodity export taxes.

It is too early to know how much difference these moves will make to the growth of provincial income, the development of rural demand for products in which provincial enterprises would have competitive advantages over Bangkok firms (or imports), or the extent to which incremental rural income will "leak" to the Bangkok region based on preference for Bangkok-produced goods. In addition, general policies favorable to rural income growth will have different effects in different parts of the country, based in large part on the natural variations in agricultural potential (soil, water, etc.) and on the differential availability of improved agricultural technologies for the irrigated versus rain-fed areas and for the country's different climatic zones.

C. Rural Industrialization in Other Countries

A brief review of experience in other countries (some references reviewed are listed in the bibliography) provides useful information to USAID and the RTG in formulating rural industrialization strategies, especially in pointing out that expectations should be modest, and that there is not likely to be a large-scale shift in the rural-urban industry balance. (The strategy proposed here is not broad-scale, nor does it envisage shifting of existing investment or rapid urban development. Instead it focuses on specific products, builds on economic and social factors favorable to provincial investment, and proposes experimentation in outreach of technical assistance aimed at improvements in enterprise efficiency).

One perspective comes from the efforts of a number of countries to promote industrial decentralization or relocation to particular "backward regions"; these large scale strategies have generally failed because the regions have had poor resource endowments and low income levels compared with other competing areas of these countries. A second perspective is sectoral, where countries have promoted rural industrialization agencies and centers, general incentives for rural investment location, special credit or other measures aimed at relieving specific constraints, etc. As best we can judge from a quick scan, these programs have been supply-side oriented, and have little impact by themselves on the level of industrial activity. It is clear from an ILO study of rural industrialization programs in over a dozen countries of Africa and Asia that although the programs had varied objectives and content, and suffered from different weaknesses, the few cases where significant rural industrialization did occur were in countries where demand conditions were such as to set the stage for substantial linkages with rural enterprises. Even in these cases, the identifiable effect of the programs themselves appeared to be limited. In the Punjab case the agriculture implements industry is reported to have developed without benefit of any government interventions. The case of China is a major exception in terms of the relative contribution of rural versus urban-based industry. While China appears to hold few lessons for market economies or countries with substantially different political systems (and the Tanzanian effort to encourage rural industries on the Chinese model, through the Ujamaa village program, yielded little result), it is

noteworthy that the local demand for agricultural inputs, consumer goods and much of what was produced in local rural industries on a mini scale, could not be met by any other source, due to the extreme transport limitations and the paucity of capital available for major urban production for distribution to rural areas. (In recent years emphasis has shifted toward more capital-intensive modern technology industries). Taiwan is also an exception, but it may prove the rule. The island is small and the rural extension of industry is largely clustered along a central north-south highway in what might be termed a suburban rather than rural settlement pattern.

III. Contraints to Rural Industrialization

Specific constraints are discussed in Section V. Nonetheless, there are three general types of constraints and opportunities which should be highlighted.

A. The Pull of Bangkok

Location in Bangkok offers firms many advantages and cost savings that cannot be duplicated anywhere else in Thailand. The savings stem from the economies of agglomeration. The concentration, or agglomeration, of many manufacturing and other facilities in the same urban area results in cost savings for individual firms for several reasons. The aggregate demand of many plants in the same area creates opportunities for the operation of complementary firms providing specialized services and manufacture of miscellaneous component parts. Without such complementary firms, individual plants must provide all such components themselves or acquire them from less specialized and less efficient sources, or acquire them at greater transport cost. A second source of cost savings comes from the lower inventories each individual firm needs to hold when it is located in an area with large aggregate inputs spread out over many wholesaling and other level enterprises. Third is the much greater scope for joint use of facilities. Fourth is low transport costs to the country's principal market, and in the case of Bangkok, proximity to the Gulf of Thailand for international shipping. And fifth there is the powerful effect of the economies to individual firms of location at the seat of government.

If Thailand were to follow the pattern of spatial development in location theory, the large differences between the Bangkok area and the rest of the country in terms of manufacturing characteristics would gradually lessen over time as more areas moved up a sectoral "diversification ladder" which would also involve moving from traditional (food, textiles), to semi-modern (clothing, shoes, rubber products, non-metalic minerals) to modern products (metallurgy, engineering).

> "No nation is dichotomous - a single metropolitan area and a single undeveloped hinterland - and the shifting of sectoral patterns of production areas of typical middle sized and large LDCs may be grouped into several

> categories: outside a national metropolis centered in the region of greatest industrial output, there will be a first-order inner ring consisting of nearby cities and urban agglomerations of different sizes. Beyond them, but still linked by strong ties to the national center, are first-order hinterland areas with a less dense urban network and few large centers. Elsewhere there exist other regions, which can range from regional metropolitan areas, their second-order inner rings, and their second-order hinterlands, to peripheral regions where development has only recently begun to take place" 1/

Over time these regions are seen to move up a diversification ladder with the national metropolis in the lead, followed by the regional centers and their inner rings, their hinterlands, and lastly the periphery, and with diversification involving gradual shift from traditional to modern manufacturing activities.

Thailand is an extreme case of agglomeration of industry centered around the national metropolis, more closely approaching the dichotomous condition than most developing countries. It would be unrealistic to believe (nor does the RTG believe) that a rapid transformation of the periphery (which includes much of the country's area and population) would be a possible or wise development strategy.

On the other hand, there are some off-setting factors at work. Agglomeration has raised land prices in Bangkok; wage rates are higher;congestion costs are very high and appear to be rising daily; the drawing down of groundwater is causing rapid subsidence and an enormous flooding problem; subsidence also requires firms with very heavy machinery to build more costly foundations for their buildings.

These negative factors for location in Bangkok city itself are already resulting in industrial location in peripheral areas in the surrounding provinces. While the negative factors are said to have been taken into account in occasional decisions to locate further out in the provinces, there is no evidence that any significant weakening of the Bangkok region's agglomeration pull is emerging.

There are some positive factors, however, working in favor of provincial location. The most obvious industrial sub-sector in which provincial areas have the greatest competitive advantage is agro-processing. For many crops that Thailand now produces, or could produce competitively, the agro-processing facilities required to convert

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1/ Dillinger and Hamer, "Sources of Growth in Manufacturing Development of Non-Metropolitan Areas", World Bank, Urban Development Dept. 1982.

the crops to intermediate or final stage form must locate near the source of supply for reasons of perishability or transport costs. Provincial agro-processing is already a major element of off-farm activity, and should comprise a large fraction of industrial investment in the provinces for some time to come.

Less apparent than the agro-processing options are the local manufacturing opportunities where provincial location offers certain advantages vis-a-vis Bangkok based on local demand for differentiated products, or on competitive advantages which evolve from close ties with local marketing systems. These advantages may be reinforced by somewhat lower labor costs or other factors that by themselves would not weigh heavily in location decisions. While the range of products or scale of production involved would not be significant enough to change the Bangkok/provincial distribution of industry, these opportunities are not trivial and should be promoted more effectively than is now the case.

B. Home-Town Preference of Investors

Most provincial enterprises are small and medium scale. Virtually all small and medium scale enterprises are family-owned and family-run. The family ownership-management pattern has a strong effect on industrial location decisions, probably over-riding some of the strictly economic considerations that are incorporated in location theory.

As observed in other developing countries, provincial manufacturing enterprises in Thailand are most often owned and run by people born in the town where the enterprise is located. Typically the owner (and/or his or her father, even grandfather) started out as a local trader of an agricultural commodity (or a wholesaler and/or retailer of some manufactured goods), then began to process the same commodity (or produce the same manufactures) on a small scale. The more successful or aggressive entrepreneurs plow back their profits and scale up their operations, often diversifying as they expand. They send one or more children through technical and business administration education to bring higher-trained skills into the business. Public disclosure of their finances or operations is not required, nor is bookkeeping maintained in a manner that would result in full liability to business taxation.

In sum, preference for privacy (if not secrecy), the thin line between family personal and business finances, and the social pattern of family staffing of enterprise management mean that enterprise location is closely tied to the residence location of the ownership. The preference of Bangkok residents to remain in Bangkok is well known. The preference of provincial business families to remain in their home towns is probably less well understood but may be a strong factor on which provincial industrialization can build.

One element in this preference is the historical fact that the essential form of collateral acceptable to the commercial banks -

local land (which includes structures) - had been acquired by many families years before and has now appreciated to values that support significant borrowing capacity. Since land values are significantly higher in Bangkok this difference gives Bangkok entrepreneurs another competitive advantage over provincial entrepreneurs. Larger-scale manufacturing requires commensurately large collateral; provincial entrepreneurs seldom have sufficient collateral.

By the same token, measures designed to induce Bangkok family enterprises to shift location of existing plant would have to include very powerful incentives. There is little encouragement from other countries' experience that decentralization by shifting can be feasible. Decentralization through establishment of new branches (of Bangkok-based firms) in provincial locations may offer some possibilities in some products, but again, family management is likely to reject large distance separation of plant from home base (new branch decentralization of "modern" corporations has also not proven an easy route to rural industrialization in other countries, although obviously less difficult to induce than plant shifting). Nevertheless, there are apparent opportunities for inducing Bangkok businesses to invest in new capacity up-country in products with wide rural markets, especially where some provincial production (by provincial entrepreneurs) already demonstrates its feasibility and where market expansion provides room for additional regional production capacity.

C. Capital and Credit: Large vs Small Enterprises

The present examination of the extent to which finance is a barrier to rural industrialization has taken place at a time when the financial system of Thailand is under temporary strain that could distort the picture and exaggerate how severe credit constraints are in normal times. In response to a sharp increase in 1983 in external debt, and a deterioration in the balance of payments, the Bank of Thailand acted in early 1984 to constrict domestic bank credit. This was done through imposition of a ceiling on the allowable increase in overdraft accounts compared with the ceiling the commercial banks had granted any individual borrower as of the end of 1983. In the case of the many accounts that had already been granted permission to exceed their 1983 ceilings, the Bank of Thailand ruling forced contraction and call for debt repayments that placed many enterprises and individuals under immediate financial pressure.

Widespread secondary repercussions took place in an important segment of the informal credit market, the so-called "chit funds" or "share funds". These funds are informal arrangements, traditionally among groups of people who know and trust each other. The members contribute set amounts monthly to a pool that is taken up by the member (among those wishing to borrow that month) who "bids" the highest interest. At any time a member may be a pure lender, pure borrower, or both at once. Many funds collapsed in early 1984, when net lenders expecting to meet their monthly obligations by drawing on their commercial bank overdraft accounts were suddenly called by their banks to reduce their outstanding overdraft balances. Checks that

has been written as (post-dated) "collateral" bounced throughout the country, leading to a widespread reversion to cash transactions (check use is only now - August 1984 - said to be recovering). In addition, the credit contraction came on top of a series of widely publicized failures, beginning late in 1983, of several informal (if not illegal) financial operations, known as finance companies, that had become popular as an alternative to formal savings accounts.

The strain this situation has placed on many enterprises reflects the underlying weakness of a business financing system in which small and medium enterprises must rely (directly or indirectly) on short-term credit roll-overs to finance medium-term working capital needs and long-term credit for capital equipment. Thus the present situation would be justification enough to search for alternative approaches that would help shift the smaller and higher risk end of the industrial sector into a formal credit system with time structures commensurate with loan uses as those enjoyed by larger enterprises. Apart from the demonstration of the risks - for the borrowers - inherent in the informal credit system, there are sharp differences of judgement among different analysts as to the extent to which credit in normal circumstances is a constraint on the formation or growth of small and medium enterprises.

Binswanger et al (IBRD, Ref. 4) conclude that credit is not a serious constraint on rural industry. They find that start-up finance for investment in plant and equipment is obtained largely from entrepreneurs' personal savings, friends and relatives, and from various personal lending systems without mediation of formal financial institutions. All writers on the Thai financial system agree on this point. For a small percentage of enterprises in rural areas (almost entirely the larger enterprises), fixed capital requirements are met in part by loans from the formal system institutions (IFCT, etc.). Binswanger notes agribusiness lending is a major proportion of total commercial bank lending, and cites the rapid growth of several agribusiness sectors - rice mills, cassava chipping and pelletizing factories, agricultural machinery and animal-feed industries, and private road transport serving these industries. He concludes that "difficulties of obtaining credit cannot have been a major constraint in the agribusiness sectors." On the other hand he notes the distinction between the larger and smaller enterprises within the agribusiness sector and the relatively more important role of working capital for those enterprises with typically low ratios of fixed capital to labor. Even for this end of the sector however, he points to research that has found "very little indication that credit is a major problem .... final demand was almost inevitably identified as the overriding constraint." He concludes however with a final reservation - that the credit structure and low fixed capitalization of small enterprises may represent an adaptation to the difficulties of access to the formal credit system and to the higher transactions costs of credit in scattered rural areas for formal institutions not geared for lending to small business.

The more common judgement has been that a) credit, especially for working capital is a serious constraint; b) that the informal credit

market imposes much higher interest rates than the formal system, with estimates ranging from a 5-7% premium (over commercial bank rates) on loans extended by friends and relatives, to rates charged by input suppliers averaging around 100% and ranging up to over 200%; c) that these constraints fall most heavily on small enterprises and are more severe in the provinces than in the Bangkok regions.

We have concluded that credit and capitalization are significant constraints - but for different reasons for the two sub-sectors of special interest for rural industrialization, i.e. agro-processing, and town-based small-scale entrepreneurs. Taking the agro-processing sub-sector first, it is important to note that in general it appears that Thai industrial enterprises operate with high debt/equity ratio capitalization. The local securities market for mobilizing public savings through corporate share ownership is very thin, and family enterprises still dominate the country's industrial structure, including the interconnections between manufacturing enterprises and the closely-owned commercial banks. For all enterprises that have arms-length relationships with their banks, this high dependence on debt raises the degree of firm exposure to financial difficulties, especially for new ventures, for two reasons. First, the gestation period before the venture starts earning profits may be saddled with high up-front interest and amortization costs, posing a cash flow problem. Second, fixed pay-out obligations will be a relatively high regular charge each year, regardless of the firm's profit position. For agro-processing enterprises launching new ventures in new crops, this generic problem poses special difficulties. They tend to have gestation periods extending 5-10 years during which their working capital requirements call for medium-term structured debt (if not a greater initial proportion of equity financing). With their fixed capital needs tending to be met by personal informal financing sources, and their short-term financing needs relatively easily met by commercial bank financing, there is a gap in the middle that should be filled by equity or by medium-term loan financing, that in fact most often is filled by roll-over of short-term debt, or by decapitalization, which in the case of some firms brings on failure. To help meet this particular financing need in rural industrialization, it will be useful for Thailand to have specially dedicated funds.

Turning to the town-based entrepreneurs, the credit picture in Thailand is more complicated than either of the characterizations above, but appears closer to Binswanger's reservation than to his conclusion that credit is not a serious constraint. Before describing our understanding of the role of credit in rural industrialization in Thailand, it will be useful to summarize briefly the general picture with respect to rural (and small-scale) credit in developing countries, drawing on Anderson's 1982 review of the literature (Ref. 15). He finds the following common characteristics: a) universal commercial bank disinterest in the small end of the business sector; b) administration and monitoring are more costly for small sized loans; c) default and business failure rates of small enterprises are high; d) the interest rates that would be necessary to cover the much higher risk factor, in the case of loans to small enterprises,

would be legally and/or politically unacceptable (which is not the case in the informal credit market). As a result, commercial banks exclude the small entrepreneurs.

The rural enterprise credit situation in Thailand is strikingly different from Anderson's characterization. First, there are remarkable differences among the banks as to their size; extent of provincial branch networks; headquarters policy respecting expansion and a search for new customers, which means largely smaller accounts; and general competitive or conservative management. The leading three or four banks tend to have large networks and have been aggressively expanding in rural areas, especially in the past few years. Second, the Bank of Thailand has been putting pressure on the banking system to expand in the provinces, to increase the proportion of lending to the agriculture sector, and to reduce the past net flow of resources to Bangkok by imposing minimum local loan/deposit ratios on the branches up-country. Third, there are also sharp differences among branch managers, even among branches of the same bank, respecting their aggressiveness in seeking new accounts and their flexibility in applying the traditional loan criteria versus taking account of the enterprise's potential through even relatively informal project "appraisal".

Fourth, in the intensely competitive atmosphere of the past two or three years, one or two of the leading banks at least report a considerable expansion of their lending to smaller clients. Risk appears to be seen as varying more by type of business than by size of establishment. Commerce was reported to be judged less risky generally than manufacturing. Fifth, the spread between interest charged to best and to weakest borrowers is only 1.5%. Relative risk is reflected in the amount of collateral required of the borrower. Particularly in the case of provincial branches, the decision to lend appears to depend to a considerable extent on the personal knowledge the branch manager has of the borrower and whether or not the borrower has collateral (usually land and structures), or guarantors, to cover the credit. Since little weight is yet put on project analysis, and collateral valued in excess of the loan amount is standard practice, the banks appear to be following the practice Anderson reports as a general finding, viz. screening out risk almost entirely. Default rates are said to be low, but data on loans that are weak in one sense or another is not available in a form that would show distinctions by industry or firm size. The screening appears largely to be self-administered. That is, few borrowers are said to be turned away, presumably because the public knows banking practices and would not bother to apply without the requisite collateral.

Sixth, the cost of processing a loan may not vary much by size of loan or enterprise. Since little confidence is placed in a borrower's disclosed records, the absence of such records does not seem to be a barrier to borrowing as long as the borrower can provide a core of information on expected cash flow, and little or no branch staff time is spent analyzing such records. The key processing task is said to be the check on the ownership and market value of the collateral. The time required for site

visit and record checking probably varies little by the size or value of the land parcel(s) offered. Processing costs for lending a given volume of funds of course will be higher, the more the number of loans - i.e. the lower the average loan size.

Seventh, aside from the natural advantages (expressed for example in the loan/collateral ratio required) the locally wealthy and influential normally have, the banking system does not appear to practice systematic discrimination against small sized borrowing. A large venture with inadequate collateral, or involving an uncertain outcome, might well have more of a problem getting commercial bank loans than a small operator with a steady commercial business, known for his reliability. Discrimination against small loans derives from the unequal distribution of collateral assets.

Eighth, outside the formal banking system, the informal credit market remains very important for enterprises of all sizes. The informal market provides credit to people who have long relied, at least in part, on the share fund system as a social in addition to financial practice; people who lack sufficient collateral to gain entry to the commercial banks; enterprises that need short-term funds in excess of what their collateral will enable them to borrow from commercial banks; and people who prefer to obtain funds that are not formally recorded. The informal market is complex, includes different loan sources (e.g. individuals, trade credit, share funds, pawnbrokers), and is of major importance to Thailand's financial system.

In recent years, smaller firms appear to have become more dependent on the informal market. In some particular industries the reliance on non-institutional sources is especially high (e.g. furniture, garments, fruit and vegetable processing). Since the largest single informal source, the share funds (especially since they became organized on a large scale by share fund finance companies), depends heavily on individuals who feed credit into the funds by drawing on their overdraft accounts with the commercial banks (i.e. these individuals are serving as financial intermediaries linking the formal and informal markets), the informal rates are generally higher than the commercial bank interest rates. While informal credit mainly is used to finance working capital needs, smaller enterprises have been found to finance 10-30% of their fixed capital through the informal market. In most cases credit duration is about one year. Small enterprises are able to gain easy access to the informal market because no collateral is required other than post-dated checks, assuming personal reputation is acceptable. The recent crisis aside, default is unusual and the risk to lenders is perceived to be low.

Finally, loan maturities are short. Banks will sometimes lend up to five years, but most loans are shorter, and much financing of small enterprises appears to be limited to loans of one year duration or overdraft drawing privilege (which may amount to the same thing in practice). Given the limited resources and outreach thus far of IFCT, and the very short

maturities normal to the informal credit market, there is a general problem of excess reliance on very short-term credit. As long as a firm's cash flow enables it to obtain a roll-over of its short-term debt from its commercial bank, the financing system is adequate. But for long-gestation projects with very uncertain cash-flow profiles in the initial years (as stressed above in the case of agro-processing), or for any enterprise that gets caught in a cyclical recession or credit squeeze, having borrowed short to finance longer gestating investment, the system holds high risks for its lack of institutionalized intermediate credit.

What is the upshot? As far as rural industrialization is concerned, the conservative practices of bank branches regarding collateral are a significant constraint on new entry to small-scale manufacturing and on the scale of any new or expansion investment project, unrelated to the inherent needs or potentialities of the project. Conservative practices respecting maturities similarly also constrain less well established enterprises and expose enterprises with limited collateral to severe financial risk during gestation periods or times of general economic contraction. While the financial system does not appear to impart any bias against provincial commercial enterprises (especially as the branches have expanded provincial coverage so rapidly in the past few years), it may harbor a significant bias in the lower land valuations for collateral (mentioned above) and certainly contains no concessions that would act as off-sets to the urban bias of general industrialization policy described earlier.

Small enterprises appear to be placed at a disadvantage relative to large enterprises because of their more limited collateral (land) ownership, and their consequent heavier reliance on the more expensive credit of the informal market. Considering that the smaller enterprises have been found to be reliable borrowers and apparently earn sufficient profit to afford the higher informal interest rates, and that the banks are said to regard large manufacturing ventures as riskier than small ones, one might plausibly conclude that the "conservative" and traditional lending practices of the formal system are in effect (and paradoxically) discriminating against their best potential clients. The situation of the smaller industrial enterprises and of the agro-processing industry appears clear enough, however, to establish the need for initiatives such as those proposed herein for USAID during the Sixth Plan period.

Finally, a recently completed USAID financed study of the status of rural industries in Thailand (Ref. 17) indicates the magnitude of the demand for rural industrial credit and the limitations on meeting this demand by the banking system.

The study indicated that 22% of the firms surveyed planned expansions requiring 276 million baht in additional financing. Half of this financing was expected to come from commercial banks. The remainder would have to come from other sources. If these figures are extrapolated to all rural businesses with the same characteristics as those in the sample

the current demand for credit from existing rural firms beyond that expected to come from commercial banks is on the order of half a billion dollars. This study also found that 57% of the firms surveyed indicated that adequate finance was either the most important or second most important constraint to expansion.

IV. Strategy

The objectives of USAID's rural industrialization strategy are to promote rural employment, increase rural income, and reduce income disparities between the greater Bangkok area and rural regions.

A. Basic Elements

To the extent that it has been possible to take account of other country experience, we conclude that a feasible approach to rural industrialization at this stage of Thailand's economic development, commensurate with a realistic appraisal of what is likely to yield results in the Thai economic context, should comprise the following:

a) avoidance of costly and distorting incentives for up-country location;

b) continued strengthening of a policy framework supporting rural income growth and industrial investments and reducing the urban bias of trade and investment promotion policies;

c) a focus on agro-processing industries;

d) a search for low-cost outreach to town entrepreneurs, and improved credit access, to help increase their efficiency and enhance their growth capabilities; and

e) attention to demonstrable constraints within the context of a demand-based strategy.

To state the essential points briefly:

a) economies of agglomeration and transportation will continue to favor Bangkok (and the Eastern Seaboard) for virtually all "foot-loose" industries and all manufacturing of consumer products with significant economics of scale in their production processes; thus, incentives to off-set these advantages would have to be powerful and costly, and (to the extent the incentives worked) would distort the location structure of Thai industry. Apart from agro-processing, growth of rural income is fundamental for the development of provincial industries.

b) agro-processing is by far the major industrial sub-sector that locates in the provinces, based on the economies of the processes involved. In addition, the growth of this sub-sector is linked to exports, not to the growth of local demand; indeed, agro-processing is the major rural industry option with backward linkage effects to rural incomes;

c) while town-based small-scale industries serving local demand (mainly consumer goods, construction and agriculture inputs) are constrained mainly by local demand growth (i.e. the growth of agricultural income in the surrounding areas), there are opportunities for increasing efficiency, improving the prospects of entrepreneurs who have above-average capability for expansion, and promoting more rapid development of enterprises responding to selected local manufacturing opportunities.

d) certain constraints appear particularly severe for rural industry and should be addressed to enhance the prospects of rural location of the manufacture of those products that have such potential.

While it is believed that the strategy proposed here contains activities that will strengthen off-farm employment and industralization outside the Bangkok-Eastern Seaboard area, including some activities with considerable potential for provincial income and for export earnings, the activities themselves do not address the underlying determinants of industrial location in Thailand, viz. the weak demand-industrial linkages that can be anticipated from near-term urban growth in provincial areas, or the long-term provincial income growth problems discussed above. Urbanization as a special perspective of provincial income growth deserves to be high-lighted and is discussed briefly in the following paragraphs.

Many policy issues surround the problem of urban growth outside Bangkok - the proportional allocation of public sector urban development funds between Bangkok and the rest of the country's municipalities, municipal government and provincial taxation and expenditure authority, allocation of resources for infrastructure weaknesses up-country, etc. The urbanization pattern in Thailand is of such importance for the location of industry that its essential features are referred to throughout this paper, and described separately in Annex 1.

As explained in the Annex, Thailand has had a policy of promoting a few regional cities that are well located as transport and commercial centers. While development of infrastructure, universities and regional centers for various government services has helped to foster rapid growth in the populations and economic activity of these cities, their economies remain very small in relation to Bangkok and their economic hinterland modest. The policy has not had much power to off-set the pull of the Bangkok region for urban development or industrial location, either in terms of its municipal facilities development projects, policies discouraging Bangkok location, shift of authority to municipal government, or allocation of external development funds. The Eastern Seaboard, and the need to prevent further deterioration of Bangkok's infrastructure, will

continue to limit the resources available for urban development in Thailand's regional cities.

We do not conclude from this, however, that a major regional urbanization option is being neglected that would create a basis for provincial location of new industries or for a shift of industries from Bangkok. The geography of Thailand virtually forecloses development of rival metropolitan areas. On the other hand, more rapid growth of provincial towns or regional cities, would create stronger linkage effects for local production of those products that would have local location advantages.

The emphasis in this paper on agro-industry should not be interpreted as suggesting neglect of other industries despite their apparent relatively modest scope for expansion and employment generation in the near term. Technical and funding institutional arrangements for rural industrialization will need to be able to provide useful assistance to these groups, and should be alert to promotional opportunities.

B. Focus: Agro-Processing

The responsiveness of Thai farmers to market demand and the price mechanism has been amply demonstrated as has the ability of the agro-processing industry to penetrate foreign markets and to call forward farmer response. Agro-processing provides the widest possible backward linkage effects to agriculture sector employment and income generation, and also generates substantial employment in inland transportation and other linked service activities. Thailand is very competitive in agriculture commodities; the opportunities to develop commercial production in higher-valued crops represent the only significant source of income growth in much of the rural areas. Local or regional demand growth for consumer goods will take place but will be a slowly developing basis for up-country manufacturing.

An essential aspect therefore, of the strategy described here for promoting employment and income in the inter-linked agriculture and agro-processing sectors, is a new role for the processing industries. Until recently the processing industries serving Thai agriculture have played a passive role. That is, between the lead taken by the export merchants and the response of the farmers, the milling and other processing enterprises served as incidental (even if technically necessary) facilitating intermediaries. In the recent tobacco and pineapple cases, the processing enterprises have taken the lead, calling forth domestic production to be able to sell the processed product in export markets that were sought out by the processors. What is seen here is an approach in which the rural industrial enterprise regularly plays the initiating lead role, identifying potential markets and making the necessary market connections, developing a deliberate raw commodity supply strategy in specific areas and with specific arrangements for an effective interface with the farmers, and then bringing

the completely integrated concept into effect, including of course the establishment of the processing venture(s).

The success of agro-processing ventures has depended on the ability of the enterprise to put into place (or at least solve the problem of) every link in the process between raw material production and final sale of finished product. Another way of putting the essential point of departure is that while selected "horizontal" attention to policies, institutional framework, and skills and other inputs is important (and some of these elements are proposed for inclusion in this strategy), the most effective intervention would be a "vertical" project-by-project approach that facilitated the identification of specific product markets, and put into place an entire integrated set of activities required to produce and deliver those products on a case by case basis.

As the RTG has recognized, the various interventions introduced in recent years -- working capital credit facilities, investment capital, feasibility studies, incentives and benefits, market promotion activities, technical services etc. remain inadequate in scale and poorly coordinated. The inability of such interventions to have significant impact in Thailand, or in other countries, is especially acute in areas outside the major agglomeration centers, in the absence of strong demand pull. The key focus of the agro-processing strategy should be to link the whole process to specific market opportunities, while paying special attention to the specific problems that have been demonstrated time and again to plague agro-processing enterprises in Thailand.

Lessons of Past Failures. The history of Thai agricultural processing investment is littered with stories of failed ventures. Failure among new manufacturing ventures is a universal phenomenon of course, reflecting many problems such as changes in market conditions and miscalculations, unfavorable price trends for inputs and/or products, inefficient management, etc. In Thailand these failures, especially where a new venture is based on a relatively new or minor crop, have stemmed from two major problems, probably the most difficult of which lies at the interface between the processing enterprise and the supplying farmers. Few agricultural enterprises in Thailand have acquired land to internalize production of their raw commodity input needs; most must arrange to buy their commodities from a domestic market that sometimes pose severe difficulties of reliable volume, timing of delivery and quality of produce offered. In the past few years, processing firms working with different commodities have tried various approaches to overcome this constraint. It is worth describing some of these individual experiences to illustrate the problems involved, the lessons learned and the implications for a strategy focused on agro-processing.

One of the most conspicuous failures of recent years was a tomato venture in Chiengmai. The firm is reported to have invited farmers in the region to deliver tomatos to the factory through collecting middlemen, without making clear exactly what the buying arrangements were

to be. On the first round, the grading was performed at the factory and 60% of the produce was rejected. Having no alternative arrangements with the farmers for disposal of unaccepted produce in the local markets for other uses, the truckers dumped the remainders at the plant site rather than transport them back. Word quickly spread and supply dried up. The factory closed and is now rusting away.

A second key problem has been the workings of the classic cobweb pattern in agricultural production. Thai farmers have amply demonstrated their sensitivity to prices and to price expectations. For agricultural processing firms facing the farmer supply market on one side and the processed commodity demand on the other side, wide swings in price can have very severe effects on profitability, even on the viability of the enterprise where the ownership is unable or unwilling to sit out a period of losses and/or sheer inactivity. As illustrated in the experience of groundnuts and kenaf processing enterprises, the processing firm may find that supplies of the raw commodity have dried up either (a) because farmers changed crops after an earlier decline in world market prices of the processed commodity; or (b) because farmers sold to other buyers as the price of the commodity for an alternative use market moved above the maximum price the processing firm could offer and still break even.

The viability of processing plants has been shown to rest on a firmer base when the enterprise has the flexibility in its machinery to switch from one product to another, and the marketing connections to make that a profitable strategy. A second requirement is that firms must have access to sufficient working capital to ride out cyclical periods of inactivity or operating losses.

Other recent ventures have developed effective relations with farmer suppliers that have both assured raw material quality and supply to the firms and guaranteed sale for the farmers. Pineapple, tobacco, chickens, and baby corn are among the products for which processing enterprises have made successful purchasing arrangements with farmers. These arrangements have taken different forms of contractual informal or open-market relations between the firms and individual farmers.

The seasonality of fruits and vegetables also creates inventory problems for many processors that run up large inventories of the processed product immediately after harvest when the entire perishable volume must be processed within days. This problem is exacerbated by shortages of working capital.

Export Demand. The proposed focus on agro-processing builds on Thailand's most evident comparative advantage in world trade. In general the scope for major expansion of Thai agro-processed products lies in a) growing demand in markets for specific items (e.g. for speciality food items for the growing U.S. Oriental and Latin "ethnic" markets, or in response to changing diet and tastes in many markets); b) opportunities for displacing established suppliers that are losing competitiveness in

labor-intensive agricultural products as their wage costs rise (Taiwan is the key example); and c) opportunities promoting market demand for new food items. The first two of these sources comprise the opportunities easiest for Thai exporters to exploit, and should be the focus of the promotional activities proposed. The market development of "new" demand is a more difficult route, in most cases feasible only in conjunction with joint venture or other close commercial relationships between the Thai producer and a marketing enterprise in the importing country.

Thai producers/exporters (as well as Taiwanese enterprises) seem well aware of the opportunities that will open gradually as Taiwanese production costs continue to rise. For the purposes of this strategy it was not possible, nor was it judged necessary, to conduct a world market demand study to demonstrate the potential profitability of incremental investment in higher-valued agricultural production in Thailand and in associated agro-processing facilities. One detailed study (financed in 1983 by USAID) of the markets for selected processed fruits and vegetables in the U.S., Japan, Hong Kong, and Singapore (Neese & Leeper, Post-Harvest Institute for Perishables, University of Idaho) illustrates both the potentialities of these items.

Various marketing channels were explored - supermarket chains, importers/wholesalers, manufacturers and the institutional trade. Asparagus, tropical fruit purees, dried fruits, water chestnuts, bamboo shoots, baby corn, canned mixed fruit, and cashews were among the items with identified potential. The study notes that except for pineapple, Thai processing facilities appear inadequate for processing the volumes of the items they explored and identified as feasible for expanded Thai sales.

C. Rural Industry and Agriculture Intensification

It needs to be stressed that rural industrialization is not an alternative to provincial employment generation through agricultural intensification. However, USAID agrees with the stress NESDB proposes to put on a previously haphazardly treated sector, and proposes to accept NESDB's invitation that USAID focus on rural industrialization - along the lines suggested herein, for two main reasons: First, attention to rural industrialization does not imply any lessening of attention by the RTG and the major donors on the work being done to promote agricultural intensification. As explained at length in USAID's paper "USAID/Thailand FY-1986 CDSS, Supplementary Paper on the Thai Agriculture Sector", June 1984, it is unlikely that the agricultural institutional base in Thailand can manage any significant additional structural change or additional donor project load of the size that would be involved should USAID develop a major new set of agricultural activities. Second, the focus on agro-processing in fact aims squarely at agricultural intensification (through the emphases on higher-valued crops and on new arrangements for raising farmer productivity), but through a private-sector vertical approach, as contrasted with broad, horizontal institutional strategies. Intensification has been integral to the crops and enterprise strategies we would hope to emulate,

but it has been limited to the areas and supplying farmers directly involved, rather than being attempted throughout large regions. (This characterization of course no longer applies to cassava.) The main thrust of the proposed rural industrialization strategy would complement the broad intensification programs. The articulation would be most direct through the proposed emphasis on the irrigation projects, explained below.

V. Specific Constraints and Ameliorating Mechanisms

A. Agro-Processing Industry

The centerpiece of USAID's strategy to promote rural employment, increase rural income, and reduce regional income disparities will be a program to develop and expand the major potential rural industry with strong backward and forward linkages to employment - the agro-processing industry. The major constraints to expansion of this industry are assured sources of supply, access to markets, and medium term credit. To ameliorate these constraints, two mechanisms are proposed - a rural industrial development fund, and a rural industrialization facility.

1. Rural Industry Development Fund

To ameliorate the medium term credit financing constraint to the development of agro-processing industries, USAID proposes a rural industry development fund. Activities of the fund would be closely related to those of the facility although borrowers from the fund would not be limited to those assisted by the facility.

While details of the arrangements have not been worked out at this early stage in program conception we envision that this fund would operate through both IFCT and commercial banks. Such an approach will strengthen the fund by bringing together IFCT's growing project appraisal capability and the capacity of the commercial banks large branch network. The anticipated outcome of this arrangement would be that IFCT's lending program expands in rural areas, while commercial bank activity in rural areas expands in the direction of developing and assisting new ventures on a project appraisal basis rather than primarily on the basis of collateral. The early introduction of commercial banks to customers through this industry development fund will also facilitate a continuing relationship between agro-industry ventures and commercial sources of credit.

2. Rural Industrialization Facility

This facility will be a small, aggressive unit, placed in an appropriate organization. It will be charged with promoting agro-processing investment, including the completely integrated, "vertical package", described below, from on-farm production to final marketing. The facility will have staff capabilities in every link: agronomy, agriculture economics, food and agriculture commodity processing, business

finance and administration, export and domestic marketing. In addition, intimate knowledge of Thai business practices, of the operation of rural markets, and of the functions and working of relevant RTG agencies will be essential. The facility will have the flexibility to pay the market wages necessary to hire first-rate staff, and will have funds available for hiring consultants to complement its own staff as required.

The task of the facility will be to promote packages in which new ventures establish new processing plants, based on carefully designed arrangements with farmers to ensure the required supplies and quality control of the raw commodities as well as processed products, and linked to well researched and established markets. The facility will have the analytic capacity (and be able to commission outside research if necessary) to monitor the situation of the agro-processing industries in order to ensure that it maintains close knowledge of factors that will enable it to provide the best possible guidance to new ventures; and to help arrange technical, financial or other inputs required in individual cases to complete a viable production and marketing strategy; or assist an on-going venture that runs into problems.

Problems of sustaining production of uniform crops have contributed to the long gestation periods of some agro-processing enterprises. The facility will give close attention to processors' plans for technical supervision, especially in the case of new crops not previously cultivated in Thailand or crops that must be cultivated so as to achieve uniform size or other characteristics required in the processed markets, in contrast with the variability that it is normally acceptable in Thailand's domestic markets for fresh produce. While the use of foreign technical expertise does not guarantee that acceptable results will be obtained, joint ventures or other arrangements can help Thai ventures tap expertise that may not be available in Thailand (or not easily mobilized for a specific venture's immediate technical needs).

Interface with the farmers. The need for careful attention to farmer suppliers is essential. Particularly in the case of new enterprises, or of enterprises whose management (domestic or foreign) is inexperienced in rural market conditions in Thailand, the facility will assist in the consideration of alternative contract farming methods already being used in different parts of Thailand, and will also consider innovative new approaches where these seem especially suitable, e.g. the cooperative produce marketing arrangements developed in the flower export business under IFCT financing. One or two NGO's in Thailand have already begun to develop experience in organizing farm communities for commercial production of food items (for example for sale to the Bangkok hotel market), where the NGO operates as the marketing channel. Such organizations under contract to the facility might also serve as the interface between an enterprise and a community of farmers, at least in the initial period when problems of financial arrangements, quality screening and pricing,delivery schedules, technical assistance and input provisions, etc. are being worked out and revised. An NGO with requisite experience could ensure that communication

and mutual understanding, and farmer confidence in the intentions of the enterprise (factors often responsible for venture failures in the past) would be established and maintained during the break-in season or two in particular.

Production Credit. In the case of packages where the production of particular crops that will meet quality standards requires the farmers to apply fertilizer, pesticides or other inputs, it is important to ensure adequate financing of their credit needs by reliable institutional sources so that credit failure does not emerge as a broken link in the chain, and so that the enterprise is not forced to add farm credit to its own working capital needs. While an enterprise may succeed in borrowing enough working capital from its commercial bank to finance on-lending to farmers, such a pass-through has risks the firm may not be prepared to bear. In the event of crop failure, the firm would have to repay the bank credit from its capital resources or refinance until the next crop. Two bad years in a row might force the collapse of the average enterprise so exposed. To insure that credit is not a constraint to farmers' production for assisted agro-processing industries, the facility will be closely linked to existing sources of such credit. These sources are the Bank for Agriculture and Agricultural Cooperatives (BAAC) and to some extent, commercial banks. The BAAC is Thailand's largest institutional source of credit for farmers and has its own program of farmer organization built around input storage depots. But commercial banks are also interested in providing production credit particularly if risks and administrative burdens can be minimized as they would be with farmers linked to a reliable 'market' - the agro-processing facility.

Focus on Irrigation Projects. An early focus of this facility is likely to be on the encouragement of agro-processing industries in certain irrigation projects. Several of the medium sized irrigation projects in Thailand remain substantially under-utilized in the dry season because farmers prefer to return to the off-farm employment that has long been the pattern of dry season activity, rather than switch to dry-season cultivation. The off-farm pattern provides a greater degree of certainty regarding employment and income than does the allocation of time to dry-season production of crops for which the markets and expected prices are very uncertain. The under-utilization of these projects remains a serious problem for the RTG which is concerned over the low rate of return being earned on large sunk investments and for farmers who are unable to maximize their land's potential. The experience at the AID-assisted Lam Nam Oon project is instructive in this regard; the production that has been achieved has relied heavily on the combination of guarantees and the successful effort of the project management to create a solid market for groundnuts by inducing a Northeast enterprise to set up a shelling plant in a town near the irrigation project site. In an ADB-assisted project, also in the Northeast, dry-season production is entirely devoted to rice; a recent evaluation of the project recognizes that development of higher valued alternative commercial crops will be essential for putting farmers in position to continue to raise their

incomes. The irrigation projects have the potential for producing supplies of commercial crops that will not compete in time for labor allocated to the main wet season (a particular labor supply problem in the Northeast). These projects also have natural communities of farmers and government services personnel that can demonstrably lend themselves to the organization requirements for reliable production for agro-processing enterprises. A small backlog of agricultural research has been building up around these projects that probably exceeds the knowledge that is available on dry season agriculture elsewhere. Also, USAID has a particularly good network of contacts and relationships with individuals in Thailand who have had some of the most extensive experience in irrigation outside the Central Plain and in the particular problems of marketing associated with these projects. The Meklong is another irrigation project in a different region (West), where the possibilities of mutually reinforcing strategies between agriculture and agro-processing industries appear promising.

A focus on irrigation project areas is attractive because of the multiplier effects such projects can have through the concentration of their income effects within discrete areas. An analysis of the Muda irrigation project in Malaysia has shown substantial second-round income effects in the surrounding region through the purchases by project farmers of agriculture inputs and consumer products. (The reference was not available during the drafting of this strategy, but the ratio of incremental project income to incremental income generated outside the project is believed to be about 3/2.) Put another way, an area concentration of the income increases stemming from new agro-processing and raw material production packages, can also serve to create significant local demand-linkages for further development of local small scale enterprises. Clearly, this type of facility will not be easy to design and will require substantial work during project preparation. But the existence of such a facility will enhance the expected positive influence of the rural industry development fund.

B. Small Enterprise Assistance Program

While the development and expansion of agro-processing ventures offers the prime opportunity for USAID assistance to promote rural employment, increase rural income, and reduce regional income disparities, the development and expansion of a broad range of small scale rural town based industries offers substantial possibilities for employment and income generation. Therefore, a second element of USAID's rural industry strategy will be a Small Enterprise Assistance Program.

It is clear that the demand constraint is the overarching problem of rural industries, except agro-processing for export or Bangkok consumption, however, there are a variety of problems internal to the individual enterprises that also serve to hamper their expansion, contribute to enterprise failure, reduce efficiency and the rate of return to investment and lower even further the modest scope for local location economies through inter-firm purchasing in competition with industry in

Bangkok. We have reviewed a number of these constraints to identify which are relatively important, and to develop approaches including activities which USAID will support.

The two major constraints that will be addressed in the Small Enterprise Assistance Program are the need for technical and management information and the need for capital and working credit. These constraints will be ameliorated by strengthening and augmenting existing RTG small industry assistance programs and expanding the use of the private sector in delivering these programs, and by creating a small entrepreneur credit scheme.

1. Technical and Management Information

The Problem. There is a wide range of technical management efficiency among Thai manufacturing enterprises. As is commonly the case in industrial sectors in developing countries located outside the main industrial agglomeration centers these enterprises tend to be small, utilize labor-intensive technologies often with second-hand equipment and machines with multiple uses, and are owned and managed by entrepreneurs with modest formal education and rare formal engineering or managerial training. The IBRD study of the engineering industries in Thailand spells out in detail the kinds of variation found in specific manufacturing functions. Bookkeeping is found to be primitive or entirely absent in a large number of small and medium enterprises. Without proper accounting, enterpreneurs cannot determine the efficiency of their business and lack a basis for any production or marketing analysis of even the simplest kind. For enterpreneurs who otherwise have the potential to develop profitable enterprises and graduate from small to medium or larger scale, absence of proper bookkeeping may be the single most important constraint. Plant lay-out, work flow, machine calibration, and inventory handling are commonly found to be haphazard.

In small enterprises the technical skills of the employees are generally learned on the job, and presumably do not much exceed the technical skills of the employer. The skill levels are presumptively sufficient for the requirements of their customers, but probably limit expansion or diversification. Larger enterprises have access to formal labor markets, and there is little evidence in Thailand that semi-skilled labor, at least, is a constraint on enterprise performance or expansion. The ability of the economy to export several hundred thousand workers to the Middle East and elsewhere, of whom 64% were listed as skilled (1982) and 11% as semi-skilled, without discernible wage pressure or other evidence of shortages, indicates the state of the labor market for many skills, especially those used in construction. On the other hand, manufacturers uniformly report that new hires for semi-skilled jobs have to be trained on the job (even those with formal technical education).

These problems do not mean that the small end of the enterprise range is insignificant or inefficient as a whole, or unworthy of

technical attention. Many of the medium-scale enterprises start out on a very small scale, while even the very small ones that survive can continue to play an important role, even in highly industrialized economies, as specialized suppliers to larger firms with which they develop market linkages. (This is borne out by Japanese experience in rural industrialization.) Much of the dynamic growth in the metal working and mechanical enterprises sector of the Punjab has been in enterprises averaging less than 6 workers, and showing many of the characteristics noted above, especially the informal backgrounds of the entrepreneurs and the total reliance on on-the-job training.

While high caliber private technical, managerial and marketing consultative services are available in Bangkok (and of course to larger enterprises in the provinces, especially those with headquarters in Bangkok) on a fee basis, they cannot serve the needs of small provincial manufacturing enterprises. The rare joint venture with a foreign firm is available to an occasional enterprise, but the major source of technical know-how (as noted above) is the equipment supplier and the copying of printed materials on other manufacturers' products. Because there are very limited inter-industry linkages and very little manufacturing on a sub-contracting basis for Bangkok-based industry, the informal flow of technology and management suggestions from advanced manufacturing customer firms (that has been a major technology transmission route for Korean exporters, for example) is yet to begin operating in Thai provicial industry.

Thus the principal source for technical upgrading (other than equipment suppliers), especially for small enterprises, is government.

RTG Programs to Transfer Skills to Small Enterprises. The RTG has attempted to provide technical assistance services to rural industry for a number of years and is considering several measures to strengthen the capacity of the existing agencies and develop new approaches. Past efforts have been inadequate in scale and limited in content. Apart from any difficulties individual agencies have had for various reasons, the small size, large numbers and wide geographic dispersion of rural industrial enterprises presents a formidable challenge to any effort to reach a substantial number of entrepreneurs in a cost-effective manner. A comparison of potential benefits and costs of mounting substantial extension-type services for rural industries would be difficult to make. It is clear, however, from the results of a survey done for an IBRD engineering study (Ref. 16), the results of the enterprise survey done for USAID (Ref. 17), and from the participation and discussions in the dialogue the RTG has just begun to undertake (described below) with the provincial private sector, that the scope for technical improvement in the sector is substantial, that the RTG is placing some priority (apparently fairly high in the next Plan period) on a sector previously neglected, and that the community of rural entrepreneurs has a high "felt need" for some of the services the RTG should be in position to offer more effectively.

The RTG has set up coordinating machinery to bring together the various ministries and agencies with responsibilities for rural industrialization. A Rural Industrialization Sub-committee (of the overall Rural Development Committee chaired by the Prime Minister) acts as a senior policy coordinating group, and is chaired by a deputy minister of the Ministry of Industry and administered by a Secretary who holds a senior position in NESDB. The Sub-committee has two working groups, one on operations planning and one on technology. There are appears to be concensus that working coordination of RTG functions respecting rural industry should be vested in the Department of Industrial Promotion (DIP) in the Ministry of Industry, and that DIP will need to be strengthened to carry out this function. Strengthening might include reorganization of DIP's headquarters and creation of larger and more numerous regional coordinating offices. With technical assistance relationships well established between DIP and CIDA, UNIDO and the Dutch aid program, the Ministry of Industry is in position to obtain TA from several sources.

Responsibility for providing technical and promotional services to rural industries rests with DIP. DIP has seven divisions offering a variety of programs and services. Enterpreneur training programs are conducted by two of these divisions, including intensive short courses held in provincial centers. An Industrial Service Institute in Chiang Mai (similar to the ISI located in Bangkok) provides technical information, training and consultative services, and undertakes surveys and product development. The Chiang Mai ISI has contributed substantially to the development of the handicraft industries there, designed mainly for the tourist trade. Two other divisions promote handicrafts amd cottage industries. A separate division is devoted to the textile industry. The Industrial Productivity Division (the Thailand Management Development and Productivity Centre) conducts seminars and courses in management and offers various consulting services.

The main shortcomings of DIP appear to be the limited outreach of its various programs, in particular its outreach to town-based entrepreneurs, and the need to strengthen its promotion services relative to its technical services. Limited outreach is due to limited funding. Several initiatives have been launched aimed at these shortcomings. A series of regional seminars are being conducted that bring together large numbers of RTG technical and other officials with entrepreneurs from within each area. The seminars have been preceded by wide publicity, have included prominent speakers and technical lectures on management and on RTG promotional services, and have offered counselling to individual entrepreneurs in "clinic" sessions. DIP has a program for follow-up (by the ISIs) to individual requests made during the clinics, but its staff limitations would not be able to meet a really large-scale agenda of individual requests, were the clinic system to reach every province on a recurrent basis. Other DIP projects to establish regional offices and investment and technical consulting services in provincial zones are being formulated.

At a higher "policy" level the RTG has continued the dialogue between the public and private sectors under the auspices of the Joint Public Private Sector Consultative Committee. The work of this committee is partially supported with funding under USAID's Private Sector in Development Project. In the past year the RTG has extended this dialogue to areas outside Bangkok by initiating what is planned to be a series of up-country meetings of the Committee. The private sector has responded enthusiastically to this initiative.

While the regional seminars have been effective initial efforts of a dialoguing character, they need to be followed up with systematic programs. One approach NESDB hopes to develop is in the area of communication and the planning process. That is, it has been recognized that the omission of the private off-farm sector from the rural development planning framework that encompasses all the provinces (and is the only such decentralized system giving scope for communication of needs and preferences from rural jurisdictions up through the provincial administrations to Bangkok) now needs to be corrected. Just how this will be done remains to be developed.

The RTG may decide to repeat the regional seminars, say on an annual basis, depending on the results of the evaluation that will be done after the first round is completed. The seminars could serve as occasions for broad discussions between government and private representatives in which the RTG would communicate its current thinking about general policies and programs and solicit private sector reaction, the private sector could communicate its current views, and general review could be made of progress in increasing the availability of technical and other services under current programs or otherwise coping with problems identified at the previous meeting.

The RTG is also considering the possible incorporation of a provincial industrial sector chapter in the annual provincial development plans, as noted above. It is not clear at this stage what implications that might have for budget funds, or whether the intent would be to use such an exercise as one focal point for trying to rationalize and improve the flow of government services.

Proposed Initiatives. Returning to the problem of how to reach a significant fraction of rural industrial enterprises interested in technical production services (the demand for which the RTG is deliberately stimulating, as described above), it would appear sensible over the next few years to experiment with approaches that are much more flexible, informal and mobile than the programs that have been developed hitherto while at the same time strengthening and expanding those programs of proven value. Informality in the transmission of technical advice to individual firms should not be misinterpreted as a second-class or unprofessional approach. Although international debate on technology transfer has focused on patent and other devices for protecting proprietary knowledge, on the costs of proprietary transfers, limitations on the role of

multi-national subsidiaries, etc., the technical needs of the vast majority of the enterprises in rural Thailand are very basic and largely in the public domain. Furthermore the effectiveness of informal, person-to-person technical advice has been demonstrated even in the more sophisticated case of Korean export manufacturing enterprises, where much of their technology improvement derived from factory visits of technical personnel from the firms in other countries that were buying the Korean products as intermediate inputs, and that wanted to ensure that the Korean products would meet specifications. During these visits the foreign technicians observed factory operations and made on-the-spot suggestions while bringing new technological information to their hosts' attention.

To provide the transfer of technology required by small enterprises the strategy envisions strengthening DIP's regional industrial development centers and linking them with rural chambers of commerce and industry to provide Thai consultative services to small rural businesses in a manner similar to that provided by U.S. executives to larger Thai firms under the International Executive Service Corps. In addition, a small industry extension service would be created to augment DIP's entrepreneur training program.

a) Consultative Services. Two types of services are envisioned under the Thai analogue to IESC. For the relatively small numbers of firms of large size and more sophisticated engineering personnel and management, a fee charging short term consultancy service is proposed. (It is important in this context to distinguish between those larger rural industrial enterprises that are Bangkok-owned or form part of a larger group of enterprises with highly skilled engineering and management capabilities, and those enterprises that are truly locally owned by rural or small city entrepreneurs. The former need no special assistance or concessional rate access to technical services.) Although Thailand possesses considerable engineering and enterprise management talent in the advanced private sector, in consulting firms and in academic circles, an effective system and regular business practice of bringing low-efficiency rural enterprises together with consulting advice from these sources does not exist. For many of the relatively large rural enterprises, especially if they do not recognize the exact nature of their production or management weaknesses, the hiring of such consultative services may seem a costly and exotic idea.

To help expand the market for local consulting engineering services, and to help the weaker enterprises in particular cover the costs of hiring a fair block of expert time, a local executive service is proposed that would a) actively seek out the larger rural industrial firms and show them how they can benefit from consulting technical services, b) provide individual technical and managerial consulting service on a subsidized fee basis.

For the large numbers of very small enterprises, a separate service is proposed that would provide technical advice, or "trouble- shooting," without charge to the enterprises. The service would

be a low-cost operation, using volunteers (retired or mid-career) interested in performing public service. In the case of mini-enterprises, technical weaknesses that can be corrected without sustantial cost to the entrepreneur (e.g. work flow, routine maintenance practice) can be identified very rapidly by an experienced production manager. If properly arranged by a provincial chamber, a two or three day visit by such a person could include short visits and consultations with a good number of the small mechanical, electrical or other industrial enterprises of a provincial capital. One could not realistically expect such a program would have broad impact on rural industrialization, but there may be few other cost effective options for the kind of personal expert look that technology transfer requires at that level of enterprise, and a low-cost, short visit program would at least have the merit of being a feasible method of giving the smallest end of the rural industrial spectrum a sense of participation in a segment of the rural development program that had been designed for their individual benefit.

b) Entrepreneur Training - Small Industry Extension Service. The executive service corps programs are devices through which generally-experienced production people can identify or respond to the problems of individual enterprises, which will be particular to each case. These services are essentially "trouble-shooting", and although they can be very valuable they do not address the needs of individual entrepreneurs to upgrade those skills (of themselves personally or of senior employees in the case of medium scale enterprises) that can be acquired only through systematic training. There are many facilities for systematic training in business skills in Thailand. Most of these facilities feed the larger enterprises and the main urban industrial region of Bangkok, either because they are located in Bangkok or because their graduates are normally picked up only by larger enterprises interested in hiring people with specialized training. The RTG has several programs for village and town entrepreneurs training. To the extent that there is scope for some significant impact on rural industrial growth through increases in entrepreneurial capabilities, within the constraints of demand limitation, such scope will be found in the town-based activities.

While the DIP Entrepreneur Training programs are high quality, they do not have the capability of reaching large numbers of town entrepreneurs except over a fairly long period of time. In order to extend the service coverage much wider and quicker, and yet be certain to address the really critical skills that comprise the most important constraints to entrepreneurial efficiency and the profitability of small enterprises, consideration will be given to developing an outreach system based on industrial extension, comparable to agriculture extension. While DIP has industry extension officers, they are not numerous and they are located only in Bangkok and Chiang Mai. The essentials would be as follows:

1. Identify the key skill and knowledge problems of small entrepreneurs. Focus on those that can be solved through an improvement in the entrepreneur's personal skills (or those of his senior

management staff) without additional capital expenditure, for example, bookkeeping, work flow and layout.

2. Develop a five-year program that would initiate training programs in the small cities and towns with the greatest concentration of industrial enterprises. These might total (say) 50 locations. Compared with the extension clientele in agriculture, the number of entrepreneur clients would be quite small, and should enable an extension program to provide greater time and higher percentage coverage than would be possible in agriculture.

3. Develop a corps of industrial extension agents who would have only training responsibilities, leaving undisturbed all the administrative and regulatory aspects of industry currently assigned to the 48 provincial industry officers of the Ministry of Industry.

4. Develop a very simple curriculum on the key skill problems. Needless to say, the curriculum must fit the circumstances of up-country entrepreneurs.

5. The clientele should be trained in small units of incremental skill, each unit being usable as it is learned. The division of the material into small units would avoid the need for time-consuming training sesions that would keep an enterpreneur away from his business for long periods.

The RTG is already sensitive to the need to develop some coordination at the provincial level of the various services available to rural industry. The focus of the initial activities described above has been to inform the local business community of the services that are now available and to gain access to them. As new services based on outreach concepts, such as those proposed here, come into operation, establishment of a provincial coordinating mechanism will be important for ensuring that the various programs take advantage of their potential for reinforcing each other, that the various public and private sector people involved in both resident and mobile services know of each others' presence and activities, and that the potential clientele are assisted to know about the increasing menu of services and how to benefit from them. For example, an executive service consultant visitor should know what training or other services the particular entrepreneurs are receiving, so that he may add further reinforcement and advisory service to what the clients are receiving from other programs.

2. Small Entrepreneur Credit Scheme

In an attempt to cut through the complex credit picture, it may be useful to note a parallel with the problems of small farmer credit, from which we may draw some programmatic conclusions. It is often argued that agricultural credit must be administered in such a manner as to lower transaction costs and to channel funds to farmers who are

essentially credit-worthy, based on their personal abilities and energies (and honesty), and on the likely success (weather aside) of their production plans, even if their physical assets would amount to insufficient collateral to cover the working capital credit needed to finance the production plan. Similarly, among small industry entrepreneurs there is a range of capabilities and reliability - a range of the distribution of human capital - that determines the (unequal) distribution of credit-worthiness, apart from the collateral position at any point in time. Capable entrepreneurs who manage to run an enterprise continuously for several years (or better, to show some expansion over a few years), while relying heavily on high cost informal credit, must be running an inherently profitable operation to be able to have sustained that high interest outflow over the period. If it were possible to develop a program that could a) identify the lower-risk end of the range of small-scale entrepreneurs, and b) channel credit to them at relatively low collateral-to-loan ratios, on the repayment schedules and interest levels of the formal banking system, the funding required could be kept to modest levels, at least during an initial (say, 5-year) testing period, while the risk premium the banks would need to charge would be much lower than if the full range of enterprises were being accomodated (as has been the case for the informal credit systems). It is important to repeat that we are talking here of small rather than medium scale enterprises, especially since the medium scale will have access to a new credit guarantee scheme (under IFCT administration). Since the IFCT scheme will require loan reviews by the guarantee staff, it will not be a feasible facility for large numbers of very small entrepreneurs, many of whose loan requirements in any case will fall below the guarantee minimum of Baht100,000.

An experimental program to channel credit to the small entrepreneurs could have the following characteristics: 1) eligibility would be determined by a combination of reliance on personal characteristics, on at least (say) three years of continuous operation (especially if growth can be demonstrated), or some percentage of guarantee by a third party of demonstrable financial stability, in addition to the bank's judgement regarding the viability of the proposed uses of the funds; 2) if necessary, the borrower would have to bring his (internal) bookkeeping practices up to some minimum standard; 3) the risk could be further reduced and the planned use of the funds strengthened if the borrower had obtained technical and management services from DIP or other RTG services available (if an industry extension system as proposed above were in operation, the involvement of such an officer could strengthen the planned use of the funds and provide additional weight to the borrowers credit-worthiness); 4) initiation of such a program in a selected few changwat municipalities that are experiencing strong overall economic development would provide additional support, compared with loans to small entrepreneurs located in towns with stagnant economies; 5) criteria could be set for maximum loan eligibility, e.g. up to the minimum size at which the guarantee fund will operate; this could be handled through a two-step loan, under which funds provided under AID terms to the Bank of Thailand would be on-lent to the commercial banks at the agreed concessional rate. In practice the system could be operated as a rediscount facility so that unused funds would not be

tied up in any particular bank that was participating in the program but not actively moving the resources; and 6) criteria would also have to be set for eligible uses - industrial, not trading; retirement of short-term debts in the informal market; investment or working capital for expansion, etc.

The Small Industries Finance Office (SIFO) does not appear to be an option at this time as a channel for funds for small enterprises. Set up over 20 years ago, SIFO has not been able to develop a significant loan program for several reasons - funding, legal status, staffing, review procedures, and divided responsibilities with the Krung Thai (government) bank. Legislation has been pending for some time that would establish SIFO on a better corporate or state enterprise legal basis, but resolution of its status and problems is not yet in sight.

C. Policy Dialogue

In order for the RTG to determine appropriate rural industrialization policy continued research, monitoring, and evaluation is essential. Therefore, a research and evaluation program is the important third component of the rural industrialization strategy. The various determinants and dynamic sources of investment decisions will be studied for better understanding of the factors influencing regional growth and distribution of industry - relative costs and economies; relative deficiencies of the financial system; certain infrastructure problems (especially telecommunications); the sociology of enterprise formation in the provinces; the determinants of transition from family to "modern" enterprise structure (i.e. wider ownership, professional management), etc. Particularly useful will be research that identifies specified specific non-agricultural products that could be manufactured competitively in the provinces, both for purposes of general promotion and for monitoring to identify cases where investment in greater Bangkok might be pre-empting provincial location and that might be diverted up-country, within existing policies and regulations, if the benefits of that option were properly taken into account and promoted. Macroeconomic determinants will also need to be understood and monitored to identify policies that might need changing or strengthening - effective rates of protection of agro-processing; rural/urban terms of trade and other factors affecting provincial income growth; urban and capital-intensity bias of trade and promotion policies, etc. The specific objectives of the programs underway, or those proposed here, should be closely monitored, especially those that, could lay the basis for larger resource inputs from IBRD or elsewhere if they prove effective. Monitoring should include such things as number and location of clients reached, and impact on their operations; investment and employment generated; agriculture production linkages and rural income effects; failures and defaults, etc. Attention will also be given to potential negative effects of provincial industrialization.

VI. Relationship With Other Donor Activities

The major potential source of external finance in agro-industry is the World Bank, followed by the Netherlands. IBRD has been discussing several possibilities with the Bank of Thailand, BOI and other agencies in Thailand, over the past two years. The latest industry mission visited Thailand at about the same time this strategy exercise began, enabling USAID to establish liaison and get a current reading on the status of RTG/IBRD discussions.

IBRD has been pursuing four lines: 1) engineering industries - an engineering industry development institute, providing institute, providing information and technical assistance (Japanese OECF is interested); plus financing for projects approved by the institute; a working document has been prepared, a second mission will be planned, and development would probably take 2-3 years; 2) export industries - the Export Promotion Centre, in coordination with ATI, is preparing a proposal; Japan has reportedly offered $20 million but no project ideas have yet been developed; 3) rural industries - some ideas have been formulated but this category is still in a very early stage of thinking; and 4) agro-industry - where initial discussion has focused on possible strengthening of various government departments.

Beyond possible future IBRD efforts, the number of donors and projects targeted on rural industrialization is few. In developing this strategy, several meetings were held with DTEC, DIP and concerned donors to identify on-going and planned activities and to discuss the ideas and proposed activities contained herein. Field programs in technical assistance and entrepreneurial training provided by DIP were visited, including the DIP/UNIDO rural industry promotion project now operating as a pilot scheme in the Northeast.

The DIP/UNIDO project is particularly interesting as an effort to provide outreach consultative services. Based in Udon and serving entrepreneurs in the four provinces of Udon Thani, Nongkhai, Sakon Nakorn and Loei, the Northeastern Industrial Development Project (NIDEP) offers a full range of consultative services in response to the requests of local entrepreneurs. It also plays a promotional role by identifying potentialities for new products and for growth of existing enterprises, and by encouraging and assisting enterpreneurs design expansion projects and obtain financing, especially from IFCT. Through direct communications with foreign data banks and sources in UNIDO and industrial countries, this small energetic unit (6 persons) has also been able to establish contacts between provincial enterprises and external sources of technical expertise and potential joint venture partners. Although NIDEP has been in operation less than two years, a plan has been developed for replication in other areas. An evaluation of the pilot is scheduled for October 1984. While NIDEP's record even in this short period indicates the great difference between Bangkok and regionally based promotional services, NIDEP has thus far focused on medium-scale enterprises and the larger potential

investments, and depends heavily on luring entrepreneurs to its office. Although the NIDEP concept represents a substantial step forward in terms of outreach, it is not designed to provide extended, resident outreach services for provincial areas comparable to the blanket coverage of agriculture extension, nor could it be a cost-effective approach toward provision of even rudimentary services to the smaller-scale enterprises.

Another small DIP project in early phase of development is the Carl Duisberg Gesellschaft (CDG) and Irish Development Authority (IDA) joint venture to establish a National Small Industry Program. The project has organized entrepreneurial "clinics" in provincial locations, that have gotten wide publicity and appear to have generated wide expectations of follow-up for which detailed plans have not been developed yet. The project is also establishing a Business Opportunity Center in Bangkok which compiles and disseminates information on investment potentials. It remains to be seen to what extent this program can provide on-going services to provincial entrepreneurs. Effective links would need to be established between this center and NIDEP to form an outreach network. There are also some problems of coordination and communication among the different divisions within DIP that are responsible for the department's various entrepreneurial service and training programs.

Two projects in the design stage may also relate to the activities proposed herein. A project being considered by the Japanese aid program would establish two regional industrial promotion centers to assist rural small and medium enterprises. A CIDA program would set up a training center for process industries. In general, given the paucity of outreach services, there is room for several activities and for some experimentation. Detailed discussions with each of these donors and the relevant RTG agencies will be pursued during preparation of the PP to ensure adequate coordination is established, that inconsistent approaches are not being developed, and that the recurrent budget and absorptive capacity of the pertinent agencies is not being exceeded.

VII. Relationship to USAID's Program

The rural industrialization strategy is closely related to and builds on many past AID activities. Although these activities were not focused on rural industry, they contributed to the strengthening of Thailand's institutional structures that serve private sector needs. They included assistance to BOI reorganization and training, survey work and training for the Ministry of Industry, assistance to the Ministry of Commerce in insurance, commodities market, and export promotion, technical assistance in monetary and banking policy to the Ministry of Finance and Bank of Thailand, technical and capital assistance to IFCT, and training and technical assistance for the Labor Department, among others.

The rural industrialization strategy builds on and is based in part on experience with current on-going efforts to alleviate constraints on the private sector's development. These programs include the Private

Sector in Development Project, the PRE grant funded Institute for Management Education in Thailand (IMET), and PRE's loan to the Siam Commercial Bank.

The strategy also recognizes the significance to rural industrialization of projects to promote agricultural production such as those in our on-going $65 million portfolio of agricultural projects. Work under the Lam Nam Oon, NESSI, Seeds II, and NERAD projects is particularly important to developing the inputs agro-processing facilities require.

Finally, this strategy is also related to various activities which may be supported under our science and technology program. Examples of how S&T progams are linked to rural industrialization are:

1. Some of the proposed research topics in bioscience would address current problems of commodity utilization and quality that, if resolved, could increase the available supplies for agro-processors, or develop new processing investment opportunities (new uses for cassava). Tissue culture and cloning techniques may accelerate development of uniformity and commercial acceptability of processed fruits, vegetables or other crops that could gain acceptance in export markets and thus create opportunities for new investment in processing facilities in rural areas.

2. R&D applied to certain non-agricultural raw materials (where utilization involves processing near the raw material site because of significant weight loss in the process) could open up new opportunities for rural enterprises, e.g. ceramics.

3. Strengthening of government standards and testing will be important, especially for agro-processing industries which must be able to meet food import quality standards in other countries.

While the above points are general in their application to rural development of both agriculture and agro-processing, they can be specific points of contact between the S&T project and the proposed agro-processing promotion facility. Quality and uniformity of product would be one of the "links" the facility would monitor in the agro-processing ventures it would be promoting; coordination betwee enterprises with specific technical problems and the appropriate technology source within the RTG would be encouraged by the proposed facility, and would be facilitated by the fact that USAID would have involvement in both subjects in its program.

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ANNEX 1

Urban Development in Regional Cities

I. Spatial Distribution of the Population

Thailand is divided into 72 changwats or provinces. These provinces are further subdivided into municipalities, amphoes, sanitary districts and tambons.

Approximately 80% of Thailand's population lives in rural areas. Population projections indicate that Thailand will continue to be a predominantly rural society for the foreseeable future. Of the remaining 20% who live in urban areas, the vast majority are located in Bangkok, the country's capital and primary manufacturing center.

The urban hierarchy in Thailand can be characterized as one giant metropolis and a series of relatively small towns in the same class size. The spatial distribution of the population among urban areas in Thailand is more skewed than in most other developing countries. Bangkok, a city of over 5 million people in 1983, is 33 times larger than the next largest City-Chiangmai, which has close to 150,000 residents.

Regional cities can be ranked by a combination of the size of their population and the administrative and commercial functions they perform. Regional cities with relatively large populations are generally provincial capitals as well as commercial centers. They range in size from Chiang Mai (population 149,207) to Samut Song Kram (population 32,621).

Although regional cities in Thailand do not have a sufficient confluence of activities to compete on par with Bangkok, they have been growing at a relatively rapid rate. Between 1982 and 1983 municipal population growth rates ranged from a high of 113.81% in Korat* to a low of -6.95% in Chonburi.

II. Functions of Regional Cities

A. Administrative Functions and Organization

Thailand's municipalities are responsible for urban governance outside of Bangkok. Municipal services generally provided by the regional cities include: roads, drainage, waste collection, health, markets, parks and planning. Other key services sometimes managed by municipalities - education, public safety, electricity and water - are performed by either public corporations or by regional branches of the national government. Contributing to the dependence of regional cities upon the central government is the lack of a solid local financial base to support municipally planned, managed and financed projects. Fully 37.6% of municipal revenues in 1979 were derived from central government grants. Central government control over budgetary expenditures, user fees, revenue sources, zoning and many key municipal services have constrained the development of local autunomy.

The weak managerial base of regional cities is reflected in their municipal structure. Typically, municipalities are managed by a

*Municipal boundary extended

municipal clerk and a supporting executive branch. Elected officials include a mayor and a municipal assembly. Most Municipal Assemblies have not developed an effective committee structure and therefore play only a minor role in policy making. Active mayors, such as in Phuket and Hat Yai, can exert a strong influence on the development of their cities. However, they are a rare breed.

B. Economic Functions

Because the predominant market for final demand (whether national or export in nature) is Bangkok, industries will prefer to locate near this final market or near the supply of other intermediate production inputs. Therefore, unless a region has a comparative advantage in the production of certain commodities, the pull of Bangkok will overrule any decentralization of industry. Comparative advantages in regional areas are related to resource-based industries (mining, agricultural production) and/or perishability and high transport costs. Unless one or both of these characteristics are present, it would not be economically efficient for industries to locate in rural areas, aside from small-scale enterprises serving the local market.

From an economic standpoint, Thailand's regional cities function primarily as service centers for the surrounding rural areas. Wholesale and retail trade, small and medium scale processing of agricultural products destined for export markets, local consumption of goods (noodles) or services (vehicle repairs) and financial services are the key activities occurring in regional cities.

The most recent Changwat statistics verify the strong linkage which generally exists between regional cities and the hinterlands. In a survey of five selected provinces with a relatively large regional hub, (Phitsanulok, Songkhla, Chiang Mai, Korat and Khon Kaen) 38% of the gross provincial product was generated by the agricultural sector. Trade contributed an average 19.5% to GPP followed by services, 12.1%. The manufacturing sector in regional cities is relatively weak. Nationally, the provincial manufacturing sector accounted for only 6.1% of the total Gross Domestic Product in 1980, well below the national average of 10-12%.

The manufacturing sector, although small, is growing rapidly relative to agriculture. A random sample of growth rates by sector reveals that agriculture grew 12.8% from 1979-1980 while manufacturing grew at almost double that rate, 23.8%. During the same period, trade increased by 17.8%, services by 25.6% and banking, insurance and real estate by 32.43%. Regional variations from this general growth pattern primarily occur in the mining and construction sectors.

It is evident that while the agricultural sector remains of paramount importance, the expansion of manufacturing, trade and services in regional cities is occurring at a much faster pace. A closer examination of the manufacturing base of regional cities and its relationship to rural growth is in order.

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C. Manufacturing Base of Regional Cities

As stated previously, regional cities contain two basic kinds of manufacturing industries: production of local goods and services and processing of natural resource-based products (mining, agriculture)destined for national or export markets.

Rice mills constitute the single largest number of enterprises. There are an estimated 60,000 small rice mills in rural areas. In the five changwats studied, there were an average of 906 rice mills per changwat.

Rice mills, however, do not necessarily constitute the largest employer. In Chiang Mai, 1523 persons worked in 798 rice mills while 3,020 persons worked in 32 tobacco factories. This reflects differences in the average size of firms in regional cities. Industries catering to local demand, such as rice mills, are generally small scale. Rice mills employ on average 2-3 persons; noodle factories, 7; garages 7-14; ice factories 6-9. In contrast, industries which cater to national or export markets have a larger number of employees. On average, in the Changwats studied, saw mills employ 40-70 persons, sugarmills 37; tobacco 94; gunnybag mills 1552; fiber spinning and processing 56-106; aluminum plants 28-108.

It is not possible to reach any definitive conclusions on whether in total larger scale industries employ more persons than small enterprises in the Changwats studied. Many large scale industries have only a single plant within a Changwat and did not divulge any employment information. Since these plants run the gamut from typically capital-intensive industries, such as plastics, rubber and tires; to more labor intensive enterprises, like cotton and silk spinning, it is not possible to determine the relative employment effect of a few large scale industries versus a large number of small scale enterprises. From the employment data that is available, there does not appear to be any consistent pattern. If one arbitrarily classifies small scale as under 15 employees (this captures almost all local goods and services) and large scale as more than 15 employees, Phitsanulok, Korat and Phuket have more employment from small scale enterprises, Khon Kaen and Chiang Mai the opposite.

What can be deduced from these statistics is that most Changwats with a large regional center have the following characteristics:

a) There are a large number of small scale enterprises,

b) The manufacturing base, while weak, is growing faster than agriculture,

c) The economic base of regional cities is fairly diversified. They perform an increasing amount of trade, local services and processing.

The question remains, what opportunities exist to expand employment by building upon existing local demand or natural resources?

D. Regional Demand Analysis

If one analyzes local demand for goods and services, there are two potential ways it can be expanded to generate additional employment. The first is to directly increase farm incomes. This can arise from a change in commodity pricing, increased yields, bringing additional land under cultivation, crop diversification, etc. Local demand can also increase as a result of a shift in manufacturing from one locale to another which increases employment and disposable income. In both cases, since a portion of this increase in income will generally be spent in the local economy on purchase of either production inputs-fertilizer, animal feed, credit, agricultural equipment, seeds; consumer durables; or consumer goods and services-noodles, rice, motorcycle and car repairs, employment will be indirectly expanded in the local economy.

It is unlikely that local employment in Thailand will be stimulated much as a result of an increase in production of agricultural inputs or high value consumer durables. Most of these products are manufactured in Bangkok and therefore the direct employment effect in the local economy will be small. The exception to this rule is local production of agricultural equipment. Familiarity with farmers needs, the ability to respond quickly and flexibility in production design are all characteristics which favor local manufacturing of agricultural equipment. Such enterprises were found not only in the Central Region where double cropping has increased the need for mechanization, but in all five Changwats which were randomly selected for more detailed analysis on the basis of their diverse regional locations.

While an increase in rural income is not likely to generate local manufacturing of agricultural inputs or consumer durables, an increase in income will probably generate greater demand for local purchase of consumer services and consummables. Car repairs, noodles, ice, rice, appliance repairs, concrete, brick and wood manufacturing due to either its perishability, high transport costs or local demand would be likely targets for increased employment within regional cities. Given this scenario, in what industries could we expect local employment to increase as a result of growth in rural incomes?

A separate study of five Changwats confirmed that most of the above-stated industries have high growth rates. Local manufacturing enterprises with high growth rates and the largest increase in employment from 1977 to 1980 in Ubon, Udorn, Chonburi, Korat and Phuket were: vehicle repairs, concrete, agricultural equipment, noodles, bakery goods and ice.

One, albeit, crude method of predicting areas of potential, but not yet realized, local employment growth is to draw comparisons among Changwats to determine what might be minimum service areas for particular

industries. For example, one could compare the number of registered vehicles (cars, motorcycles, etc.) with the number of available repair shops. There is considerable variation among Changwats. In 1980, Chiangmai had one repair shop for every 2,352 vehicles. In contrast, Bangkok had one for every 568 vehicles, Korat one for every 147. Taken at face value, there appears to be sufficient local demand to support expansion of these enterprises. Given the disparity in these ratios, a question is why there are not already more vehicle repair shops in Chiang Mai.

Similar comparisons can be drawn between any number of industries in Changwats. However, there are significant differences among the regions and cities of Thailand which dictate that no general policy or program will be suitable to the economic conditions prevailing in every Changwat.

Regional Development Strategy of the Thai Government

The urban and regional strategy that the Thai Government adopted in their Fifth Economic Development Plan emphasizes encouraging industrial growth outside of Bangkok.

Their regional stratification adopts, if you will, urban development spheres of influence. Understandably, Bangkok is in a classification by itself. The Eastern Seaboard, located southeast of Bangkok constitutes another distinct development area. Regional cities are classified as first and lower order cities, depending upon their growth potential and consequently, the level of activities planned by the Central Government.

First order cities include Korat, Chonburi, Songkhla-Hat Yai, Chiang Mai and Khon Kaen. There are ten regional cities in the lower order category.

Specific industries are targetted for development in first order regional cities: tourism, export-oriented industries and textiles in Chiang Mai; education and trade in Khon Kaen; transportation and agro-industries linked to the Eastern Seaboard in Korat; tourism, transportation, trade and export industries in Chonburi; and fishing and drilling in Songkhla-Hat Yai.

Interventions planned for first order regional cities include: expansion of the tax base and municipal boundaries, provision of social services, housing and infrastructure; establishment of regional training and medical centers, creation of industrial estates in Songkhla-Hat Yai, Chonburi and Chiang Mai; management services for small and medium scale industries and provision of long-term credit for resource based industries.

Assessment of Progress

In 1984, what services were actually provided? By 1984, the municipal boundaries in Chiang Mai, Khon Kaen and Korat had been extended.

Universities were established in Chiang Mai, Khon Kaen and Songkhla. IFCT regional offices were set up in Khon Kaen, Lampang and Hat Yai. The National Institute for Development of Skilled Labor was founded in Khon Kaen and the Management Development and Production Center was located in Chiang Mai.

Industrial decentralization, however, has not proceeded on any major scale in Thailand. Market forces as well as countervailing public policies which favor the development of the Eastern Seaboard and Bangkok continue to inhibit industrial development in Thailand's regional cities.

Regional industrial estates, even if they were effective, have not been successfully established. In fact, the World Bank has now dropped the idea of financing industrial estates in lieu of funnelling their money through the IFCT.

However, government extension of basic services in provinicial areas has been widespread. Electrification and road transportaion have greatly improved over the past two decades. Water supply and distribution and other infrastructure improvements are likely to be upgraded in the near future.

A $40 million loan with the World Bank had been contracted to improve the water supply and distribution systems in provincial areas. However, of the 125 projects planned, only two were underway at the time of this writing. In 1984, an $8 million technical assistance project for the Provincial Waterworks Authority financed by AID had also been developed, but is not yet underway. Finally, although a $100 million regional cities project was developed by the World Bank, because of the lack of commitment from local governments to repay the loan, it had yet to be signed. (A key element of this project was the establishment of a consolidated and updated local property tax system.)

Consequently, the World Bank has adopted a wait and see attitude with respect to the regional cities project. The focus of the World Bank has now shifted away from development of regional cities and back to Bangkok. In conjunction with the Thai Government, they have developed terms of reference for a six pronged assessment of the Bangkok Metropolitan Area. These studies will take at least a year to complete, in time for the development of the Sixth Development Plan.

In conclusion, the emphasis upon the development of the Eastern Seaboard as an alternative industrial site to Bangkok and the focus of the government (and IBRD lending in the medium term) on alleviating the growing diseconomies associated with industrial development in Bangkok will most likely foreclose any major effort to promote regional urban development in the next plan.

In short, it appears that despite considerable study, by whatever name it is called, regional development, rural industrialization or industrial decentralization, the strategy for development of Thailand's regional cities remains as nebulous today as it has in the past.

Although the World Bank does not intend to completely abandon its efforts to promote regional development in Thailand, the growing environmental problems of Bangkok are now commanding the attention of both the Thai government and the World Bank. In conjunction with the Thai Government, the World Bank has developed terms of reference for a six pronged assessment of the Bangkok Metropolitan Area. These studies will take at least a year to complete, in time for the development of the Sixth Development Plan.

In summary, despite previous efforts, provincial urban development has not proceeded on any major scale in Thailand in the past and it is unlikely that any major effort is conceivable in the future. The decision to develop the Eastern Seaboard as an alternative industrial site, and the need to prevent further deterioration of Bangkok's infrastructure will continue to limit the amount of public resources which can be devoted to urban development in Thailand's regional cities.