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LOCAL INDUSTRIES:  
NON-AGRICULTURAL PRODUCTION AND EMPLOYMENT  
IN AGRICULTURAL REGIONS

by  
Arthur Gibb, Jr.

A Paper Presented to the Working Group on the Rural Poor  
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## LOCAL INDUSTRIES: NON-AGRICULTURAL PRODUCTION AND EMPLOYMENT IN AGRICULTURAL REGIONS

by  
Arthur Gibb, Jr.

### Introduction

This paper describes the nature of non-agricultural activity in a "typical" Agricultural Region in a developing nation and analyzes the role that such activity plays in the process of rural development. At the end it is argued that "Local Industries" constitute a strategic variable in the formulation of rural development policy, an understanding of them clarifying a number of confused issues and pointing toward politically-feasible policy avenues.

Although the Agricultural Region provides the frame of reference for the analysis, the focus is primarily on the Agricultural Sub-Region. The Sub-Region is treated as the basic unit of the agrarian economy. Its characteristic non-agricultural activities are designated Local Industries and the Sub-Region economy is treated as the "local economy." Spatially, the Sub-Region is composed of its constituent agricultural villages plus perhaps 5-8 Locality Towns and a District Town, the latter being the sub-region center.<sup>1</sup>

The discussion is organized in six sections. In the first the general characteristics of Local Industries are described, emphasizing that their growth is dependent upon growth in the agriculture sector. In Section 2 Local Industries are classified by function—as between consumer, public service, or agriculturally-related industries—and the relative weights and growth rates of each are indicated. In the third section labor and capital use in the principal Local Industries is described and analyzed. These three sections provide the basis for the

discussion in the fifth and sixth sections of the policy implications of the nature of Local Industries. It is necessary, however, to interject a discussion—in the fourth section—dealing essentially with what Local Industries are not. Whereas Local Industries are of central importance to the process of rural development, there are a variety of more familiar activities which are of only peripheral importance but constitute a major source of misunderstanding about non-agricultural activity in rural development. They include Puerto Rico-style "light industry", "modern small-scale industry", cottage industry, and the concept of "regional balance" in industrialization.

The importance of Local Industries lies in the fact they are both an integral part of the rural economy and a crucially important source of non-agricultural employment nationally. Measured in terms of employment, non-agricultural activity will account for from 20 to 40 percent of a Region's economic activity—depending upon the level of development—95 percent of this being in Local Industries. (The remaining 5 percent is accounted for by those activities in the Regional Center which are serving the Region as a whole.) Nationally, Local Industry employment accounts for on the order of two-thirds of total non-agricultural employment. Thus, Local Industries command policy attention because they not only are integral to the rural economy but also have the potential to greatly ease the pressure of migration on major urban areas.

Local Industries come into being largely in response to the needs of farm households. Because at low income levels human needs and production technologies are relatively similar in Agricultural Regions around the world, it is possible to discuss Local Industries in terms of a general model, drawing data from a variety of sources. In the discussion that follows when approximate proportions and growth rates of Local Industry employment are suggested, obvious qualifications will be omitted. The approximations are made from data drawn from studies in the Philippines, Nigeria, Columbia, China, Israel, and India and are consistent with the findings of a variety of other sources. The principal assumptions of the discussion are that farm household incomes rise with agricultural productivity and that there are no ethnic barriers to new entrepreneurs entering non-agricultural activities.<sup>2</sup>

Employment is used as a measure of the level of economic activity in Local Industries. The number of persons engaged is regular, full-time workers is the most reliable measure available of value-added in production. Including only the "regular worker" effectively excludes those who are hangers-on or only sporadically employed. Thus the bulk of the underemployment for which rural industries are reputed has been excluded from the employment estimates used here. Regular seasonal employment is included in the estimates in terms of full-time equivalent units.<sup>3</sup>

### Section 1: The Nature and Geographic Distribution of Local Industries

#### Structural Transformation in the Sub-Region

Non-agricultural activities in an "Agricultural Region" do not exist independently of the agriculture sector. In the parlance of regional economics, the former are "dependent industries" while the latter constitutes the "base industry." Were agricultural activity to cease to exist, non-agricultural activities would as well.

The functional relationship between the base and dependent industries is largely determined by the level of income in agricultural households. One of the few relationships in economics so well demonstrated as to warrant being designated a law is the propensity of households to shift their expenditures increasingly to non-food items as income rises above the subsistence level. With successive income increases, expenditures on food rise but not so fast in percentage terms as do expenditures on non-food items. As production responds to this change in the composition of household demands, resources come to be increasingly concentrated in non-agricultural activities, thus bringing about what is termed the "structural transformation" of the economy in question—the transformation of the structure of production from one which is predominantly agricultural to one which is increasingly non-agricultural.

In an Agricultural Sub-Region the process of structural transformation can be observed and analyzed with relative clarity, given that

the distinction between the base (agricultural) and dependent (non-agricultural) industries is so sharp. Only two general qualifications are necessary. First, strictly speaking growth in those Local Industries directly related to agricultural production derives from growth in agricultural output rather than income. However, since the growth of output and income in the agriculture sector are two sides of the same coin, all dependent industry growth will be treated as occurring within the structural transformation process.<sup>4</sup> Second, at first look there would appear to be no direct connection between the growth of agricultural incomes and the availability of public services. Closer inspection usually reveals that the proportion of the labor force engaged in administrative services, education, health, and public utilities is highly correlated with the level of agricultural income. Although it may not always be accurate to describe the availability of such services as reflecting a response to household demands for them, in general ascribing such causation is a useful first approximation.

With the modernization of agriculture, structural transformation within a Sub-Region is reflected in expansion of Local Industries and the emergence of the towns serving the agricultural communities. Although displacement of labor from traditional non-agricultural activities in the villages occurs as factory-produced substitutes are adopted (e.g., cloth, roofing materials), these losses are more than off-set by the expansion of other types of non-agricultural production, primarily in and around the Locality Towns and District Town. Local Industries span the full range of activities characteristic of a national economy, the eight major industry groups being the familiar: commerce, transportation, manufacturing, public services, personal services, construction, utilities, and business and financial services.

Measuring economic activity in terms of employment, the composition of non-agricultural activity within the Sub-Region is significantly different from the impression often held of the nature of "rural industries". Generalizing in very approximate terms, at an intermediate level of development with 30 percent of the Sub-Region labor force primarily engaged in non-agricultural production, agro-industries (mainly the

handling, processing and transporting of agricultural products) engage less than one-fifth of the regular non-agricultural workforce, public services engage up to one-fifth, and production for household consumption engages the remaining three-fifths or more. As the household consumption industries are predominantly service, trade, and craft industries, they are not highly susceptible to substitution by the products of the urban and industrial enclaves. The tendency in development literature to equate rural industries with manufacturing and agro-industry is largely responsible for such industries having been overlooked. They are in fact of preponderant importance, offer productive and viable employment, and are highly responsive to growth in the incomes of agricultural households.

#### Geographic Distribution of Local Industries

The location of production of Local Industries—whether in the village, the Locality Town, or the District Town—is a function of market reach and its corollary, minimum market size. Using again the simplifying assumption of a level of development such that 30 percent of the Sub-Region labor force is engaged in non-agricultural activity, such activity might be distributed as follows. In the District Town would be found distinctively: the larger scale agro-industries handling the product being exported from the Sub-Region; public services including the local administration, a high school, and professional health services; specialized retail trade outlets; franchised agricultural supplies dealers; restaurants; a movie house; transport repair facilities; establishments manufacturing clothing, leather goods, furnishings, and housing components and materials (millwork, cement products); and small construction contractors. At an earlier, lower level of economic development these services would only have been available at the Regional Center, serving a region-wide market. At a later, higher level of development, many of them will be found emerging as industries of the Locality Towns resulting from the locality market having become large enough to support them.

The comparable set of industries that would be found in the Locality Town at the 30 percent level of structural transformation might include: agro-industries serving the locality market (storing and process-

ing the product to be consumed there), general retail trade outlets, "eateries" as opposed to restaurants, gambling services, possibly tailor and bakery shops, a variety of individual craftsmen, mechanics, or artisans working more or less full time at their trades, and public services such as elementary schools, midwives and dealers in medical preparations.

At the village level would likely be found a number of part-time barbers, craftsmen, traders, home-manufactured producers, and cart or carriage operators. As the locality market for more and better quality goods and services grows, some of these village producers gravitate to the Locality Town in a process of "feminization" and become full-time enterprises.

### General Characteristics of Local Industries

Local Industries are distinctively composed of family firms that tend to encounter diseconomies of scale when they expand to the point where non-family labor must be used. There are exceptions where the handling of bulk commodities is the principal operation. In general, however, industry expansion occurs through the proliferation of small family firms, typically as a result of experienced employees branching off to start their own firms as the local market expands. Consumer industries typically engage only 2-5 people regularly. Bulk commodity handling industries are the only ones that engage over 10 persons and it is a notably large one that engages 15.

There are relatively few backward and forward linkages among Local Industries. They typically produce for final demands, utilizing raw materials and inputs of non-local origin. Some industries primarily use inputs of industrial origin, inordinantly packaged food products, cloth, cement, metal roofing, and producer goods. Others depend upon non-local inputs of agricultural origin, especially forest products and other traditional materials. Producer goods production is not typically found among Local Industries, a larger-than-local market being required to support such production.

In characterizing and analyzing the economy of an Agricultural Sub-Region, it is convenient to overlook temporarily what will be referred to

in Section 4 as Local Specialty Industries, these being non-agricultural industries serving a larger-than-local market. It is not uncommon to find such industries in a Sub-Region, drawing either on a local natural resource (e.g., forest products, gravel and sand, or clays) or on the entrepreneurial talents of a group with strong marketing connections for locally-produced handicrafts. To admit them into the discussion, however, draws attention away from the essential nature of non-agricultural activity in a Sub-Region, that is, that it is dependent upon the level of agriculture income in the Sub-Region, not on demands from non-local markets. Local Specialty Industries can add significantly to the economic base of an area, but many Sub-Regions grow and develop without them. Even when they are present, their growth is of peripheral importance by comparison with changes in the agricultural base.

It is useful to distinguish "formal sector" and "informal sector" activity among Local Industries. The former refers either to activity occurring in fixed, permanent establishments or to vehicle operations. Informal activity encompasses activities that are less readily identified as a result of not occurring in a clearly-defined place of business. Though the lower-productivity Local Industries are found in the informal sector, informal sector industries are not in general of lesser productivity than those in the formal sector.

### Section 2: Composition of Local Industries

Table 1 lists the principal Local Industries of an Agricultural Sub-Region. (Informal sector industries are indicated by an asterik.) They are organized into industry groups and then into the three functional classes, Agro-industries, Public Service Industries, and Consumer Industries. An illustrative distribution of regular employment in these industries is provided, based on data available on Sub-Regions at an intermediate level of development. The value of presenting such a model distribution lies in indicating the diversity of Local Industry activity and the approximate relative proportions within it, not in suggesting rigid proportions. On the other hand, it is worth noting there is evidence to suggest the indicated distribution of employment as between

industry groups may in fact prevail over a fairly wide range of development levels.<sup>5</sup>

The manner in which several local industries are classified warrants preliminary comment. First, it is convenient to include wholesale activity among Agro-industries. The principal industry involved is Construction Materials Supply (CMS), which, like lumber yards, is a bulk commodity handling industry, it shares many of the characteristics of agricultural Inputs Supply and Milling/Marketing enterprises. Second, transport of divided, heavy vehicles (trucking) being associated with Agro-industries while light vehicles are associated with personal transportation and hence with Consumer Industries. Third, the considerable amount of private sector education and health services are usually included in Public Services. Fourth, it is convenient to attribute construction activity to residential construction, and hence to Consumer Industries, rather than attempt to apportion it among the three functional classes.

A negative definition is perhaps useful at this point. Agro-industries should not be confused with agri-business, which may be defined referring to large modern suppliers to the agriculture sector or processors and marketers of agricultural products. Agro-industries are relatively small firms serving a local market and having little if any capacity to graduate into the ranks of agri-business.

#### Agro-industries (including Construction Materials Supply)

Agro-industries will typically account for on the order of one-fifth of total Local Industry employment. Milling/Marketing, Agricultural Inputs Supply, and Construction Materials Supply are the three primary industries. Because the bulk commodity handling industries own the heavy trucks of the Sub-Region, heavy transport does not occur as a distinct industry. The secondary Agro-industries are Heavy Transport Equipment, Vehicle Body Builders, and Service Stations.

Milling/Marketing covers the warehousing, processing, and marketing of agricultural products. It accounts for two-thirds or more of Agro-industry employment. In contrast, Agricultural Inputs Supply is not an important source of employment in the local economy, accounting for less than one percent of total non-agricultural employment. Distribution of

Employment in Local Industries  
of An Agricultural Sub-Region:  
Illustrative Distribution

FUNCTIONAL CLASS Industry Group <u>Local Industry</u>	<u>Distribution of Regular Employment</u>	
AGRO-INDUSTRIES		17%
<u>Agro-Industries</u>		<u>15</u>
Primary	13	
Secondary	2	
<u>Construction Materials Supply</u>		<u>2</u>
PUBLIC SERVICE INDUSTRIES		15
Government Services		4
Education		9
Health Services		1
Utilities		1
CONSUMER INDUSTRIES		68
<u>Retail Trade</u>		<u>20</u>
Wage good stores	7	
Hardgoods stores	1	
Specialty Traders	3	
*Mini-Outlets	6	
*Peddling	3	
<u>Personal and Recreational Services</u>		<u>15</u>
Restaurants, Barber Shops, etc.	4	
Amenity Services, etc.	3	
*Domestic Service	8	
<u>Trades and Crafts Industries</u>		<u>15</u>
Baking	2	
Tailoring/Dressmaking	6	
Footwear Mfr.	2	
Furnishings Mfr.	3	
Millwork Mfr.	2	
<u>Construction Contractors</u>		<u>5</u>
<u>Light Transport Services</u>		<u>13</u>
Drivers	12	
Light Transport Workshops	1	
 Total		 <hr/> 100%

\* Indicates informal sector industry.

agricultural chemicals (fertilizers, insecticides, pesticides), feeds, and veterinary supplies simply does not require a great many people, though it does require both capital and technical knowledge. Construction Materials Supply involves distribution, trucking, and some manufacture. Product lines mainly involve lumber and metal roofing initially, expanding to include supply of cement, reinforcing steel, and plumbing and electrical products as local development proceeds. Manufacturing operations may expand from saw milling to cement block and pipe production. (Manufacture of millwork is typically undertaken by small craft workshops, classified among Consumer Industries.)

The secondary Agro-industries are characteristically transport-related, skilled occupations. The Heavy Transport Workshops—2-4 man shops that repair trucks and heavy farm equipment—have a substantial competence in motor repair by comparison with the Light Transport Workshops which are classified among Consumer Industries. Vehicle Body Builders are well-established wood and metal-working firms which similarly are not to be confused with the one-man vulcanizing or welding shops which are classified under Light Transport Services. Service Stations become a significant source of employment as agricultural production rises and Light Transport begins to be mechanized.

#### Public Services Industries

Public Services industries can loom quite large among Local Industries even where the level of central government funding is relatively low. Both education and health activity tend to expand as agricultural incomes rise. The private sector has a significant capacity to take up the slack when public funding fails to keep up with the demand for these services. Also, public sector employment is often larger than initially appears to an outsider, since a variety of local and regional activities may be found in addition to those of the central government.

In terms of employment, primary education (teachers) tends to be the largest industry, often accounting for one-half or more of Public Service employment. Government administrative services are the next most important and health services the least important. Despite the extensive

discussion in development economics of public works activity as a potential major source of employment in rural areas, it is highly doubtful that this is the case at present in many developing nations. Such employment is often not even of great importance within the budget for local government services.

In many Sub-Regions in the 1970s education encompasses activity at the primary, secondary and even technical levels. Government administrative functions in each town typically include the local executive, a treasurer's office, police services, operation of the public market, and a small crew to maintain streets, roads and bridges. In addition, central government post and tax offices may be located in the District Town along with development activities such as agricultural extension services. Health services in the Sub-Region will include private practices (including midwives, both traditional and modern), clinics, and hospitals (often with less than 10 beds).

#### Consumer Industries

In an Agricultural Sub-Region industries other than those discussed above are assumed to be serving household consumption and investment demands. Their existence and growth is, directly or indirectly, a function of the level of agricultural incomes in the Sub-Region. In the illustrative distribution they account for two-thirds of Local Industry employment.

Consumer Industries employment reflects the pattern of household expenditures and can usefully be thought of in terms of an approximate ranking in order of the importance of the products of each in the household's cash budget: the retailing of foods and packaged goods, personal services, clothing, furnishings, housing, and personal transportation. These expenditures areas translate into the following industry groups: Retail Trade, Personal Services, Trades, Crafts, Construction, and Light Transport Services.

Total employment in Consumer Industries can be thought of as being divided into three parts. Retail Trade and Personal Services account for one-half; the clothing and housing-related industries (Trades, Crafts, and Construction) for more than one-quarter; and Light Transport Services for something less than one-quarter. The first group encompasses activities

attributable to family maintenance; the second to those related to the acquisition of assets; the third to employment related to personal mobility. The latter is of particular interest, both because it is a notably large component of Local Industry employment and because it underscores a point which is often overlooked, that is, that a growth pattern built upon specialization and exchange necessarily implies increased personal mobility.<sup>6</sup>

Employment in Retail Trade is attributable approximately two-thirds to the distribution of factory-produced wage goods and one-third to distribution of wage goods of local origin, such as staple foods, fuel, and baked goods. In addition, there is a small amount of employment related to the retailing of hard goods such as sewing machines, stoves, radios, and vehicle parts. Personal Services in town shops provide food service ("eateries" and restaurants), barber and beauty shops, and a variety of amenity and recreational services (movies, billiards, goldsmiths, photographers, pawn brokers). At least as important are informal sector personal services, including laundering, domestic service, and a variety of sometimes-illegal activities, especially lotteries and other forms of gambling.

The second group of Consumer Industries encompasses most of the manufacturing and construction activity of the Sub-Region, milling activity excepted. Baking, tailoring, and footwear manufacture compose Trades activity. Crafts are prominently housing-related, encompassing the manufacture of furnishings and construction components, mainly doors, windows, window grills, fences, and gates. Trades can be expected to be at least twice as important as Crafts as a source of employment at most income levels. Construction Contractors employment, though difficult to measure, may be on the order of importance of Crafts. It tends to be composed of loosely-organized teams of carpenters and masons plus individual plumbers, electricians, and painters.

Light Transport Services tend to involve different types of vehicles for inter-town, intra-town, and farm-to-town routes and are increasingly being mechanized. A typical combination would be for bus-type vehicles to operate the inter-town routes, pedicabs (and portering) to be used within town, and animal-drawn vehicles to serve the farm-to-town routes.

The vehicles are characteristically owner-operated, often by members of farm families. Associated industries include feed-gathering, carriage repair, vulcanizing stations, bike and motor repair, and welding shops—all low-skill, one-man operations. The latter industries do not typically account for more than 10 percent of total employment in Light Transport Services, vehicle driving being the principal occupation.

### Section 3: Labor and Capital Use in Local Industries

In this section the organization, capital requirements, and skill levels of the more important Local Industries are described. The picture that emerges is one of industries which are distinctively dependent for their growth upon local resources but for whom capital is typically the only constraining resource. The local supply of entrepreneurship, managerial ability, technical knowledge, and skills is sufficient to enable the industries to respond promptly to increases in local demands. Even capital is not an absolutely binding constraint so much as one which retards the rate of growth. Increases in employment in Local Industries are obtained primarily by mobilizing relatively non-scarce resources, both human and financial.

#### Agro-Industries

The most important of the Agro-industries (including Construction Materials Supply) are the bulk commodity handling operations. They are distinctively capital intensive and users of low-skill labor. Employment in them tends to grow at approximately the same rate as does agricultural output since production in them is characterized by fixed factor proportions over the short and medium term.<sup>7</sup>

The Milling/Marketing, Agricultural Input Supply, and Construction Materials Supply firms are the largest employers among Local Industries and tend to be owned by members of wealthy families, since only they can command the necessary capital. The owners tend to be relatively well educated and to have extensive contacts with the Regional and national economy.

Commodity handling operations typically require warehouses, vehicles, and substantial peak inventories. The number of people engaged in them regularly range from 5 to 15. Fixed assets are financed through internally-generated funds, but working capital to finance inventories involves the owners in the nation's formal capital markets. Agricultural chemicals manufacturers and construction materials producers often provide trade credit on standard terms to these local firms. Commercial banks and informal lenders are other sources of seasonal credit. In the marketing of grain the credit flow often works in the opposite direction, urban wholesalers providing the necessary working capital to the local miller/marketer. Thus, in all cases the bulk commodity handling operations rely on flows of credit from urban centers to rural areas.

The crucial skill utilized in bulk handling operations is in the financial and trading operations, a skill provided by the owner and not delegatable. By comparison, the warehousing, processing, manufacturing and trucking operations in these industries are of secondary importance. Half or more of the payroll are the unskilled laborers who handle the commodities. This is almost the only wholly unskilled work found among the Local industries, with the exception of domestic service.

Planners have sometimes been puzzled by a reluctance of firms in these industries to invest in labor-saving equipment offered on concessionary terms. This has especially been the case in programs to modernize grain handling, storage, and processing equipment. A part of the explanation lies in the fact the millers estimate that trading opportunities are more profitable than investments made in labor-saving equipment and that, to the extent funds are fungible, it pays to minimize the capital invested in fixed assets in order to maximize the available working capital.

The secondary Agro-industries, being skill-based operations, are discussed below with the Trades and Crafts industries.

### Public Service Industries

Public service industries in an Agricultural Sub-Region can be characterized as corresponding to the professions, implying a high level

of formal training and little use of capital. Teachers, doctors, nurses/ midwives, and civil servants account for the overwhelming majority of the employment. The elasticity of employment in Public Services with respect to increases in agricultural income is believed to be less than unity.

The relative lack of unskilled and semi-skilled jobs among Public Services industries has several causes. Maintenance budgets for schools and other government buildings are minimal or non-existent. There is similarly no funded logistics or supply function. Domestic servants provide the only assistance in medical practices, which typically are operated from the home. Public works employment at the local level engages only a handful of market, street and canal maintenance personnel. Public works construction can engage significant numbers but this activity is typically funded at a higher level than the sub-region and is not a continuing source of employment locally.

Another characteristic of Public Services employment is that, as with the primary Agro-industries, those engaged tend to have close ties to the local economic elites. Given the expense of professional education, most of the professionals are members of wealthy local families. The connection so far as civil servants are concerned is that they are more often than not beholden to the local elites for their appointments.

#### Consumer Industries

In contrast with the bulk commodity handling and Public Services industries, the Consumer Industries are the province of the little man. Stores, shops, workshops and light transport are characteristically family industries in the sense of not engaging many non-family members. Most engage only one to three people regularly, the tendency being for entry by new firms to be so vigorous as to make expansion of the individual firm difficult. Six to eight is the maximum employment typically found in firms in these industries, mainly in Trades and Crafts. The elasticity of employment in Consumer Industries with respect to increases in agricultural incomes tends to be relatively high, ranging from 1.0 to 2.0.

The education level of the owners is similar to that of the farm community whence most of them came, although a somewhat higher level may be found in Retail Trade. When examined closely, most regular, full-time employment will be found to be skilled or semi-skilled in nature and at the least is not to be compared with unskilled agricultural labor.<sup>8</sup>

Capital requirements, though significant, are modest by comparison with those of the bulk commodity handling industries. Physical premises tend to be unimposing but are deceptive, providing little guide to the volume of activity occurring within. Capital is the scarce resource for those in the Consumer Industries and its use in production is minimized in a number of ingenious ways, as will be noted below.

Retail Trade. There are four components to Retail Trade. The two formal elements are the permanent stores in town and the periodic traders who deal in more specialized goods (e.g., cloth), following a circuit of market days around the towns of the Sub-Region. These merchants are by definition relatively skilled and able to successfully manage the significant amount of capital represented by their inventories.

The two informal elements complement the town stores more than they compete with them. The first are the mini-outlets (stalls) in the villages where villagers can buy a cigarette, a soft drink, or supplement basic provisions. They also serve as social gathering places. These are the training grounds for the town storekeepers, for it is here that one learns whether one is capable of denying a friend, neighbor, or relative a credit sale. Not infrequently one cannot and soon sees one's capital bled away. The mini-outlets are nevertheless a dynamic industry which grows with agricultural income growth and provides a significant amount of regular employment. The second informal element is petty traders in town. Among their functions is the hawking door-to-door of perishable goods unsold by noon on market days. They often also function as bet-collectors for the local lotteries.

The evidence is that, with the possible exception of petty traders, none of these elements of Retail Trade in the Sub-Region atrophy with economic growth. On the contrary, the mini-outlets proliferate (some

becoming village stores), town storekeepers take over the specialty lines handled by the periodic traders, and the latter up-grade their product lines to handle even more specialized items.

Personal Services. Personal services divide into recreational services and personal services proper. Like Retail Trade, recreational services occur in all gradations and require a significant amount of capital and the ability to manage it. "Eateries" can either consume one's capital or carry one from operation of a village or town snack stand through "refreshment parlours" up to ownership of a restaurant. Gambling parlours, billiards halls, bowling alleys, and movie houses are other possibilities. Personal services proper are of disparate nature but, except for domestic service, are mostly based on skills, for example, barbers, goldsmiths, photographers, and watch repair/jewelers.

Trades, Crafts, and Construction. Trades, Crafts, and Construction all involve entirely skilled or semi-skilled workers and operate on a notable minimum of capital. These are the industries that produce assets for the household—clothing, furnishings, and housing components or additions. (Secondary Agro-industries can also be included here).

Fixed capital is often limited to hand tools (including treadle sewing machines), though powered saws and planers and electric welders appear at surprisingly low-levels of development. A shed, or even a shelter against a wall, is often sufficient for the workshop. (Bakeries, classified as a Trades industry, constitute an exception to some of these generalizations since they require more physical plant and inventories than the other industries).

Working capital needs are largely eliminated in these industries by covering the materials costs of an order with a downpayment and by deferring payment of wages until the order is picked up and paid for. The downpayment tends to assure that the item will be paid for promptly. The workers are normally engaged on a piece work basis so these practices are seen as constituting a logical arrangement.

The Trades, Crafts and Construction firms have only the local informal capital market to draw on for financing needs. The moneylenders service those who lack relatives or friends from whom they can borrow.

The need for the equivalent of "seasonal commercial credit" arises when short-term credit is required to finance the materials needed to complete an order in a case where the downpayment is not sufficient. A typical structure of interest rates-per month-would be 10 percent to a moneylender, 5 percent to a neighbor or relative, and none to a family member.

In approximate order of importance, the principal purposes for which finance will be needed are (i) working capital for inventories, (ii) credit for less than one-year for the purchase of power tools, and (iii) permanent capital to expand or "fix up" the premises or even purchase a vehicle. At annual interest rates of 120 percent, the local credit market cannot be routinely used to finance such requirements.

As the level of development of the local economy rises, financial needs become more insistent. Working capital is useful not only to allow materials to be bought in bulk but also to improve product quality. For example, millwork and furnishings firms complain that without being able to inventory materials they are forced to work with unseasoned wood. Product quality is similarly involved in powered equipment purchases since they frequently not only save labor but also make it possible to produce both better work and improved designs.

As the level of development rises in an Agricultural Sub-Region, a point is reached at which financial services warrant being formalized in the sense that a firm's volume of work will become steady enough to justify a seasonal line of credit for inventories and occasional extension of credit for permanent capital purposes. When this point is reached, public policies to encourage the transformation of the informal lenders into an organized local banking system would seem to be desirable.

Light Transport Services. The distinctive characteristics of Light Transport Services are (i) they are historically village-based services and continue to be so as incomes rise, (ii) they require capital investment, and (iii) motorization of them is facilitated if installment finance can be made available by the "motorcycle" dealers in the Regional Center.

There is evidence that the labor displacement effects of motorization on those operating traditional conveyances can be more than off-set by

the effect of greatly increased demand on employment in transport services once a Sub-Region reaches that level of prosperity. On the other hand, village welfare can be adversely affected if the change takes the form of a shift from village-owned traditional vehicles to mini-buses owned by townspeople.

#### Section 4: Regional Industries and Linkages

In this section we elevate the perspective of the discussion to the level of the Agricultural Region in order to draw in the set activities which it was convenient to set aside while establishing the character of Local Industries, namely, industries serving the regional market. While these tend to be concentrated in the Regional Center, some are located in Sub-Regions. Once such activities have been identified, the discussion will consider their relationships to the concepts of "regional balance" and of cottage, small-scale, and light industry. In a final section metal-working and producer-goods production in an Agricultural Region are considered, these being areas which have received particular attention in recent years.

#### Industries Serving the Regional Market

On the order of 5-10 percent of the regular employment in non-agricultural activity in an Agricultural Region will occur in industries serving the regional market. Like Local Industries, they are dependent industries of the Region's agricultural base, their growth being a function of the level of agricultural output and income in the Region. A primary reason for deferring discussion of them until the latter part of this paper is to avoid the tendency to perceive such activity as a "leading sector" of the Region's economy. Like all other non-agricultural activity in an Agricultural Region, these regional activities constitute service industries rather than leading industries. They would cease to exist were the agriculture sector to cease to exist. Analogously, it can be said that the towns of an Agricultural Region are service centers rather than growth poles and would themselves decline were agriculture to decline. Three types of regional activities can be distinguished.

Regional Industries Per Se. Analogous to Local Industries, these are the "characteristic" industries of the Regional Center, being those that are located only there and that reflect the functional specialization inherent in the three-tier hierarchy of trade centers of the Agricultural Region. They are mainly of three types: distribution industries, public services, and financial services. The first include wholesalers of bulk commodities and consumer goods and franchised distributors of producer goods, including vehicle and machinery dealers. Public Services prominently include government administrative services, higher education, and health facilities such as regional hospitals with specialist services. Financial services include commercial and development banks, insurance company agencies, and a variety of related business services.

Specialty Industries. The two other types of regional activities we identify are Regional Specialty Industries and Local Specialty Industries, they being located respectively at the Regional Center or in the Sub-Regions. A distinguishing characteristic of Specialty Industries is that they produce for inventory as well as against firm orders. This implies a working capital requirement which Local Industries do not have.

Specialty Industries are characteristically either resource-specific or entrepreneur-specific. Obvious examples of the former would be ones based on forest products (e.g., saw milling, basket making) or on clay or gravel deposits (e.g., ceramics, cement products). Entrepreneur-specific Specialty Industries tend to be "footloose" in their production requirements and usually arise as a result of an individual or group of producers either being particularly skillful or having good market contacts for a standard product.

Entrepreneur-specific Specialty Industries tend to be involved in consumer goods production, although some producer-goods production falls in this category. They characteristically produce standard wage goods using the same scale of operations and technology as is used when these goods are produced by local trades and crafts industries. The competitive advantage of such Specialty Industries typically rests upon the marketing skills of the individuals involved. The emergence of the industry tends to occur when the Regional market increases suddenly, the sharply increased demand

leaving an opportunity for a particularly innovative local producer to begin marketing outside the Sub-Region before Local Industries in other Sub-Regions themselves respond. With success new firms enter the industry as employees break away to start their own firms. Such industry expansion based upon regional demands transforms a local trade or craft industry into a Local Specialty Industry of many small family firms. Examples of products that may be produced by such Specialty Industries include footwear, simple woven furniture items, and standardized garments such as ladies' underwear. Other growth patterns can take the form of a single firm which begins to serve a small but regional market for a relatively specialized product (e.g., candied snack foods, children's toys, coffins) or firms which emerge on the strength of an individual's technical knowledge.

By their nature Local Specialty Industries that are resource-specific may be located anywhere in a Sub-Region. Those that are entrepreneur-specific will more often than not be found in the District Town due to the marketing advantages that the more central location affords. Regional Specialty Industries by definition will tend to be entrepreneur-specific, their location in the Regional Center being determined largely by locational advantage and by its corollary, the need for a market as large as the Region to support the degree of specialization involved.

#### Industries Not Central to Rural Development

A primary source of confusion about the nature and role of non-agricultural activity in rural development is the common misapprehension that rural development can be powerfully promoted by policies fostering one or more of the following types of industrial activity: cottage industry, modern small-scale industry, Puerto-Rico-style light industry, or industrialization strategies designed to assure "regional balance". The record is by now clear that, except in exceptional circumstances, none of these areas of industrial activity are capable of having a major impact on the level of rural development. Efforts in these areas in practice typically do not affect many people directly and, more important, do not contribute significantly to raising productivity in agriculture, which is the central task of rural development. So far as Agricultural

Regions are concerned the industries created do not have the potential to absorb a significant amount of labor and do not constitute growth poles. The four types of industrial activity involved are discussed here in two groups.

"Regional Balance" and Light Factory Industry. Efforts to promote regional balance and to foster Puerto Rico-style light factory industry are essentially programs of industrial dispersal concerned with spreading the benefits of industrialization widely. Neither type of effort tends in practice to promote rural development since little effort is typically made to assure that the industries involved draw on the agricultural resources of the Agricultural Regions they are in or near. The result is to create enclaves with few linkages to the surrounding economy.

In the case of large-scale factory industries being located in secondary industrial centers, the "spread-effects" of industrialization tend to be felt only in the immediately surrounding areas. The principal impacts on adjacent Agricultural Regions tend to be the impoverishing "backwash effects" of locational concentration.

The more-dispersed "light factory industry" programs tend to be focused on drawing on the "cheap labor" supply available in Agricultural Regions. They typically make little effort to do more than set up labor-intensive handwork operations which do not involve processing locally-produced inputs. Such programs are difficult to implement. Even when successful, they more often than not only create small islands of employment that do not touch a significant proportion of the population of the Sub-Region in which they are located.

In sum, although programs for industrial dispersion could be designed to draw on the products of the agriculture sector, in practice they usually are not. While possibly justifiable as elements of an industrial development strategy, it is important to recognize that the industries created do not typically constitute "leading industries" so far as rural development is concerned.

Cottage and Modern Small-Scale Industries. Cottage and small-scale industries development programs in principle can make a useful contribution to rural development to the extent that the industries are

treated as an integral part of the rural economy. In practice these programs are not usually effective in proportion to their cost. At their most successful they do not provide more than a small part of the stimulus needed for general rural industries growth.

Cottage industries--home handicraft production for the national or export market--have become significant industries in a number of developing nations in recent decades. Their significance in the design of a rural development strategy, however, lies in the fact they are not presently of major importance in a general sense and are unlikely to become so. Most Agricultural Sub-Regions lack them rather than have them. Even where they are present the level of development of the agriculture sector is still the prime determinant of the local standard of living and level of rural industries development.

"Modern small-scale industry" is used here in a restricted sense to refer to the process of "modernizing" existing local manufacturing industries.<sup>9</sup> In government programs the term tends to refer to increasing the scale of operations to a level at which specialization is possible in production, marketing, and management functions, the goal being to reduce costs and hence raise productivity. Providing effective technical assistance to foster such modernization is difficult in itself. Beyond this there can be constraints of market size and entrepreneurship which are illuminating.

Expansion of Specialty Industries in an Agricultural Region often can proceed only after the local or regional market has expanded to a certain threshold level. Being dependent industries of the agricultural base, this means that increasing agricultural productivity is often a prerequisite to small-scale industry modernization.

The question of entrepreneurship relates to the fact that local or regional manufacturing industries are characteristically skill-based. In practice this means their owners tend to have little formal education, an important constraint on their ability to learn management skills. Among Local Industries larger scale manufacturing operations are normally found to be in the hands of people having wealth, education, and commercial experience. The reasons are interlocked. To serve a non-local

market requires producing for inventory rather than against firm orders. This requires capital. Those who enter the industry, bringing capital, in the nature of things bring education and commercial experience as well. An equally pronounced set of characteristics is associated with the expanding local craftsman-producer. Lacking capital and financial training, expansion causes him to lose control of his costs. Heavy interest payments on borrowings compound his problems with the result that he typically finds there is a ceiling on the scale of operations he can sustain profitably.

To oversimplify slightly, the situation facing a policy intended to foster the modernization of small-scale industry in Agricultural Regions could be described as follows. In some Specialty Industries, industry growth can only follow agricultural growth, not lead it. In others the necessary capital and managerial skills are already present. In still others the entrepreneurs not only lack the educational background needed to become large producers but also constitute formidable, low-cost producers against which expanded, modernized producers must compete. This simplification is not intended to suggest that small-scale industry modernization should not be pursued but rather to indicate that such efforts can hardly lead rural growth and that development programs should take into consideration the strengths as well as weaknesses of "non-modern" Specialty Industry production in Agricultural Regions.

#### Metal-Working and Producer Goods Production

Metal-working in an Agricultural Region characteristically involves the welding and working of iron and soft steel. There is significant consumer goods production but work with producer goods tends to be limited to repair activity. Producer goods production, to the extent it involves working with hardened metals and precision tools, has capital and skill requirements greater than the market of the typical Agricultural Region can support and so tends to be sited in the industrial enclaves. Assembly of producer goods is sometimes found at the Sub-Region level, this form of production representing a division of labor wherein capital-intensive production of components occurs in the enclaves while soft-metal working

activity such as chassis production is done by local craftsmen. Vehicle body building, thresher building, and water-pump assembly are examples of such assembly operations.

The full range of metal-working activity that can be performed by a craftsman using hand tools is found in an Agricultural Region. Simple cutting, bending, and welding of iron is done in Iron Works and Light Transport Workshops.<sup>10</sup> Iron Works account for the bulk of consumer goods production, mainly involving housing components such as window frames, security grills for windows, railings, fences, and gates. The growth of this industry derives importantly from the fact that security of property cannot be assured by local police agencies. Light Transport Workshops are typically one-man operations specializing in simple welding repairs in addition to performing low-level maintenance work. Other iron consumer products that may be produced locally include kerosene stoves, water tanks, and simple containers manufactured by welding or hand-bending.

Heavy Transport Workshops specialize in mechanical and electrical repair of producer goods. They are capable of hand-grinding precision parts and welding hardened steel such as is found in truck engines and chassis.

Molding, grinding, and painting of body metal tends to be a distinct occupation within Vehicle Body Builders. The rebuilding of utility vehicle cabs and bodies is commonly done at the level of the District Town using only hand tools. A second distinct activity is building bodies for cargo trucks, production involving both wood and iron working.

The metal-working industries discussed so far are characteristic industries of the Agricultural Sub-Region and hence are Local Industries. Specialty metal-working industries producing producer goods also occur within Agricultural Regions. They correspond more closely than the Local Industries to what development specialists have in mind when they speak of fostering "modern" metal-working industries in rural areas.<sup>11</sup> They can involve welding and body work, casting, or machining operations. Three particular obstacles to fostering such producer goods production are noteworthy, namely, product quality, capital, and managerial requirements.

the product quality obstacle gives industrial enclaves a strong advantage over rural areas in producer goods production. The fact of their being investment goods has two implications. First, the transportation cost of having to travel to an enclave to make such a purchase is not particularly significant in relative terms and the locational advantage of regional production is correspondingly diminished. More important, one is reluctant to invest in a producer good of uncertain quality. An enclave producer with an established reputation as regards quality has a clear advantage over a low-cost regional producer about whose product quality there is any uncertainty.

A craftsman-entrepreneur with an established local reputation who overcomes the product quality obstacle then often encounters the capital and managerial obstacles. As has been noted, the craftsmen-entrepreneur normally lacks both the capital and educational background required for expansion into a Specialty Industry. This is especially so with respect to producer goods.

There are successful cases of producer goods production at the level of the Agricultural Region and Sub-Region but they typically result from a fortuitous combination of market growth, entrepreneurial skill, and locational advantage. In one case study of an Agricultural Region at an intermediate level of development with a relatively good financial infrastructure, employment in producer-goods production accounted for approximately ten percent of total employment in metal-working in the Region. This may provide a rough measure of what might be achieved in the medium term by an effort to encourage producer goods production, starting from a lower level of development.

It is sometimes assumed that metal-working as a rural industry will have powerful linkages to other industries. In general this is not true. Most production is for final demands of the household, or of the local user in the case of producer goods repair. Such production mainly uses raw materials imported from the enclaves. Even in the case of assembly operations, it is rare to find any local backwards linkages to component suppliers or other sub-contractors. In other words, the local producer is at the end of the chain of specialization, providing relatively low-

cost, though skilled, labor to finish the final product. Any higher skilled elements of the production process will normally have to be imported from outside the Region.

#### Section 5: Fostering Local Industry Growth

Returning to the context of the Sub-Region, it is apparent that it is difficult to aid Local Industry growth directly. With the exception of capital, local resources are sufficient to enable Local Industries to respond to increases in demand for their products. In this section it will be assumed that a substantial commitment on the part of the central government already exists to raise agricultural productivity. Thus, there are only two prime areas to be considered as avenues for promoting Local Industry growth, that is, increasing the amount of agricultural income spent on the products of Local Industries and increasing the capital available to the Sub-Region economy.

#### Increasing Demand for Local Industry Products

It will be assumed three groups share agricultural income: farm operator households, agricultural worker households, and landowner households. The first two groups will be spoken of together as "farm households."

Farm household expenditures are largely concentrated on wage goods, many of which are produced locally. Landowners household expenditures tend to be concentrated on other than wage goods, much of which may be produced in the industrial enclave or imported from abroad.

If a landowner is resident locally, substantially more of his agricultural income may be retained locally than is commonly believed. It may be applied in two particular areas: first, on housing and furnishings; second, as investment capital in local capital-intensive enterprises. A third area is often of significant proportions: socially or politically inspired largesse to aid family and friends, finance educations, or contribute to public endeavors.

Given these characteristics and assuming a situation of predominantly small-farm agriculture, the following measures will tend to increase the

amount of agricultural income spent locally in a Sub-Region:

- (i) Extending feeder roads to all villages will increase the number of farm households participating actively in the exchange economy.
- (ii) Improving town amenities, such as water supply and paved streets, will encourage some landowning households to reside locally more of the time, spending less time in city residences.
- (iii) Improving tenure conditions and tenure security on rented land over time will tend to raise the amount of income in the hands of farm households.
- (iv) Transferring title of rented lands to the farm operator may have the net effect of increasing expenditures on the goods and services produced by Local Industries.

It will be noted that the first two possibilities are likely to be relatively uncontroversial politically. The latter two are constructive options available to a political regime sympathetic to such changes. The fourth is not a necessary condition of rural growth; the third is more likely to be.

#### Rural Banking and Finance Development

An optimal financial development program to aid Local Industry growth would proceed at two levels. The primary effort should be at the macro level--to increase the supply of capital that is available in rural areas. At the micro level, efforts should be made to encourage local lenders to provide finance to Local Industries on a regular commercial basis.

The macro level program essentially involves dealing with the sum of all the channels by which outside finance is made available to Agricultural Regions. It has already been noted that the two largest channels are commercial banks and the financing of agricultural marketing. Finance also flows down with the distribution of manufactured consumer goods to Retail Trade outlets and of agricultural chemicals through

Agricultural Inputs Supply Dealers. Because of the importance of mobility in the modernizing countryside, the financing of vehicles and machinery also constitutes a distinct channel in which finance is important.

The sum of these five channels of finance accounts for the majority of the capital flowing to an agricultural area. It dwarfs the capital that may be provided directly through government programs. An elastic money supply to these five channels is needed if the rural economy is not to be constrained during periods of peak activity.<sup>12</sup>

A modern central banking system would accommodate such needs by varying the money available through the commercial banking system. Until the commercial banking system has developed into the primary channel of such finance, it would be reasonable in a developing nation for the central bank to operate a Rural Banking and Finance discount window willing to discount paper evidencing the distribution of agricultural products from rural areas and agricultural chemicals, consumer goods, and vehicles and machinery to rural areas. There is ample precedent for central bank discount window facilities to be made available to selected private sector industries as well as to commercial banks, although ideally such activity should pass through the latter as a means of strengthening their role.

The impact of a more elastic and increased flow of finance through these channels would be general in an Agricultural Region since one effect would be to free locally-generated finance to be reallocated to other purposes. A substantial portion of the finance presently employed in the five channels in question is in fact locally-generated. An increase in supply from outside sources would not only lower interest rates in those major distribution channels but would also lower the rates in the local informal capital markets. Thus, while Agro-industries, Retail Trade and the Transport industries would be aided directly, other industries using the informal capital market would be aided indirectly.

Micro level programs to increase rural credit have been focused on both quasi-public and private lending agencies, for example, cooperatives and rural banks. Such institutions have characteristically concentrated exclusively on providing agricultural credit. They have aided Local

Industries indirectly to some extent, however, through the effect the addition to the local supply of credit has on the structure of interest rates. (A direct effect occurs to the extent that such agricultural production credit is diverted into housing upgrading by the farm household, a not uncommon phenomenon).

Programs to formalize the local informal credit market have much to recommend them. The local money lenders collectively are often best viewed as a credit market and assumed to perform the basic local banking function efficiently and subject to a reasonable amount of competition. A rural banking program such as that in the Philippines has the effect both of formalizing the local banking industry and providing it with an increased supply of credit. Although historically rural bank lending has tended to be restricted to financing agriculture-related activities, there is no reason such banks should not be permitted to extend their lending activity to productive uses in Local Industry so long as they are required to bear some of the exposure, as they are under the agricultural-loan guarantee programs.<sup>13</sup> (Real estate lending of course would need to be prohibited.) A non-agricultural-loan guarantee program for rural banks could provide a basis for regularized lending of working capital to Consumer Industries in particular. This natural step in the development of local financial institutions could not but aid in the growth of Local Industry and would be worth the investment of effort required, among other things, to overcome whatever political bias there might be against drawing on the resource that local money lenders constitute.

#### Section 6: Local Industries as A Policy Variable

Local Industries constitute the missing piece in the rural development puzzle. They are the central piece whose inclusion orders the other major pieces and causes the picture to come clear. This conceptual clarification in turn is capable of facilitating design of programs to foster rural development that have political acceptability.

Conceptually, an understanding of Local Industries leads to an understanding of (i) the functional relationship between non-agricultural and

agricultural activities in Agricultural Regions, (ii) the importance of changes in agricultural income as opposed to output, and (iii) the relative unimportance for rural development of peripheral industrial activities. It is notable that analytically-useful measurements of these variables can often be obtained by disaggregating existing series of data on employment and agricultural productivity.

Politically, the nature of Local Industries holds out the possibility of formulating a single-valued objective for rural development capable of attracting majority support from a diversity of interests. Specifically, a focus on employment in Local Industries could be formulated so as to perform double duty in the framing of rural development policy. To urban-oriented interests it could be argued that enhancing labor absorption in Local Industries—which account for two-thirds to three-quarters of total non-agricultural employment nationally—offers a major part of the solution to the prospective urban unemployment "crisis" of the 1980s. To rural-development oriented interests it could be argued that Local Industries employment growth constitutes an effective proxy variable capable of assuring the support needed for some of the specific policy measures in which they have long been interested. Those policy measures for which majority support should be relatively easily obtainable under such a Local Industries employment objective would include those fostering: favorable agricultural price policies, improved agricultural technology, the availability of modern agricultural inputs, a complete farm to market road network, and the modernization of the structure of rural banking and finance.

These goals and measures are distinctive for being both a sufficient core program and relatively apolitical. By this is meant that in the many developing countries where a small-farm agricultural regime exists, these "core measures" could be expected to result in significantly increased agricultural productivity and incomes and accelerated structural transformation, even in the absence of rural reform measures. Formulating the problems of rural development in this way, rural reform becomes a policy option, rather than a prerequisite. In other words, by focusing on Local Industries employment it is possible to promote a

package of rural development measures free of issues which imply major reforms. Not only would this likely lead to broader and earlier support for the technical and economic requirements of rural development. It is likely this formulation would also foster understanding of the processes involved in rural growth, making it seem a less awesome task and possibly softening future opposition to moderate reform proposals.

In identifying core measures required for rural development, the elements of the problem are more easily classified according to necessity and sufficiency. This analytical perspective is of particular value in characterizing and promoting reform proposals. The relatively apolitical core measures are identified as being both necessary and sufficient for moderate growth of agriculture and Local Industries employment. Politically more-demanding options can then be viewed as the costs associated with gaining the benefits of additional rural growth. Three general options can be ranked according to political difficulty. Least difficult are measures to reinforce small-farm agriculture such as special extension, credit, and cooperatives programs. It is notable that proposals for local institutions reform can be presented in this context as being desirable for efficiency rather than equity reasons. It can be forcefully argued that vigorous local institutions are a necessary condition for the efficient implementation of government programs to raise small-farm productivity. Policies to improve land tenure conditions, especially tenure security, constitute a next step that can reasonably be expected to further increase agricultural output another notch. Land ownership reform represents a third level of cost which in turn may offer commensurate benefits.

The effect of evaluating a spectrum of options which correspond to a spectrum of goals as regards agricultural productivity and rural employment could well be to increase support for reform-oriented measures by demonstrating that all reform is not extreme. A focus on Local Industries employment may have negative value as well. One of its implications is that to opt for policies which turn the back on small-farm agriculture could be exceedingly costly in terms of urban unemployment. Should a

nation opt for overly-mechanized, large-farm agriculture the consequence will not only be increased displacement of labor from the land but also a diminished capacity of Local Industries to arrest its subsequent drift to the cities. In contrast, a policy of reinforcing small-farm agriculture promises relatively high labor absorption in agriculture and in addition vigorous growth of Local Industries.

Quantitative data does not presently exist to indicate to what extent such a double re-inforcement of labor-intensive production in Agricultural Regions might be capable of enabling those Regions to hold their populations in the future. The contrast with what a policy favoring large-farm agriculture offers and costs is likely to make small-farm agriculture with its attendant Local Industries employment potential seem attractive in many situations. Whatever the political choice, introducing Local Industries into policy deliberations adds a key element which acts as a synthesizer, making it possible to see more clearly the relative weights of the other rural development policy variables.

Footnotes

1. The spatial organization of an Agricultural Region is defined in the Appendix. There are some countries with littoral settlement patterns such as Taiwan and Malaya in which it is not possible to distinguish unambiguously-agricultural regions owing to industrial activity being widely interspersed in agricultural areas.
2. These conditions are not always satisfied in practice; on the other hand, they are too often assumed to be worse than they are in fact. The following sources deal at greater or lesser length with the role of Local Industries and market towns in developing nations: general discussion is found in Johnson(1970) on market towns, in Oshima(1971) on Asia, and Liedholm(1973) on Africa; discussions of employment in Local Industries are found in Shaw(1970), in ILO(1970) for Columbia, in Gibb(1974) and Polson(1973) for the Philippines, in Crosson(1973) for Mexico, in Mueller (1969) for Nigeria, in Johnson(1970) for Israel, in Skinner(1964), Galston(1973), and Denny(1972) for China, and in Gilpatric(1971) and Johl(1970) for India.
3. Seasonal employment is not so prevalent in Local Industries as is often thought. Seasonal peak workloads in many industries are met by the regular workforce.
4. Supplying agricultural inputs and processing and marketing agricultural outputs are activities that grow as a direct function of agricultural output growth. They would be treated as parts of the economic base in some contexts.
5. The illustrative distribution is derived primarily from data in Gibb(1974) for a Central Luzon sub-region. The general proportions of regular employment in Local Industries found in this case study are consistent with the more fragmentary evidence available from other sources for other countries.
6. There is a known case in which agricultural credit for small tractors was cut off when it was discovered they were being used to pull passenger conveyances on farm-to-town routes, a use deemed "unproductive". Personal transportation is better recognized as a necessary ingredient of rural development.
7. This impression of a unitary elasticity of agro-industry employment with respect to agricultural output is supported by the one study to date which has attempted to measure this elasticity (Gibb, 1974, pp. 195). The employment elasticities suggested below for Public Services and Consumer Industries also were supported by this study.

8. Retail Trade and Personal and Recreational Services employment often is believed to contain a large proportion of unskilled regular workers. This is a somewhat inaccurate impression. The pilferage of goods is such an important concern in these industries that employers, as a minimum, require a high degree of trustworthiness of their employees, a fact which sets even the least skilled of them apart from unskilled laborers. Low-skill workers in these industries tend to receive higher wages than unskilled laborers in recognition of this "skill".

9. The definitive work in this area is Staley and Morse(1965), Modern Small Industry for Developing Countries. Their comprehensive treatment identifies several other types of "modern" small-scale industry. It is convenient to limit the present discussion to only one.

10. Iron Works are a Consumer Industry classified under Millwork Industries.

11. Kilby(1972) has explored this area in some detail.

12. Mellor(1973), in his comments on current discussions of the role of agricultural credit in rural development, particularly emphasized that different agricultural regions will have substantially differing "credit cycles", not only seasonally but also by year since accelerated agricultural modernization is not initiated everywhere at once.

13. In the Philippines approved agricultural loans extended by rural banks were guaranteed under a fund administered by the Rural Banks Division of the Central Bank. The guarantee covered 90 percent of the value of the loan, the rural banker lending the remaining 10 percent at his own risk.

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## APPENDIX

### Organization of Space in an Agricultural Region

The typical well-developed agricultural region in a developing country has a three-tiered hierarchy of market towns ("central places") supporting its agricultural communities ("villages"). In the next section a set of definitions is given which provides a basic description of the agricultural region's spatial organization. Illustrative magnitudes of population and distance are included in the definitions. These refer to a "relatively densely" populated agricultural area and may vary widely in practice. In the subsequent section the basis for these definitions is discussed.

#### Definition of Terms

In the discussion of Local Industries, to which this Appendix is attached, the terms defined here are capitalized to indicate their restricted connotations. Particularly important is an underlying assumption about the "Agricultural Region", namely, that its economic base is unambiguously agricultural. Formally, this requires that there be no industries present in it which export products from the Region other than those processing and marketing its agricultural product. In practical terms, this assumption requires defining the "urban shadow" around major urban or industrial centers. This "shadow" is comprised of agricultural areas which are not unambiguously agricultural so far as their export activity is concerned. An urban or industrial center together with its urban shadow comprises an urban or industrial "enclave". The definitions are as follows:

Geographic region. A geographic area composed of several Agricultural Regions and having a population of 1-3,000,000. Such regions are usually readily recognized—e.g., Northeast Thailand, Western Nigeria, Central Luzon—but are not necessarily administrative areas. They often correspond to the statistical regions of a country, however.

Agricultural Region. This is an economic, as distinct from geographic, entity. It has a population of perhaps 500,000 and frequently corresponds to a major administrative unit such as the province. It is composed of a large number of farming settlements ("villages") served by a three-tier hierarchy of "trade centers". The Regional Center is the apex of the hierarchy and has a population of 20-50,000. The Agricultural Region is composed of 4-8 Sub-Regions.

Sub-Region. This is the primary unit of an agricultural economy, having a population of 75-150,000 and a two-tier hierarchy of trade centers. The District Town is the sub-region center and has a population of 10,000 or more while the three to six nearby Locality Towns have populations of under 5,000. The Sub-Region is often an administrative unit.

Locality. Sub-Regions are composed of three to six Localities, each having 15-30,000 people. In a fully organized Sub-Region, each Locality has a Locality Town, putting all farm households within 3-5 miles of a town. The Locality is usually either an independent administrative unit or a sub-unit of the Sub-Region.

Locality Trade Center. This is an embryonic Locality Town. Where the farm-to-market transport system is incomplete, permanent trade centers may not have come into existence yet in each Locality. In most cases, however, one of the larger, more central villages will be the site of the local weekly market. This market in many cases identifies the logical location for the Locality Town.

Village. Villages are defined as "farm settlements which are not trade centers". In relatively clustered settlement patterns they may have a population on the order of 1,200 (200 families). In a more dispersed pattern they may have only 50 families and a population of 300. Large villages often have a chapel or pagoda and a mini-store but they are not easily confused with a trade center.

Two special cases should be noted in connection with these definitions. First, the area around a Regional Center will always comprise a Sub-Region. As a result, the Regional Center performs two functions—it is basically the sub-region center for its Sub-Region

and at the same time harbors the additional functions and facilities of a Regional Center. Second, analogously an Agricultural Region which is contiguous to an urban or industrial enclave will often lack a Regional Center, that function being performed by the enclave.

It should be noted that the above definitions suggest by implication that by the time a town reaches a population of 100,000 or more there is real question whether it can any longer be viewed as a purely agricultural trade center. There is a presumption that a center of this size has at least some non-agricultural industries which are marketing to a part or all of the national market. Thus, in this context we assume that towns of over 100,000 are better treated as a part of the nation's industrial economy. Where they occur in a mainly agricultural geographic region they may require treatment as an enclave somewhat apart from the Agricultural Regions.

#### Economic Relationships Within An Agricultural Region

The emergence of the structure of trade centers in an Agricultural Region is the product of rising farm incomes. Idealizing the forces, as incomes increase in a given Locality, opportunities for specialization in both agricultural and non-agricultural production lead to increasing exchange and hence the emergence of trade centers. Initially the latter may only be periodic markets at convenient sites (Locality Trade Centers) but over time they are transformed into the Locality Town. As the process of income growth continues, one of the more central Locality Towns takes on more specialized functions and becomes a District Town serving the nearby Locality Towns as well as its own hinterland. During this process the Regional Center expands from being primarily an administrative center to a general economic center providing specialized services to 4-8 Districts.

The distances involved as between villages, Locality Town, and District Town and Regional Center are scaled in human terms. The Locality Town emerges within an easy day's round trip from the most distant villages it serves. The District Town is an arduous day's round trip from the more distant villages of the Sub-Region, using traditional modes of