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# Agricultural growth and rural nonfarm activities

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Judicious policies to improve agricultural production and incomes may create more nonfarm employment, given certain conditions.

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There has been rising interest in the capacity of rural areas to generate employment beyond that required to produce crops and raise livestock. Populations are growing, as are poverty and sprawling urban areas. Studies suggest nonagricultural activities contribute significantly to the economies of villages and small towns—between 20 and 40 per cent of the rural labor force in developing countries is primarily engaged in off-farm pursuits, and the proportion is rising in most countries. Yet the nature of these activities remains limited, and most are connected with local agricultural production. One of the main reasons has been the constraints of local demand—which implies that the most effective way to improve the employment potential of these pursuits is to raise agricultural output and incomes.

The process of development brings in its wake ever-increasing specialization—among urban areas, rural towns, and villages, among different agroclimatic regions, and among households and individuals. In a traditional subsistence environment, high transport and communication costs mean that farm households grow most of their own food crops, have very low cash incomes, and produce many nonagricultural goods and services themselves. Exchange, even within a subsistence community, however, can be quite well developed and support a number of occupational spe-

cialists, such as carpenters or potters, who derive little income from direct agricultural production. Better transport and communication can lead to whole regions becoming more specialized in fewer crops and, where land is still available, to a sharp expansion in cultivated areas. When Central Thailand was opened up to trade in the nineteenth century, for example, the number of crops it produced fell as it specialized in rice. At the same time, people specialize more, either entirely in agriculture or entirely in manufacturing and service activities, frequently neglecting traditional crafts for which cheaper, or "better," traded substitutes emerge. Reduced travel costs also mean people can find work outside their native villages. As transport systems improve, these specialized nonagricultural activities tend to be concentrated in small rural towns, which also act as administrative and educational centers.

There is no question that rural areas as a whole gain from specialization. Agricultural producers profit from the higher incomes brought in from more markets, while the region also benefits from having access to a wider range of consumption goods produced more efficiently by specialists. Thus, during the 1960s and 1970s, increased specialization in the poor north-eastern districts of Thailand led to substantial income gains, with incomes earned from nonagricultural activities growing significantly faster than those earned from the farms. Nevertheless, some agricultural producers and craftsmen can lose from the changes and, within each region, the benefits of specialization will often be very unevenly distributed. Women and older people could, for instance, be particularly affected if the activities displaced either were pursued only by women—such as home weaving in many countries—or were undertaken by the less mobile family members in periods of low agricultural activity.

Both experience and analysis show that the crucial question for the prosperity of the local nonfarm sector is how the increased incomes from specialization are spent. Marginal budget shares and income elasticities tend to be higher for nonfarm goods and services than for farm outputs (except perhaps for animal products and fruits). As regional incomes increase, therefore, more will tend to be spent on nonfarm goods and services. If the nonfarm products are produced locally, higher incomes will expand the nonfarm sector.

## Determinants

Nonfarm pursuits appear to originate in the search of rural households for earning opportunities that can be combined with farming, given the opportunities and constraints of local demand. Rural nonfarm activities—in order of their importance for nonfarm employment—generally consist of the provision of consumer goods and services for local markets—including some manufactured goods; the processing and transport of agricultural commodities, and the provision, transport, and production of agricultural inputs; the rendering of public services (for example, teaching); and the manufacture of a limited range of goods for export to other regions or abroad, mainly textiles, handicrafts, and metal goods.

Their dominant feature, besides their variety, is their local and limited nature. Rural towns carry on very few economic activities not directly or indirectly related to local agriculture; in particular, the range of their manufacturing exports is very restricted. Agriculture, like other industries based on natural resources, is not mobile, and all other factors of production must be moved to it for production to take place. But most nonagricultural production activities, in principle, can be pursued either in rural or urban environments, and over a sufficiently long period, labor could migrate to-

ward it. While it is not hard to understand why the quantitatively so important commercial and service activities must be located near or at the point of final rural demand, it is more complicated to sort out why certain manufacturing activities are usually located in rural areas and others—chemical, rubber products, electronics, to name a few—almost never are.

Mining and agroprocessing units, for instance, have to be located near the mine or growing region; the latter either because processing makes the raw material lighter or because it is perishable. Rice mills or cane sugar factories are examples of agroindustries. Where economies of scale exist, these factories can be very large—virtually the only large manufacturing activities to be carried out in rural areas. Processing activities that do not involve perishability or weight loss are frequently performed in urban centers. A good example is rubber. The production of rubber sheets or blocks takes place in rural areas because the substance is perishable, while vulcanization and the production of rubber products normally occurs in urban centers.

Construction materials—bricks, cement blocks, and so on—are also often produced in rural areas to minimize the transport costs of both inputs (which are frequently locally available) and their output. Some service-type manufacturing activities are produced in rural areas; small rice mills and bakeries are an illustration, because they provide goods that would otherwise be produced in the home.

Other rural manufacturing exports, such as textiles, pottery, and other handicrafts, often grow out of traditional activities. They may be performed in households or small factories, have low capital intensity, and often use female or child labor on a seasonal basis. Skills for textile activities are easily acquired and returns to labor are often extremely low. Textiles can contribute significantly to the economy. In India, handicraft and handloom goods account for about 6 per cent of the value of the country's exports. One of the most successful cases of modern rural industrialization, Taiwan (Province of China), is almost entirely based on textiles and agroprocessing, made possible by a number of factors, including extremely high population densities; a north-south highway linking the two major ports, along which most manufacturing takes place; and a supportive policy environment.

The production of metal goods and agricultural implements or machinery for export may also emerge out of traditional pursuits, and is frequently based on the production of new or locally adapted designs suggested by customers unsatisfied

with designs imported from elsewhere (well-documented cases exist for India, Japan, Taiwan, Thailand, and the United States). Actually most mechanical agricultural inventions originate in such small-scale local units in collaboration with innovative farmers.

### Perceptions

Another factor that could entice manufacturing into the rural areas would be low labor costs relative to those in the urban areas. But in most countries, where both annual and seasonal migration between rural and urban areas is unrestricted and becoming easier, the difference in the cost of hiring workers on a full time annual basis may not be that large. There is no doubt that, where agricultural production has pronounced seasonal peaks, rural labor might be much cheaper in the slack season, but few industries can be economically operated on a seasonal basis. Industrial processes frequently require major capital investments; when labor becomes unavailable during periods of high agricultural activity, capital is unemployed. Seasonality of agricultural work leads to a trade-off between seasonal "underemployment" of labor and seasonal "underemployment" of capital. Moreover, modern industrial processes (such as electronics) may need considerable on-the-job training of labor, an added reason for manufacturers to insist on a year-round commitment of the labor force. To compensate rural workers for forgone agricultural opportunities, the industry may have to pay them nearly as much as urban workers would get.

Textile and handicraft activities are prevalent in rural areas precisely because their low capital and skill intensities minimize the trade-off between underemployment of labor and capital. (They are also adapted to rural areas in other ways.)

A commonly perceived constraint to rural manufacturing is the shortage of skills, both entrepreneurial and technical. But with the exception of large-scale mining and agroprocessing units that import highly trained craftsmen and engineers from urban centers (and compensate them accordingly), skills for nonfarm activities are almost always acquired on the job, either informally or via more formal apprentice systems. In study after study, scarcity of specific skills acquired in formal training is downplayed by rural entrepreneurs as a barrier to expansion. They see the limitation of final demand as a much more important impediment to growth.

Broadly speaking, the small-scale nature of most nonfarm activities is mainly determined by the constraints of local demand and the supply of factors of production.

The few manufacturing activities that flourish in the rural areas are there for technological or transport cost reasons or because they can easily adapt to the seasonal nature and skill levels of the labor supply.

### Competition from urban areas

The nature of rural manufacturing is determined as much by competition from the urban areas as it is by constraints in the rural areas. Powerful economies clearly exist from urbanization to induce most industries, services, and even those agroprocessing activities that do not involve weight loss or perishability to be concentrated in cities. The economies of being there must overcome (modestly) higher labor costs, high space costs, and the diseconomies arising from congestion and pollution. Both the economies and the diseconomies are hard to measure, but the fact that urban areas almost universally attract labor out of the rural areas is an indication that the economies of production and consumption are real, large, and persistent, and outweigh the diseconomies.

It is doubtful that technical economies of scale are an important attraction; where they exist—as they do in sugar production and mining, for example—they are realizable in rural as well as urban areas. But from the point of view of any given producer, economies are more likely to be those of "scope." For inputs, these arise out of the multiplicity of production inputs, services, and labor skills in the urban areas. An urban firm can specialize more because it can purchase a wide variety of inputs and production services that a rural firm might have to provide itself. The advantages of scope for marketing products in the urban areas arise from the multiplicity of clients in easy reach, and of transport, marketing, and communication services that can be used to reach consumers and markets elsewhere. Economies of scope also arise in the urban labor market. Employers can recruit from a labor force with diverse skills, and employees face a wide variety of opportunities to acquire and use highly specialized skills.

These economies of scope can be significant. In Thailand, there was a dramatic improvement in road access of rural towns and villages during the 1960s and 1970s, particularly in the Center Region, where fewer than 5 per cent of the villages are now more than one kilometer from a road and do not have an access road. Although the effects on agricultural and nonagricultural growth have been marked, these transport investments have largely failed to stimulate manufacturing activities that are not related or adapted to the agricultural environment.

Since rural manufacturing is generally limited and specific to a particular region, and since the other nonfarm activities are small scale, heterogeneous, and widely dispersed, the potential for direct stimulation through national project or program interventions is limited. More important are policies that affect their growth indirectly.

### Policy issues

The main determinant of these pursuits is local consumer and producer demand. Policies that promote or discourage agriculture will, therefore, have powerful effects on them. This conclusion is borne out by the exceptional nonfarm growth experienced in recent decades by regions or countries that have achieved high growth rates in agricultural production and income, such as the Muda region of Malaysia, the Indian Punjab, and Taiwan.

Yet the developing countries as a group, while making considerable investments in rural areas, and frequently despite measures aimed at stemming urbanization, have often pursued price, trade, and exchange rate policies and have enacted quantitative controls that sharply distort incentives against agricultural production in favor of import substituting or export-oriented manufacturing. Many of the manufacturing policies and programs have further distorted incentives in favor of capital-intensive ventures, and (via quantitative controls on imported inputs or lower cutoff points on the size of industrial plants eligible for subsidies and other incentives) in favor of large-scale enterprises. These policies must have seriously hampered the growth of rural nonfarm activities and employment. In Sierre Leone, for instance, the sewing machine—an important capital item for rural small-scale firms—was classified and taxed as a luxury consumer good until recently. Improving the incentives for agriculture and removing distortions in manufacturing would, in many countries, contribute to an environment in which nonfarm activities could provide better growth and employment opportunities. In addition, many countries have favored urban areas by the provision of infrastructure and public services, and have failed to tax externalities of congestion and pollution.

There are also important indirect benefits for nonfarm employment from investments in irrigation, agricultural research, and improvements in rural credit and savings systems, although, again, quantification is difficult. The impact of investments in transport and communication has already been discussed. Where these systems are poorly developed, further investments can have high payoffs in terms of both agricul-

tural and nonagricultural rural growth (though they may be unable to attract a diverse set of manufacturing activities from urban areas). The apprehension that roads may displace more nonfarm activities in rural areas than they create has not been borne out by research. Moreover, such investments can also be aimed at poorer regions.

Government construction—of roads, irrigation, and drainage systems, or of buildings—has received particular attention as a tool to increase nonfarm employment. The choice of techniques should be determined by the need to employ labor, and contracting and labor recruitment should fit in with local agricultural conditions. In low-wage countries, for instance, the use of techniques with low capital intensities is imperative. And in many cases, the timing of construction can be meshed with the seasonal needs of local agriculture, especially where high levels of rainfall make construction during the growing season difficult. Countries such as India systematically use government-sponsored infrastructure construction to alleviate seasonal unemployment and the consequences of drought. Some states, such as Gujarat or Maharashtra, have developed quite effective methods and procedures that may be applicable elsewhere.

A rural development strategy based primarily on agricultural growth does, however, have limitations. Demand is limited for most agricultural commodities, so if production of the same goods is increased simultaneously in many regions, the terms of trade may move against agriculture, with adverse consequences for rural incomes. One answer is to stress the production of commodities with relatively higher income and price elasticities.

Rural development runs into more serious difficulties in regions with low agricultural potential and rapidly growing populations and labor forces, which include mountainous areas and most of the semi-arid tropical world. Agricultural opportunities exist even here and should not be neglected, but growth will be slower than in more prosperous regions, and migration

will occur. This can improve the welfare of the migrants as well as the position of those left behind—in fact, an extreme view is that migration obviates the need to invest in these regions. But experience with similar disadvantaged regions in the developed world (Southern Italy, Massif Central in France, Appalachia in the United States, and so on) shows that it takes a very long time before migration equalizes economic opportunities between poor and rich regions.

Migration is still a very important substitute for regional development assistance. Since many of these regions can be expected to provide migrants for decades to come, and since their potential for productive investment is limited, a strategy to redistribute incomes toward these areas would need to include important investments in human capital. These investments, in education and training, are important for two reasons: first, so that those who remain can make the most of local opportunities, and, second, so that migrants from the area do not enter the workforce in their destinations at the bottom of the social ladder.

There are clearly opportunities for specific investment in rural manufacturing, and successful projects do exist. However, there is an equally impressive and long record of failures, which include many training schemes and rural industrial estates. Many of these projects fail because they invest before examining the limitations of local markets—because they may underestimate the difficulties of linking local producers to more distant markets or because they may want to close a skill gap that may not exist. They also tend to pay insufficient attention to limitations and seasonality in labor supply.

Most Asian countries have by now created institutions to foster rural textile and craft industries. Private entrepreneurs have also penetrated deep into rural areas as purchasing and marketing agents, and often also provide inputs, designs, and/or credit. Some Asian countries provide industrial extension services in rural areas. In other parts of the world, especially in Africa, such institutions may still need to be created. But they can only be effective if they are based on a thorough understanding of the opportunities and limitations of final demand and types of activities that would complement agriculture. However, the effects of these interventions are not likely to be very large. Major sustained improvements in incomes and employment in the rural areas are more a matter of judicious agricultural policies, improvements in rural infrastructure, and investments in human capital.



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