

**THE ROLE OF NONFARM ACTIVITIES
IN THE RURAL ECONOMY**

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**EEPA Discussion Paper No. 7
November, 1986**

Prepared for

The Employment and Enterprise Development Division
Office of Rural and Institutional Development
Bureau for Science and Technology
U.S. Agency for International Development
Washington, D.C. 20523

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The views and interpretations in this publication are those of the authors and should not be attributed to the Agency for International Development or to any individual acting on its behalf.

The Employment and Enterprise Policy Analysis Project, composed of a consortium of Harvard Institute for International Development (Prime Contractor), Development Alternatives, Inc., and Michigan State University (Subcontractors), is funded under U.S. Agency for International Development Contract No. DAN-5426-C-00-4098-00.

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Executive Summary

This paper examines the role of rural nonfarm activities in developing countries and their relationship with agriculture. Drawing on recent research findings, it seeks to present a clearer delineation of the rural nonfarm economy--its magnitude, its anatomy and how it changes over time.

Rural nonfarm activities productively absorb a large quantity of rural labor and provide a major source of income to a majority of rural households. Because they are the source of a particularly large share of sustenance to the rural poor, rural nonfarm activities are revealed to have a substantial impact on reducing income inequality. In addition, many of these activities are shown to add more to the Gross National Product than the substitute goods supplied by technically-advanced capital-intensive producers.

The various ways that the rural nonfarm sector stimulates agricultural growth are also examined. The increased agricultural productivity that results from the rural, small scale farm equipment industry's capacity for "idiosyncratic design adaptation" is particularly stressed. Also examined is how the rural nonfarm sector contributes to agricultural growth through reduction of marketing costs and through substantial income effects on food expenditure.

The size and growth prospects of the rural nonfarm economy are determined by the demand for those goods and services that could potentially be supplied by this sector and by the supply response of the enterprises in it. The most potent demand source arises from the rural household's demand for a wide array of rurally-produced consumer goods and services. The recent findings of several rural household expenditure studies have revealed that a strong, positive relationship exists between changes in rural household income and changes in the demand for these rurally-produced activities; indeed, these activities are shown to have the potential to grow more rapidly than agriculture itself. With respect to supply considerations, the empirical evidence of "excess capacity" in existing nonfarm enterprises and the relatively low entry barriers for new firms indicates that both the short run and the long run supply responses should be substantial. An examination of available statistics reveals, in fact, that rural nonfarm employment has been increasing over time in most developing countries.

Several policy implications emerge from the study. Among them are the need for a "neutral" policy environment with respect to firm size, the relevance of agricultural policies for the development of nonfarm activities, and the importance of developing the infrastructure in rural towns.

THE ROLE OF NONFARM ACTIVITIES IN THE RURAL ECONOMY

I

Until quite recently it has been conventional to equate, in a rough way, the rural economy with the agricultural economy. Rural households, containing anywhere from 30 to 70 percent of the nation's population, were envisaged as having as their primary function the production of food and fibre for the home market and one or more crops for the export market. In addition to farm production, household members might as secondary activities be engaged in a certain amount of agricultural processing, transporting and marketing.

This view has begun to change in the past few years.¹ There is a growing recognition that the nonfarm sector plays an important welfare-augmenting role in providing simple consumer goods and services to poorer rural households; from the other side, the provision of these goods and services provides a humble but critical income to landless labor. But for most policy makers the image remains that of a passive sector -- passive in so far as its size is seen as being wholly dependent upon the level of farm income and passive in that it makes no independent contribution to economic growth.

In this paper, drawing upon recent research, we attempt to present a clearer delineation of the nonfarm rural economy -- its magnitude, its anatomy and how it changes over time. We present evidence to show that nonfarm activities not only make a major welfare contribution with respect to equity and income-smoothing, but that many of these activities add more to GDP than the substitute goods and services supplied by technically-

1. See, for example, the contributions of Johnston and Kilby (1975), Mellor (1976), Chuta and Liedholm (1979), and Anderson and Leiserson (1980).

advanced capital-intensive producers. Finally, we argue that the sector is no more or less passive than any other sector in the economy, and that it can make substantial contributions to agricultural growth.

II

Given that conventional statistical measures of employment and output do not exist for most nonfarm activities, how can we measure the sector's size? There are three ways. First, there is frequently information on occupational classification of the rural population that is collected during the decennial population census. Second, there are especially-designed establishment surveys within a given sample area. Finally, there are rural household income-and-expenditure surveys undertaken within the context of a national sampling design.

Table 1 presents mainly census-based figures on the share of the rural labor force whose primary occupation lies outside of farming. Although the range runs from 14 to 49 percent, in over three-quarters of the countries the nonfarm share is between 19 to 28 percent. While this itself is a very large magnitude, it is nevertheless an underestimate (e.g. larger rural towns are excluded, women's nonfarm work is undercounted, secondary occupations--which net out heavily in favor of nonfarm activities--are omitted).

The second panel in table 1, showing the composition of nonfarm activities, is also derived mainly from census data. While there is considerable variation between the nine countries, the three major components are manufacturing (including agricultural processing and repair activities), trading and services. Since trading is the most common secondary occupation, it is likely that this category is understated.

A second source of information on the rural nonfarm sector is the specially-designed establishment survey. These are generally limited to

3'

TABLE 1

A

**PERCENTAGE OF RURAL LABOR FORCE WITH PRIMARY EMPLOYMENT
IN RURAL NON-FARM ACTIVITIES**

Country	Year	Coverage	Percentage of Rural Labor Force Primarily Employed in Non-Farm Sector (%)
Guatemala	1964	All rural	14%
Thailand	1970	All rural	18
Sierra Leone	1976	Male-rural	19
South Korea	1970	All rural	19
Pakistan	1970	Punjab only	19
Nigeria	1966	Male-3 dist. W. State	19
India	1966	All rural	20
Uganda	1967	Four rural villages	20
Afghanistan	1971	Male-Paktia Region	22
Mexico	1970	All-Sinaloa State	23
Colombia	1970	All rural	23
Indonesia	1971	All rural	24
Venezuela	1969	All rural	27
Kenya	1970	All rural	28
Philippines	1971	All rural	28
W. Malaysia	1970	All rural	32
Iran	1972	All rural	33
Taiwan	1966	All rural	49

B

**SECTORAL COMPOSITION OF RURAL NON-FARM EMPLOYMENT IN SELECTED COUNTRIES
(Percentage)**

	Afghanistan (1970)	India (1966)	Indonesia (1971)	Sierra Leone (1975)	Phil- ippines (1970)	Korea (1970)	Colombia (1970)	Malaysia (1970)	Taiwan (1966)
Manufacturing	46%	39%	29%	40%	34%	30%	33%	22%	27%
Construction	9	14	5	2	11	10	8	5	4
Trade and Commerce	11	14	34	35	15	24	19	22	13
Services	10	24	27	23	30	29	33	41	50
Other ¹	<u>24</u>	<u>9</u>	<u>5</u>	<u>—</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>10</u>	<u>6</u>
	100%	100%	100%	100%	100%	100%	100%	100%	100%

NOTES: ¹ Includes utilities, transport, and miscellaneous; omits "other and unknown"

SOURCE: Chuta and Liedholm (1979).

manufacturing units which, because of their relative fixity of location, are easier to count than concerns engaged in, say, transportation, construction or petty trade. Table 2, which reports the percentage of total manufacturing employment that occurs in the rural areas, is primarily derived from this type of sample survey. These percentages are usually built up as follows: formal urban employment (plus some large-scale processing employment in rural areas) obtained from the standard statistical series, to which are added employment estimates for fabricating activities in the urban informal sector with the final component being provided by the rural establishment survey.

Are the reported facts of table 2 to be believed--that in ten of the thirteen countries rural areas account for over half of manufacturing employment? Like census data, establishment surveys are not entirely reliable with respect to aggregate measurement; but unlike census data, we can not say whether the result is an over-estimate or an under-estimate. On the side of producing too low a figure, this type of survey does not capture non-commercial production (for own consumption) and it most surely overlooks some out-of-the-way small producers.² This source of undercounting can be magnified or reversed, first, by the particular point in the agricultural cycle that the survey took place since part-time work constitutes a large share of nonfarm activities, and, second, by the geographical areas of the country that happen to be sampled since the volume of nonfarm activities typically exhibits substantial regional variation. Hence, there is no obvious bias in the estimates reported in table 2 -- the likelihood that they are too low is equal to the probability

2. Comparisons of the street by street, village by village enterprise censuses conducted by M.S.U. and host country scholars with "official" censuses find that the latter not infrequently undercount the number of small enterprises by a factor of two or more (see Liedholm and Mead, 1986).

5
TABLE 2PERCENTAGE OF MANUFACTURING (LARGE AND SMALL SCALE) EMPLOYMENT
IN "RURAL AREAS"

Sierra Leone -- 1976	86
Indonesia -- 1976	80
Sri Lanka -- 1971	75
Jamaica -- 1980	74
Ghana -- 1973	72
Bangladesh -- 1974	68
Zambia -- 1985	64
Philippines -- 1976	61
India -- 1967	57
Pakistan -- 1975	52
Taiwan -- 1976	49
Malaysia -- 1970	46
Korea -- 1975	30

Note: rural defined as all localities under 20,000 inhabitants.

Sources: Liedholm and Mead, (1986).

that they are too high.

Specially-designed establishment surveys also provide a great deal of information about the nature and functioning of the nonfarm sector. While firm size may range over 20 employees, the great preponderance of these rural nonfarm firms are very small.³ Liedholm and Mead's (1986) review of evidence from over a dozen countries reveals that 85 percent of the small rural manufacturing firms employed fewer than five employees with the one-person firm generally dominating. Larger units engage both unpaid family workers and wage-paid employees. Combined fixed and working capital per person is typically modest. Unlike the enumerated wage labor force, women constitute a large fraction--40 percent or more--of those engaged in the sector and frequently account for the majority of the small scale entrepreneurs. Acquisition of skills takes place through apprenticeship and other forms of learning-by-doing.

This brings us to the final source of statistics on the size of the nonfarm sector, the rural household income survey. Based upon a carefully-drawn random sample of several thousand rural households and entailing weekly data collection over the course of a year covering household receipts by source, expenditures, labor allocation and a host of supplementary variables, these surveys--if constructed for the purpose--provide the most accurate measurement of both employment and output⁴. Problems of part-time work, seasonality, overlooked enterprises, secondary occupations--all vanish. The bad news is that such surveys are extremely

3. Small scale is defined for the purposes of this paper as firms employing less than fifty persons. Rural is defined, unless otherwise specified, as localities with 20,000 inhabitants or less.

4. Similar types of "enterprise surveys" using a cost-route method to collect weekly data from small firms have been conducted by Michigan State University and host country scholars in Sierra Leone, Bangladesh, Jamaica, Honduras, Thailand and Egypt. (See Liedholm and Mead, 1986 for details).

expensive and require great organizing abilities from the statistical agency in charge. As a consequence this desirable source of information is not often available.

Table 3 presents the nonfarm income share for five countries. Comparison with table 1 reveals that in four out of the five cases, the income share is substantially larger than the "primary occupation" share. And the one exception, Taiwan, is almost certainly the result of the decade discrepancy between the two measurements. If these few figures are indicative, we may tentatively conclude that the nonfarm sector ranges from one-half to three-quarters the size of the agricultural sector. Thus it constitutes a major sector in all low and middle income economies.

III

Are rural nonfarm activities a major source of income for the poorest rural households? If so, do they serve to reduce income inequality in rural areas? Do they also contribute to stabilizing income among poorer households over the course of the year? Answers to these questions should provide us with a reasonably comprehensive assessment of the equity issue.

Given that land is the farmer's principal productive asset, size of holdings has commonly been used as a variable to stratify rural households into income classes. How important is rural nonfarm income for those with little or no land? Not surprisingly, an examination of data from five countries in Asia and Africa (see Table 4) reveals an inverse relationship between size of landholding and the share of nonfarm income in total rural household income. For the smallest landholding categories in each country, nonfarm income sources account for over fifty percent of household income.

Is the income derived from these nonfarm sources sufficient to reduce income inequalities within the rural areas of these economies? For the two African cases as well as Thailand (see Table 4), the nonfarm income sources

TABLE 3
SHARE OF NONFARM INCOME IN TOTAL RURAL HOUSEHOLD INCOME

<u>Country</u>	<u>Year</u>	<u>Percentage</u>
Northern Nigeria (3 villages)	1974	28
Korea	1980	34
Sierra Leone	1974	36
Taiwan	1975	43
Thailand	1978	43

Sources: Northern Nigeria: Matlon (1977).
Korea: Korea (1981).
Sierra Leone: Unpublished results from Sierra Leone African Rural Employment Project reported in Chuta and Liedholm (1979), (includes households in rural towns plus in villages).
Taiwan: Taiwan (1981).
Thailand: World Bank (1983).

TABLE 4

9

SIZE OF LAND HOLDING AND RELATIVE IMPORTANCE OF
NON-FARM INCOME IN TOTAL HOUSEHOLD INCOME

COUNTRY	Size of Holding	Non-farm Income Share in Total House- hold Income (%)	Total Household Income (\$)
Korea - 1980	0.00 - 1.23 acres	74%	\$3,005
	1.24 - 2.47 acres	39	3,450
	2.48 - 3.70 acres	28	4,321
	3.71 - 4.94 acres	23	5,472
	4.95 + acres	16	7,401
Taiwan - 1975	0.00 - 1.23 acres	70%	\$2,768
	1.24 - 2.47 acres	52	3,442
	2.48 - 3.71 acres	44	3,701
	3.72 - 4.94 acres	39	4,570
	4.95 + acres	26	5,566
Thailand - 1980-81 (4 Regions)	0.00 - 4.10 acres	88%	\$1,362
	4.20 - 10.20 acres	72	974
	10.30 - 41.00 acres	56	1,613
	41.00 + acres	45	1,654
Sierra Leone - 1974	0.00 - 1.00 acres	50%	\$ 587
	1.01 - 5.00 acres	23	404
	5.01 - 10.00 acres	14	546
	10.01 - 15.00 acres	12	770
	15.00 + acres	15	927
Northern Nigeria - 1974	0.00 - 2.46 acres	57%	\$ 479
	2.47 - 4.93 acres	31	377
	4.94 - 7.40 acres	26	569
	7.41 - 9.87 acres	15	769
	9.88 + acres	24	868

Sources: Korea: Korea (1981).

Taiwan: Taiwan (1977).

Northern Nigeria: Matlon (1977).

Sierra Leone: Matlon *et. al.*, 1979 - includes data from 550 rural households in villages only nation-wide. Thus, the average nonfarm share is lower than that reported in Table 3.

Thailand: figures derived from primary data generated by the survey of 424 rural households (village) in four regions conducted by the Thai Rural Off-Farm Employment Project. For details, see Narongchai, *et. al.* (1983). Although households were chosen at random within villages, some of the villages were chosen because of their varieties of non-farm activities. Thus, they are not "representative" of the entire country. The average nonfarm income share is 65% in this example compared with 43% for farm households reported for the entire country. (World Bank, 1983).

cause the total income of rural households with the smallest amounts of land to exceed the incomes of those with somewhat larger farms. This "vertical J"-shaped relationship between total rural household income and landholdings is perhaps not unexpected in Africa, where land is not a limiting factor. It also appears to hold in some parts of Asia, such as in Thailand and Japan, but it is not ubiquitous (see Korea and Taiwan in Table 4).

These general findings, however, do call into question the notion that farm size is a consistently good proxy for total rural household income or a good indicator of who are the rural poor. Indeed, a complex set of factors bearing on farming, nonfarm enterprises and off-farm trading and employment opportunities determine rural household income levels. Although this heterogeneity complicates the task facing policy-makers in dealing with the rural poor, it also means that there is a much wider set of opportunities that can be developed.

A better indicator of whether or not rural nonfarm income reduces income inequality, however, can be obtained by relating the total nonfarm income share to total rural household income. Although information on this relationship is sparse, data are available for Sierra Leone, Nigeria, and Thailand. An examination of Table 5, in which rural nonfarm income shares are related to total rural household income quintiles or terciles (from low to high), reveals the "vertical J" shaped relationship again. Rural nonfarm income is thus relatively important at both ends of the income distribution spectrum. Differing types of nonfarm income are important at the low and high income ends of the distribution. For the low income rural household, wages from working on other's farms and service-type activities are the predominant sources, while for the high income households salaries from administrative and manufacturing activities tend to predominate. These

11
TABLE 5PERCENTAGE OF RURAL HOUSEHOLD INCOME
EARNED FROM FARM AND NONFARM SOURCES BY INCOME CLASS

COUNTRY	Income Class	Farm	Non Farm
<u>Sierra Leone</u>	Lowest Tercile	80.3%	19.7%
	Middle Tercile	81.2	18.8
	Highest Tercile	80.0	20.0
<u>Northern Nigeria</u>	Lowest Quintile	76.6	23.4
	Middle Quintile	78.0	22.0
	Highest Quintile	61.4	38.6
<u>Thailand</u> (4 Regions)	Lowest Quintile	37.5	62.5
	Middle Quintile	44.0	56.0
	Highest Quintile	34.9	65.1

Sources: Same as Table 4.

latter activities tend to have higher entry barriers and yield higher returns than agriculture or the other types of rural nonfarm activities.⁵

What is the net effect of these various nonfarm income sources on overall income inequality in rural areas? The results from two African studies as well as from Thailand indicate that including nonfarm income with farm income reduces the rural Gini coefficients in each case. Gini coefficients calculated on per capita farm income alone were .43 in Sierra Leone and .32 in Nigeria, compared with coefficients on combined farm and nonfarm incomes (rural) of .38 and .28 respectively, (Matlon et.al., 1979). In rural Thailand, the Gini declines from .58 when only farm income is considered to .38 when all the sources of the rural households' income are included.⁶ The available evidence, albeit limited, does suggest that rural nonfarm income reduces rural income inequalities in several countries.

Rural nonfarm activities also contribute to the smoothing of household income over the year. An analysis of the monthly income fluctuations of 424 rural households in Thailand reveals, for example, that the variability of total household income was substantially less than the variability of net farm income over the year.⁷ Studies from Northern Nigeria and Sierra Leone point to similar findings, (Matlon, et. al., 1979). Farm and nonfarm activities tend to move in opposite directions over the year and income earned from nonfarm sources complement the pattern of net farm income

5. The high return nonfarm activities, however, still generally yield a lower return on average than their urban counterparts. See Chuta and Liedholm, (1979) for details.

6. Calculated from data on 424 rural households collected by the Thai Rural Off-Farm Employment Project. See Norongchai, (1981) for details.

7. The coefficient of variation computed for net farm income was 2.07, but was only 0.64 for total household income, which includes nonfarm income sources. Computed from monthly data generated by the Thai Rural Off-farm Employment Project (see Naronchai, 1983).

received.⁸ Overall, nonfarm activities are thus seen to make an important welfare contribution with respect to both equity and income stability in rural areas.

IV

Are these rural nonfarm enterprises efficient users of economic resources? Although seen to possess equity virtues with respect to the distribution of income, they are frequently thought to be inefficient and thus confront policy-makers with a potentially vexing trade-off. If, however, some categories of rural nonfarm enterprises are found to generate more real output per unit of resources expended than their larger scale urban counterparts, then agricultural and other policies that enhance these activities can increase both output and employment.⁹

The evidence on the economic efficiency of rural nonfarm activity has been rather meagre. Comparisons of small and large scale enterprises using partial efficiency measures, particularly the output - capital ratio have been made, but these have yielded at best a mixed picture of the relationship between capital productivity and size.¹⁰ Moreover, only rarely are rural and non-industrial enterprises specifically examined in these analyses. These studies also suffer from the limitations that surround all partial efficiency measures; if some resource other than the one included in the measure is scarce and thus has a non-zero opportunity cost, then it

8. See below for a more detailed examination of the complementary nature of farm and nonfarm inputs.

9. Employment would increase if the labor capital ratio of smaller firms exceeded those of the larger ones. Virtually all empirical studies find that small rural enterprises are more labor intensive (usually measured in terms of the labor-capital ratio) than their larger scale counterparts in the aggregate. At the industry-specific level, the same results generally hold, although a few exceptions exist (such as in Korea). See Liedholm and Mead (1986) for details.

10. See, for example, Page and Steel (1984) and Liedholm and Mead (1986) for a review of the evidence.

may yield incorrect results.

Comprehensive economic efficiency measures, such as total factor productivity and social benefit-cost analysis, overcome the limitations of the partial ones.¹¹ Ideally, all scarce resources are explicitly included in the analysis and are evaluated at their "shadow" or "social" prices that reflect their scarcity values in the economy. Unfortunately, only a few such studies exist [Ho, (1980) and Cortes, et. al. (1985)] and none consider rural nonfarm enterprises explicitly.

Liedholm and Mead (1986), however, recently used a social benefit-cost measure to compare the relative efficiency of small rural manufacturing enterprises with their larger scale urban counterparts in Sierra Leone, Honduras, and Jamaica. Following the approach suggested in Cortes et.al (1985), the ratio of the enterprise's value added to the cost of its capital and labor, both valued at their shadow or "social" prices, was used to measure economic efficiency.¹²

The primary data used to derive the social benefit-cost ratios were generated from the detailed small scale industry surveys that Michigan

11. For a detailed discussion of these measures, see Biggs, (1986).

12. More specifically, the social benefit cost ratios (SBC) is calculated on the basis of the following formula:

$$SBC = \frac{VA}{r_s K + w_s L}$$

where:

VA = valued added

r_s = shadow or "social" price (interest rate) of capital

K = total fixed and working capital

w_s = shadow or "social" price of labor

L = total labor hours, including family and apprentice hours

A ratio greater than one means that the activity or enterprise has a positive effect on the total output of the economy, while a ratio less than one means it has a negative effect. If actual (e.g. domestic) rather than "social" (e.g. world) prices are used to evaluate value added, however, the SBC can only be used to compare the productivity of enterprises in the same sector.

State University and host country researchers had conducted.¹³ Hundreds of rural firms in each country were interviewed twice weekly over a twelve month period to obtain daily information on revenues and costs. The information on the large scale enterprises was obtained from the worksheets used to construct the Industrial Censuses in Sierra Leone and Honduras and from the National Planning Agency's Industrial Survey in Jamaica.¹⁴ In calculating the social benefit cost ratios, the "shadow" social price of capital was assumed to be 20 percent, while unpaid family labor was valued at the average price for skilled labor in small scale industry.¹⁵ Since world prices for outputs and material inputs were not available for the Honduras and Jamaican studies, domestic prices were used; this means efficiency comparisons had to be limited to large and small rural enterprises operating in the same product group with reasonably similar mixes of output and purchased inputs.

The key finding from this three-country analysis is that the small manufacturing enterprises are found to use fewer resources per unit of output than their larger scale counterparts in a majority of the industry groups considered. A glance at Table 6 reveals that the social benefit-cost ratios are higher for rural small scale enterprises in 8 of the 12 cases examined. Only in the wearing apparel industries of Jamaica and

13. Approximately 495 rural manufacturing firms were surveyed in Honduras (see Stallmann, 1983, for details), 200 in Sierra Leone (see Chuta and Liedholm, 1985, for details), and 150 in Jamaica (see Fisseha, 1982, for details). Small scale refers to firms employing 50 persons or less, while rural refers to localities with 20,000 inhabitants or less.

14. The dates of the large and small industry surveys differed slightly in Jamaica and Honduras. Although the small enterprise surveys were both conducted in 1979, the large scale surveys covered 1977 in Jamaica and 1975 in Honduras. The economic conditions in these countries did not differ markedly between these period, however, so the validity of comparisons should be not seriously vitiated.

15. The actual wages paid to all workers in large scale enterprises were included at 80%. For a justification of these adjustments, see Haggblade, Liedholm and Mead, 1986.

TABLE 6

SOCIAL BENEFIT-COST RATIOS (DOMESTIC PRICES)¹
FOR VARIOUS LARGE AND RURAL SMALL SCALE INDUSTRY GROUPS IN
AFRICA AND LATIN AMERICA

<u>Country/Enterprise Group</u>	Rural ² Small Scale	Large ³ Scale
<u>Africa:</u>		
<u>Sierra Leone (1974-75)</u>		
Bakery	1.86	1.03
Wearing Apparel	1.78	0.53
Shoes	1.65	2.00
Furniture	0.81	0.87
Metal Products	1.63	1.61
<u>Latin America:</u>		
<u>Honduras (1979)</u>		
Wearing Apparel	0.82	0.89
Shoes	1.27	0.54
Furniture	1.44	0.84
Metal Products	1.21	0.74
<u>Jamaica (1979)</u>		
Wearing Apparel	1.00	1.79
Furniture	2.51	1.36
Metal Products	1.87	1.58

Source: Sierra Leone small scale enterprise data collected in 1974-75 survey reported in Chuta and Liedholm (1985); large scale data from worksheets used to generate Census of Manufacturing figures of Central Planning Unit, Government of Sierra Leone, 1974-75. Honduras small scale enterprise data collected in 1979 enterprise survey in four regions reported in Stallman (1983); large scale industry data obtained from worksheets used to construct the 1975 Census of Industry. Jamaica: small scale enterprises data collected in 1979 survey reported in Fisseha (1982); large scale data collected from worksheets used by the National Planning Agency for their 1977 industrial survey.

Notes:

1. Gross output and purchased input values used to compute value added (numerator) are evaluated at actual (domestic) prices; hired labor evaluated at actual wages paid for small and at 0.8 of actual wages for large. Unpaid family (including proprietor) valued at skilled wage rate for small scale industry in each country (Le. 0.16 per hour in Sierra Leone, Lm. 0.71 per hour in Honduras and J\$ 1.50 per hour in Jamaica). Capital was evaluated at a shadow interest rate of 20% in each country. For a rationale for these particular shadow rates, see Haggblade, Liedholm, and Mead (1986).

2. Small scale firms employ less than 50 persons

3. Large scale firms employ fifty persons or more. With one exception, these firms are located in large urban areas.

Honduras and the shoe and furniture industries of Sierra Leone do the larger sized enterprises prevail. Moreover, the social benefit-cost ratios for small rural nonfarm enterprises exceed one in all but two industries. Such findings provide at least limited support for the contention that some small rural nonfarm activities in developing countries are economically efficient.¹⁶

One weakness of this analysis is that output and purchased inputs were valued using domestic rather than world prices. Fortunately, sufficient data were available from Sierra Leone to enable a computation of enterprise social benefit cost ratios at world prices to be made.

The results of this analysis, summarized in Table 7, reveal that at world ("social") prices, small scale manufacturing enterprises in Sierra Leone are more efficient than their larger scale counterparts in all the enterprise groups considered except for shoes. The aggregate social benefit cost ratio for rural small scale industries is +1.57, indicating that small industries overall are economically efficient and have a positive effect on the total output of the Sierra Leone economy. Moreover, except for furniture the ratios for the individual industries all exceed one, indicating their positive contributions to the economy as well. By contrast, the social-benefit cost ratios for large scale industry is 0.49 overall, and exceeds one in only a single industry group, shoes.¹⁷ The large scale activities, consequently have a negative effect on the Sierra Leone economy. A shift of resources to rural small industry would thus

16. Ho (1980) for Korea and Cortes et. al. (1985) for Colombia find that large scale enterprises tend to be more efficient than their smaller scale counterparts using comprehensive efficiency measures. They do not consider rural activities explicitly, however.

17. The ratio did exceed one for several individual large firms and industries, but because of confidentiality rules their individual figures had to be combined with others.

18
TABLE 7

SOCIAL BENEFIT-COST RATIOS
LARGE¹ AND RURAL SMALL² SCALE MANUFACTURING ENTERPRISES IN
SIERRA LEONE -- 1974-75

Industry	Social Benefit Cost Ratio Domestic Prices ³		Social Benefit Cost Ratio World Prices ⁴	
	Rural Small Scale	Large Scale	Rural Small Scale	Large Scale
<u>Food</u>				
Bakeries	1.86	1.03	1.80	0.68
Beverages	-	1.79	-	0.89
Others	-	4.41	-	-2.46
<u>Textiles</u>				
Wearing Apparel	1.76	0.53	1.38	-0.30
Gara Cloth	4.82	-	3.68	-
Shoes	1.65	2.00	1.14	1.40
<u>Wood</u>				
Furniture	0.81	0.87	0.52	0.48
<u>Metal</u>				
Metal Products	1.63	1.61	1.16	0.90
<u>Repairs</u>	4.78	-	4.78	-
<u>All</u>	<u>1.94</u>	<u>1.74</u>	<u>1.57</u>	<u>0.49</u>

Sources: Small scale enterprise data collected in 1974-75 survey reported in Chuta and Liedholm (1985); large scale enterprise data obtained from Census of Manufacturing data collected by Central Planning Unit, Government of Sierra Leone 1974-75. Data were obtained from 15 of the 28 large industries; these 15 firms accounted for over 90 percent of the large industry value added. Customs data obtained from the Government. Specific tariffs converted to ad valorem rates based on current f.o.b. prices.

Notes:

1. Large firms employ fifty or more persons
2. Small firms employ less than fifty persons
3. For the social benefit-cost ratio (domestic prices), the gross output and purchased input values used to compute value added (numerator) are evaluated at actual prices in Sierra Leone; hired labor is evaluated at the market wage for small and at 0.8 of actual wage for the large; apprentice labor is evaluated at Le 0.06 per hour and family labor at Le .16 per hour; capital is evaluated at 20% using the capital recovery factor for the fixed component. For the rationale of these shadow price estimates, see Chuta and Liedholm (1985)
4. For the social benefit-cost ratio (world prices), the gross output and purchased input values at domestic prices were adjusted for the "nominal tariffs" on imported elements. Where quantitative restrictions applied, such as for flour, the difference between c.i.f. import prices and domestic prices were used.

appear to make economic sense.

V

What determines how large the rural nonfarm economy is in any given country and what are its likely growth prospects? This can be approached by examining, on the one hand, expenditure patterns for those goods and services that could potentially be supplied by this sector and, on the other hand, by the supply response of rural nonfarm enterprises.

We begin with the best documented and largest class of expenditures, namely consumer goods and services. Although rural household expenditure studies are not uncommon, they typically do not distinguish the source of various consumption goods, e.g. whether the shoes purchased were made overseas, in a major urban area or in the rural economy. Investigations which do draw this distinction have been carried out in Sierra Leone (King and Byerlee, 1978), Nigeria and Malaysia (Hazell and Roell, 1983).

In table 8 below the combined budget share of food expenditures (including alcohol and tobacco) ranges from two-thirds to four-fifths of household spending. This, of course, reflects modest levels of per capita income in all rural economies. The lesser reliance on home-produced food in the Muda area of Malaysia and the greater reliance on food imported from outside the region are the joint effect of higher income level and more specialized agriculture.

Among the goods and services that make up the "local nonfood" category are tailor-made clothing, footwear, hats, wooden furniture, pottery and mats; firewood; schooling and medical care; domestic servants, laundering and hairdressing; films, eating and drinking out; repairs, improvement and construction of homes; public transport and the operation of own transport.

In all three countries it is this "local nonfood" category that has the highest expenditure elasticity. This means that a 10 percent increase

TABLE 8

RURAL EXPENDITURE ELASTICITIES IN THREE COUNTRIES

	<u>Average Budget Share</u>			<u>Expenditure Elasticities</u>		
	Sierra Leone	Nigeria	Malaysia	Sierra Leone	Nigeria	Malaysia
Own food	47	56	27	.87	.88	.37
Local food	21	19	19	1.06	1.09	.76
Imported food	NA	5	21	--	1.07	.65
Local nonfood	9	9	18	1.40	1.34	2.05
Imported nonfood	NA	11	15	--	1.16	1.66

Notes: Sierra Leone: a national sample 1974, N = 203
 Nigeria: the Gusau region 1977, N = 321
 Malaysia: the Muda region 1973, N = 839

Sources: Sierra Leone - King and Byerlee (1978) p. 204; Nigeria and Malaysia - Hazell and Roell (1983) p. 28.

in household income in Sierra Leone will lead to a jump in spending on local nonfarm goods and services equal to 14 percent, to a 13 percent increase in the Gusau region of Nigeria and to a 20 percent increase in Muda. Thus we have strong evidence that rural nonfarm goods and services are not "inferior", but rather have the potential to grow more rapidly than agriculture itself, providing an expanding share of all rural employment.

Individual components of the nonfarm category have sharply differing expenditure elasticities. The highest elasticities are associated with services. Thus, in the case of Sierra Leone the figure for transport is 1.38 and for personal services and ceremonial outlays 2.38. By contrast the elasticity for manufactured products originating from small scale producers is 0.76. In Gusau and Muda the figures for housing construction and repair are 1.40 and 3.02, and for transportation 1.67 and 1.48.

Elasticities for specific manufactured goods for Sierra Leone and Bangladesh are shown in Table 9. The Bangladeshi households, at a per capita income of about \$100, are the poorest of the four countries and, presumably, have the smallest budget shares devoted to nonfood items. Particularly impressive in both countries are the higher income elasticities of demand for rural based production relative to the products of large-scale urban industry

The actual growth in farm and nonfarm rural employment has, in the aggregate, followed the pattern predicted by these expenditure elasticities. However, it is likely that the composition of nonfarm activities will be different than that suggested by the elasticity coefficients. Specifically, expenditures on rural manufacturers will be somewhat lower and expenditures on services (particularly trade and transportation) will be higher than predicted.

Beginning with manufacturers, the initial range of rurally supplied

TABLE 9

EXPENDITURE ELASTICITIES OF RURAL HOUSEHOLDS FOR VARIOUS
SMALL AND LARGE ENTERPRISE PRODUCTS

Products	Sierra Leone ^a (1974)	Bangladesh ^b (1980)
<u>Food:</u> Bread -- small	+0.69	+1.14* ^c
<u>Clothing:</u> Dresses and pants (tailoring) - small	+0.72*	+0.96**
Dresses and pants (clothing) - large	+0.59	--
Dresses and pants (imported)	+1.49	+0.29
Lungi - small	--	+1.61*
Lungi - large	--	+1.00*
Sari - small	--	+2.00*
Sari - large	--	+0.63**
Sari (synthetic) - large	--	+1.74*
<u>Wood:</u> Furniture -- small	+1.61*	+2.00*
<u>Metal:</u> Agricultural tools and utensils -- small	+0.50	+1.06*
Agricultural tools and utensils -- large	+0.89	+1.29*
All Small Scale Industry ^d	+0.76*	--
All Large Scale Industry ^d	+0.33	--

Sources: Sierra Leone, King and Byerlee (1977); Bangladesh, BIDS (1981).

Notes: ^aIn Sierra Leone, data from 203 rural households were fitted into a modified form of a ratio semilog inverse expenditure function.

^bIn Bangladesh, data from 444 rural households were fitted into a semilog expenditure function with the values in table estimated at mean expenditure levels.

^c * estimated coefficients significant at 1% level;

** estimated coefficients significant at 5% level.

^dFrom King and Byerlee (1978)

goods will be larger or smaller depending upon craft traditions and the entrepreneurial endowment (e.g. it tends to be larger in Asia than in Africa). But in all countries as per capita income rises there is a shift in location from village to regional town and metropolitan area. Although the rural producer has an advantage in less expensive labor and premises, improving rural roads progressively diminish the natural protection he enjoys against urban competitors. At the same time the more gifted rural entrepreneurs are attracted to the towns where the larger markets promise higher entrepreneurial returns; economies of agglomeration yield further advantages in the availability of more skilled labor and of cheaper, more diverse raw materials. Production in the towns, while carried out in units four or five times the size of the rural producer, is still comparatively small-scale and labor-intensive.

To the extent large scale public investment is made in building up the infrastructure of regional towns, many entrepreneurs will locate here and the output will not be lost to the larger rural economy. But to the extent entrepreneurs do migrate to the urban areas and to the extent urban-based substitute goods--plastic utensils, synthetic textiles--replace traditional products, the demand for rurally-produced manufactured goods will fall. Because these changes -- along with other shifts in taste and relative prices -- occur over time, they are not picked up in cross-section expenditure surveys and hence the latter's expenditure coefficients are an overestimate.

Expenditure studies may also be deficient with respect to nonfarm transport and trading activities, since most of these are embedded in the price of the consumer good. In so far as there is a shifting away from village-produced goods to more distant sources, the share of these marketing services will rise. Hence, inferences from household expenditure

patterns are likely to underestimate the growth in aggregate rural nonfarm services.

The two remaining, smaller categories of expenditures pertaining to nonfarm activities are production outlays on farm inputs (backward linkage) and expenditures on processing and marketing of agricultural output once it leaves the farm (forward linkage).¹⁸ In the case of production inputs, cement for irrigation works, fertilizer (typically the largest single input expenditure) and other agricultural chemicals do not originate in the rural economy; the same is true for four-wheel tractors. Equally, some portion of agricultural processing takes place in urban areas. One of the few studies that has attempted to net out intersectoral purchases is that of Bell, Hazell and Slade (1982) for Muda; they found that one-third of the incremental income was due to backward and forward linkages, whereas two-thirds was attributable to consumption expenditures.

While localized forward linkages give rise to considerably more value-added than the comparable agricultural inputs¹⁹, the latter--particularly farm equipment--play a unique role in their potential impact on agricultural productivity. Other nonfarm activities such as trading and transport stimulate farm output by reducing marketing costs, which leads to an outward shift in demand at the farm-gate. Farm equipment inputs, on the other hand, can act directly on the yield per acre and output per person.

18. These forward linkages with respect to agricultural output are similar to the marketing services for nonfarm products described in the preceding paragraph.

19. A good overview of specific production inputs and processing activities is available for Thailand in (World Bank, 1983). The share of all manufacturing value-added deriving from rice milling, rubber processing, cassava chipping, tobacco curing and fruit canning that takes place in rural areas is many times larger than that of farm equipment and animal feed. For a more general treatment of the relative size of forward and backward linkages over the course of economic development, see A. Simantov, (1967).

There are two components to the nonfarm sector's "productivity contribution" to agriculture. The first is related to the rural farm equipment industry's capacity for idiosyncratic design adaptation. In the animal draft farming sector of many Asian, African and Latin American countries there are only three or four types of ploughs in use, both for breaking the soil and for secondary tillage. In Taiwan, local blacksmiths have provided farmers with a wide array of cheap, highly specialized implements. Primary tillage to one side, of eight secondary tillage implements one is the harrow. There are eleven kinds of harrows: the comb harrow, three knife-tooth harrows (standard, bent frame, flexible tooth), two spike harrows, the bamboo harrow, the pulverising roller, the stone roller, the tyned tiller, and disc harrow. A single one of these harrows, the standard knife tooth, has twelve regional variants. Width, length, material, number of teeth, shape of tooth blade and method of affixing teeth are adapted to local topography, field size, soil structure and available construction materials.

The results of idiosyncratic design adaptation is that the task--in this case secondary tillage--is done more quickly (higher labor productivity) and it is done more effectively (higher land productivity). More dramatic, better known examples of idiosyncratic design adaptation include India's portable irrigation pump based on vertical high-speed diesel engines made in small engineering workshops, and Thailand's

Prapradaeng power tiller²⁰.

These last two examples also illustrate the second way that rural farm equipment producers raise agricultural productivity. This second component is the supplying of inexpensive partial-mechanization inputs which break labor bottlenecks and thereby pave the way to higher cropping intensity. Additional examples here include small electric or gasoline pumps, small motors attached to threshers and winnowers, as well as backpack sprayers. The result is higher output per acre per year and increased labor income through higher utilization of manpower over the course of the entire year. In summary, the rural nonfarm sector stimulates agricultural output in three ways: through substantial income effects on food expenditures, through reduction of marketing costs, and through the productivity contribution of localized farm equipment manufacturers.

VI

The extent to which the increase in demand described above will translate into an expansion in rural nonfarm output depends importantly on the supply response. In the short run, this will be a function of the amount and source of the excess capacity of existing firms; in the long run the barriers constraining the expansion of existing firms or the entry of new firms is the key determinant.²¹

With respect to the short run supply response, available evidence

20. The case of the power tiller in Thailand is instructive. Japanese power tillers for paddy cultivation had not been widely adopted owing to high purchase price. A low-cost adaptation, developed by I.R.R.I. in the Philippines, was introduced in the late 1960's; it did not succeed. The Prapradaeng tiller was developed locally and improved through a prolonged iteration between local farm users and the equipment producers--the forcing house of successful appropriate technology--and is now manufactured by more than forty small firms.

21. The current and prospective relative efficiency of substitute goods from sources external to the rural area is also of critical importance as discussed above.

indicates that there is a substantial amount of "excess capacity" among the rural nonfarm enterprises in many developing countries. Excess capacity measures are difficult to quantify precisely and studies in developing countries are particularly sparse, usually limited to larger urban firms.²² Surveys of small rural manufacturing firms conducted by Michigan State University and host country researchers in five countries, however, have generated some information on many facets of their operation including excess capacity.²³ On the basis of the responses of rural entrepreneurs to the question of how many additional hours they would operate their existing firms if there were no demand or materials constraints, the estimates of overall excess capacity ranged from 18 percent in Egypt, 24 percent in Honduras, 35 percent in Jamaica, 37 percent in Sierra Leone and 42 percent for rural manufacturing firms in Bangladesh, (Liedholm and Mead, 1986). Excess capacity did vary somewhat between industries and by location in each country, but rarely did it decline below 10 percent; virtually no small rural firms in these countries operated on more than a single shift.

What was the primary source of this excess capacity? The limited survey evidence indicated that rural entrepreneurs perceived that demand factors were more important than supply ones. In Jamaica and Sierra Leone, the only two countries in which the question was asked, over eighty percent of the entrepreneurs reported that the lack of demand was the primary source of their excess capacity. In such cases, demand-stimulating policies play a central role.

22. See Bautista, 1981, for a discussion of the various studies as well as a treatment of the distinction between excess capacity (i.e. how close to its desired, efficient level of output a firm is operating) and "capital utilization" (i.e. the proportion of the total time a productive capital stock is operated).

23. A detailed discussion of these studies can be found in Liedholm and Mead (1986). Kilby and D'Zmura (1985) also provide information on this topic.

On the supply side, lack of raw materials and working capital were the most frequently cited sources of excess capacity. A common cause of raw material shortages for small rural firms is the country's foreign exchange regime, which in many cases discriminates against the small producer, (see Haggblade, Liedholm, and Mead, 1986 for details). Lack of working capital, which tends to be the largest component of total capital for small enterprises in developing countries, is the other major supply factor leading to excess capacity. These shortages often tend to occur at various intervals over the course of the year. The primary external source of funds is the advance payments by customers rather than commercial banks or even the informal market.²⁴ Although internal cash flow generated from within the firm tends to predominate, funds also arise from other components of the rural household, which is frequently engaged in multiple enterprises.²⁵ Indeed, in contrast to specialized farming households, rural households that also undertake nonfarm activities as well, have nonidentical time patterns of cash flows and hence provide internal cross finance that reduces recourse to external borrowing. Meyer and Alicbusan's (1984) study of the cash flow analysis of a sample of Thai rural households revealed that nonborrowing households were more heavily engaged in nonfarm activities than were the borrowing households.

Labor, on the other hand, does not appear to be a generally binding short run constraint for rural nonfarm activities. The dominance of the agricultural demand for labor and its seasonal characteristics are of key importance in understanding rural labor activity. Yet, one must be careful

24. See Kilby, Liedholm and Meyer, 1984, for more details on the role of working capital and rural nonfarm firms.

25. For a discussion of the new agricultural household models, which include multiple activities but also the integration of consumption and production activities, see Singh, Squire and Strauss (1986).

in treating farm and nonfarm employment as separate entities. The very close, often symbiotic, relationship between these two categories of labor over the agricultural cycle is central fact that must be considered in any policy intervention. The empirical evidence indicates that in most countries there is no period when nonfarm activities cease; thus, nonfarm employment does compete somewhat with agricultural employment during periods of peak demand for farm labor. Over the seasons, however, farm and nonfarm employment move in opposite directions and thus, are highly complementary. For instance, data from Sierra Leone (Byerlee, et. al., 1977) reveal that during the slack agricultural months nonfarm labor use is nine times the use in peak agricultural periods. The fluidity of labor between a number of activities on a seasonal basis is an essential characteristic of the rural household and serves to reduce overall variability of labor use over the year. In a study of four regions of Thailand, for example, the coefficient of variation in rural households' use of farm labor over the year was 0.56, but declined to 0.21 when nonfarm activities were included.²⁶ Similar reductions in the coefficient of variation are found in studies conducted in Sierra Leone, Northern Nigeria and Malaysia.²⁷ In summary, the magnitude and causes of the excess capacity found to exist in most rural nonfarm activities would indicate that a significant short run supply response would be likely.

26. Computed from monthly data generated by the Thai Rural Off-farm Employment Project (see Narongchai et. al., 1983). The magnitude of the decline in the coefficient was inversely related to the size of the farm. The coefficient of variation was computed as the standard deviation of monthly labor input divided by the mean monthly labor input.

27. In Northern Nigeria, the coefficient of variation declined from .49 for farming activities alone to .19 when all the households' farm and nonfarm activities were combined (computed from data in Norman, 1973). In the Muda region of Malaysia, the coefficient of variation for farming activities alone was .51, but was .20 when the nonfarm activities of the household were included, (Barnum and Squire, 1981).

In the long run, the barriers to entry can play a potentially important role in determining the supply response of rural nonfarm enterprises. Primary among them are the capital, skill, and entrepreneurial constraints.

How significant are the capital constraints? A review of the empirical evidence would indicate that such barriers for most rural small enterprises are low, but by no means insignificant in some instances. The overall initial capital requirements reported in most studies of rural manufacturing enterprises would appear to be quite small, ranging from \$50 in rural Sierra Leone, \$839 in rural Bangladesh, to \$1066 in rural Jamaica (Liedholm and Mead, 1986). In relation to average incomes, however, the significance of the capital barrier looms larger in some countries. In Bangladesh, for example, the \$839 overall initial capital requirement amounted to almost six times the country's per capita income. These figures also mask the wide variations in initial capital requirement by type of small enterprise. In Bangladesh, new jute baling firms required over \$13,000 in initial capital, while only \$6 was required for new rural mattress enterprises (B.I.D.S., 1981). There is also evidence, though more limited, that these barriers are higher for manufacturing than for most unskilled service and petty trade activities. For instance, Fisseha's (1986) recent survey of forest-based activities in rural Zambia reveals that the initial capital requirements for the major manufacturing activities were five times those for the service-related ones. The funds needed for either creating or expanding these enterprises are overwhelmingly obtained from such sources as personal savings, gifts, and informal loans from family or relatives. Studies from such countries as Sierra Leone, Haiti, Bangladesh and Jamaica indicate that over 80 percent of the initial capital for rural manufacturing firms come from these

internal sources, while about 90 percent of the funds used for expansion are reinvested profits. They have little access to "formal" credit sources, traceable in part to policy discrimination between large and small firms (see Haggblade, Liedholm, and Mead, 1986), and rarely use even the "informal" credit market. Lack of capital would thus appear to act at least as a partial barrier to the entry of new firms into some types of rural nonfarm enterprises. In general, however, these barriers are not unduly high, so they should not act as a serious constraint on the expansion of these activities.

What of the human capital constraints that might limit an expansion of rural nonfarm firms? A review of the evidence from various small rural enterprise surveys indicates that the formal educational barriers to entry are low. In many countries, however, the "informal" apprenticeship system or on-the-job training play a key role in skill formation. The proportion of rural manufacturing proprietors who were themselves apprentices or received on-the-job training was 90 percent in Sierra Leone, 75 percent in Jamaica, 52 percent in Honduras and 50 percent in Egypt, (Liedholm and Mead, 1986). The period of informal training defines the length of the gestation period for new capacity and varies markedly by type of enterprise. In Sierra Leone, for example, it varies from one year in gara (tie-dyeing), to four years in metal working, while in Egypt the training period ranged from one month in hat-making to three years in shoe-making (Davies, et. al., 1984). In general, training is a more significant entry barrier in manufacturing than in petty trades or simple service activities. Fisseha, (1986) reports that in rural Zambia only 16 percent of the service and vending entrepreneurs had training, while the comparable figure for the manufacturing entrepreneurs was 82 percent.

In summary, all the ingredients are present for a highly competitive

system and one that responds quickly to changes in consumer demand. The expansion sequence is as follows: an increase in demand leads to a price rise which in turn widens entrepreneurial earnings that act to attract a larger supply of apprentices and soon-to-be independent producers. The relatively low capital barriers tend to be met with funds generated from internal sources and new capacity is thus created with its attendant downward pressure on prices and profit.

VII

Has rural nonfarm activity, in fact, been increasing over time?

Aggregate statistics indicate that it generally has. Anderson and Leiserson (1980), using secondary ILO data, have shown that the employed rural labor force increased faster between 1959 and 1970 than the agricultural labor force in all regions except for Latin America. Specific data for nine countries reported by Chuta and Liedholm (1979) reveal that the percentage of the labor force engaged in nonfarm work has risen in all of them. They also report the following annual growth rates in nonfarm rural employment: Korea 1960-74 at 3.2 percent, Taiwan 1955-66 at 9.4 percent, Kenya 1969-75 at 8.8 percent, Mexico 1960-70 at 5.6 percent, Iran 1956-72 at 4.8 percent and Indonesia 1961-71 at 5.5 percent.

There are important variations in the growth rates by type and size of enterprise. By firm size, for example, time series data on differential rural growth rates are sparse, but some limited information on rural industrial growth rates are now available for firms employing from one to fifty persons in India (1961-71) and Sierra Leone (1974-80), (Liedholm and Mead, 1986). These data indicate that a direct relationship exists between the growth rates and firm size. In both these countries, the growth in the number of rural industrial firms is highest in the 10 to 49 employee size category, for example, and lowest in the one-person firm category. Indeed,

in Sierra Leone, the number of one person rural industrial firms actually declined during the time period covered by the study. Such findings tend to reinforce Dennis Anderson's (1982) conclusion, that "household" manufacturing for the country as a whole "tends to decline first in relative and then in absolute terms as industrialization proceeds." Moreover, the growth rates were higher the larger the size of locality and thus, reflect the shift to provincial towns noted above.

VIII

To sum up our main points. Nonfarm activities productively absorb a large quantity of rural labor and provide a major source of income to a majority of rural households. Because they are the source of a particularly large share of sustenance to the rural poor, they have a substantial impact on reducing income inequality. An exclusive focus on land reform as solution to rural poverty is mistaken. Finally, nonfarm activities are not only efficient contributors to G.D.P., but they stimulate agricultural growth through effects on income, farm productivity, and marketing costs.

Differing public policies will result in a larger or smaller rural nonfarm economy. The redirection of large scale public expenditures towards the development of infrastructure in rural towns is one potent intervention available, and is, of course, highly to be desired on other grounds. A second area is the creation of a general policy environment that is at least neutral with respect to the size of enterprises (Haggblade, Liedholm and Mead, 1986); for instance, implicit tariffs on tools and equipment, raw materials, and spare parts should not be higher for smaller firms than for larger firms as is true in many countries. In addition, it should not be overlooked that, given the strong linkages, policies aimed at increasing agricultural output are relevant to raising

nonfarm output and employment. At the project level, the new lending modalities for channeling working capital to micro-enterprises should be pursued (Kilby and D'Zmura, 1985). Finally, the strength of the nonfarm sector depends upon the infusion of new technical knowledge. Research and development expenditures need to be aimed at design upgrading of farm equipment, transportation vehicles, and traditional consumer products; use needs to be made of best-practice surveys and adaptive research to improve existing artisan production processes. But these steps will in all probability only be taken when those in power are more fully informed of the size and potential contribution of the rural nonfarm sector and then are willing to commit themselves to the potentially hazardous task of mobilizing new constituencies and placating the old.

35

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