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**The Role of Small Scale Rural  
Industries in the Recovery and  
Development of the Southern  
Sudan**

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THE ROLE OF SMALL SCALE RURAL INDUSTRIES  
IN THE RECOVERY AND DEVELOPMENT OF THE SOUTHERN SUDAN

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## I. INTRODUCTION

The focus of development policy on the promotion of small scale rural industry arises from the continuous changes in the perception of development as a result of experiences with various strategies since the end of the second world war. The first emphasis on economic growth based on massive urban industrialisation did not bring the expected modernization and take-off into self-sustained growth in underdeveloped countries. Instead, urban open unemployment and underemployment, glaring inequalities and absolute poverty increased. Consequently, there was a shift in the literature on direct attack on poverty, inequalities and unemployment. The role of the informal sector in the urban areas and the role of agriculture in the rural areas were highlighted. But agriculture alone in the rural areas cannot lead to sustained development. Hence, later emphasis was put on integrated rural development. The integrated rural development was to embrace development of infrastructure and social services in addition to agriculture. The role of small scale rural industry aims at the diversification of the rural production system and hence enhance the employment, output and income earning opportunities in the rural sector.

This paper attempts to discuss the role of small scale rural industry in the Southern Sudan. Given the absence of data on this activity in the Southern Sudan, emphasis is given to qualitative analysis.<sup>1</sup> The activities that have been undertaken in the Southern Sudan are highlighted. Suggestions are

made on what else can be encouraged there. Integrated within the discussion of each activity are the necessary policies that could be pursued in order for these activities to play their role in the recovery and development of the Southern Sudan in the post second war period.

The importance of this subsector in the reconstruction and development of the Southern Sudan arises from the fact that this is the only industrial subsector that has had a greater role than large scale urban industry in the South. The skills for the revival of this subsector exist and given the less demanding complementary facilities and inputs this sector requires, it could respond much more quickly to the recovery of the South than the encouragement of large scale industry. Moreover, this subsector is of immediate direct benefit to the rural population through agricultural production, employment and incomes; poverty alleviation and minimization of rural-urban migration. Furthermore, it provides a sound basis for further development.

Rural industry also contributes to food security as it supplies and repairs the farm tools and implements. It increases the market for agricultural output leading to encouraging increased food production as well as the ability to purchase food by those not directly engaged in agriculture. In the case of crop failures rural industrial employment can provide earnings for food purchases from other areas and/or imports. Part-time rural industrial activity reduces underemployment, and therefore increases the income of the rural population and enhances their

ability to purchase food and have a diversified food basket.

However, before we discuss the role of rural industry in the Southern Sudan, we first outline the state of industrial development of the South before the second war. Secondly, we review the role of small scale rural industry in under-developed countries so as to situate the position of the Southern Sudan in a broader perspective.

## 2. INDUSTRY IN THE SOUTHERN SUDAN

Formal industrial development has hardly started in the Southern Sudan as a result of its political history. Traditional handicrafts has been the major form of manufacturing up to the present time. However, traditional handicraft production has been basically a secondary occupation and it is not long far back when its products entered the modern sector as commodity for sale.

With regard to modern industry it was only towards the end of the colonial era that the first factories were set up in the South.<sup>2</sup> In 1952, a spinning and weaving mill was established at Nzara. An oil processing mill started in Yirol and a number of saw mills were established in Katire, Loka West and Wau and other minor centers. A fruit canning factory was commissioned in Wau in 1967. The first civil war brought virtually all of these activities to a standstill and some were even destroyed.

Since 1972, a few private industries started operations in the South. These included bakeries, ready-made clothes

manufacturing, tobacco processing and manufacture, boat building, soft drinks, mineral water and ice production, and a number of small scale production units such as tailoring, carpentry, blacksmithing, motor and bicycle repairs, miscellaneous mechanical and electrical repair units, etc. Most of these activities were concentrated in the major towns, especially the largest three, namely Juba, Wau and Malakal.

To boost industrial development, the Southern Regional Government, in Juba, initiated a number of industrial development projects. These included:<sup>3</sup>

- (1) Handicraft industry;
- (2) Kapoeta Cement Factory (Feasibility Studies);
- (3) A Foundry;
- (4) A Fruit Processing Plant;
- (5) Plastic and Steel Pipes Manufacture; and
- (6) A Bicycle and Motorcycle Assembly Plant

In addition to the above projects of the Regional Government, the Central Government, in Khartoum, included in its development plans, the completion, rehabilitation or reactivation of a number of on-going or dormant projects in the South which were at various stages of implementation in 1972. These included:

- (1) The Nzara Agricultural Production Corporation;
- (2) The Wau Fruit Canning Factory;
- (3) The Tonj Kenaf Project;
- (4) The White Nile Brewery at Wau;
- (5) The Melut and Mongalla Sugar Projects <sup>a</sup>;d
- (6) The Mongalla Textile (Weaving) Project.

Until the outbreak of the second civil war in 1983, neither the Regional Government nor the Central Government projects had materialized. Those that had been operational and needed rehabilitation or overhauling, such as the Nzara complex, deteriorated further.

In the private sector, the Regional Government issued licenses for establishment, in the South, of the following industries:<sup>5</sup>

- (1) Juba Slippers Factory;
- (2) Tile Factory;
- (3) Biscuits Factory;
- (4) Rejap Mineral Water Factory;
- (5) Equatoria Oil Factory;
- (6) Equatoria Ready-made Clothes Factory;
- (7) The Unity Clothes Factory;
- (8) Unity Bakery;
- (9) Juba Plastic and Rubber Production Factory;
- (10) Mineral Water and Squash Industry; and
- (11) Taher Ready-Made Clothes Factory.

These private sector factories are definitely urban based. The location of the public sector industries depends very much on the source of raw material. Those dependent on agricultural and other primary resources tended to rural location, for example, the cement, kenaf and sugar industries.

Even the government handicraft industry was planned for location in Juba, Malakal and Wau.<sup>6</sup> It was aimed at



encouraging indigenous crafts and skills. It was to help those artisans who have talents but could not afford to buy appropriate tools and raw materials to produce various articles which they could sell to make a decent living or to supplement their incomes. It was planned that three handicrafts centers were to be built in Juba, Malakal and Wau. Tools and raw materials were to be bought by the Regional Ministry of Industry and given to cooperatives or groups of craftsmen such as blacksmiths, carpenters, leather craftsmen, ivory curvers, etc. The Ministry was to recover its loaned money by charging a certain percentage of the profits made by the artisans. The Juba and Malakal centers did not progress beyond the design level as a result of difficulty of suitable locational sites. The construction of the Wau Center was completed in August 1975 but the floods of that year destroyed it and a new center was to be built at a new site.

While the assistance to handicraft activities in the urban centers is not in dispute, the greatest efforts should be directed at encouraging these activities in the rural areas where the majority of these activities are carried out.<sup>7</sup> The employment, output and income effects would be greater. Growth and development of rural cottage and handicraft activities would also contribute to the minimization of the rural-urban migration as well as contribute to minimizing the distribution of development opportunities between urban and rural areas. Furthermore, it would meet urgently felt needs.

The various activities being carried out at the subsistence level, both in the rural and urban areas, include the following:<sup>8</sup>

- (1) Pottery;
- (2) Fibre weaving: making of baskets, mats, ropes, etc.;
- (3) Leather works: handbags, wallets, belts, etc.;
- (4) Carpentry and wood-carving: canoes, and human, animal and birds statues, etc.;
- (5) Iron mongery: spearheads, hoes, axes;
- (6) Home-made yarns and building materials;
- (7) Cheese making;
- (8) Carpet making;
- (9) Musical instruments making; and
- (10) Granary making or weaving.

Other small scale industries located both in rural and urban areas; but basically for commercial purposes include:

- (1) Grinding mills;
- (2) Crop processing such as tobacco curing;
- (3) Tailoring; and
- (4) Repair works especially for bicycles.

### 3. SMALL SCALE INDUSTRIES IN UNDERDEVELOPED COUNTRIES - AN OVERVIEW

This section summarizes many of the characteristics of small scale industries in underdeveloped countries. These features include the magnitude, composition, location, size, ownership, demand and supply factors and policies that have been used to encourage the development of this scale of industry

in these countries. It is hoped that this review of empirical evidence from diverse countries will give some ideas on what role these activities can play in the reconstruction and development of the Southern Sudan; and how their development can be brought about.<sup>9</sup>

The available evidence shows that small scale industry is a significant component of the manufacturing sector in underdeveloped countries. In Table 1 we see that in 13 of the 14 countries small scale firms account for more than 50% of total industrial employment. On the average, 71% of all industrial employment was generated by small enterprises.

Most of the employment was concentrated at the smallest end of the size spectrum. Nearly two-thirds of the manufacturing enterprises in these 14 countries employed fewer than 10 persons. Very few firms employed between 10-49 persons.

The relative importance of small scale enterprises, however, is partly related to the country's overall level of per capita income. Such firms are particularly prominent in lower income countries, playing a relatively smaller role in countries with higher incomes. For example, small scale enterprises accounted for 64% of industrial employment in those countries in the table with lower than \$1,000 per capita income, but generated only 42% of such employment in those countries where per capita income exceeds \$1,000. The implication of the latter finding is important for the role of these enterprises

TABLE 1. DISTRIBUTION OF EMPLOYMENT IN MANUFACTURING BY FIRM SIZE (PERCENTAGES)

Country and Date	Per Capita Income (\$) 1982	Firm Size (Number of Workers)		
		Small Scale Below 10	10-49	Large Scale 50+
India (1971)	260	42	20	38
Tanzania (1967)	280	56	7	37
Ghana (1970)	360	84	1	15
Kenya (1969)	390	49	10	41
Sierra Leone (1974)	390	90	5	5
Indonesia (1977)	580	77	7	16
Zambia (1985)	640	83	1	16
Honduras (1979)	660	68	8	24
Thailand (1978)	790	58	11	31
Philippines (1974)	820	66	5	29
Nigeria (1972)	860	59	26	15
Jamaica (1978)	1,330	35	16	49
Colombia (1973)	1,460	52	13	35
Korea (1975)	1,910	40	7	53

Source: Carl Leidholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p.15.

in the Southern Sudan given the low level of income there and the fact that per capita income in the Southern Sudan is likely to remain low for decades to come.

The contribution of small scale industry to industrial and overall production is also substantial as shown in Table 2.

TABLE 2. CONTRIBUTION OF SMALL SCALE MANUFACTURING TO GROSS DOMESTIC PRODUCT

		Small Scale Manufacturing as a:	
		Percentage of	Percentage of
		total manufac-	total GDP
		turing GDP	
Bangladesh	(1977-78)	50	4.6
Burundi	(1980)	64	8.2
Ghana	(1970)	26	2.9
Pakistan	(1979-80)	30	4.6
Sierra Leone	(1975)	43	2.9
Indonesia	(1974-75)	26	NA
Jamaica	(1978)	22	3.5

NA = Not available

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 17.

From Table 2, it can be seen that small scale firms account for an average of 37% of manufacturing value added. Although the small firms' relative value added contributions were less than their relative employment shares shown in Table 1, their effect on the economy was, nevertheless, still substantial. As

a percentage of total GDP, the contribution of small enterprises ranged from 2.9% to 8.2%.

The available evidence on the composition of employment in small scale manufacturing establishments show that small scale industrial activities tend to be concentrated in the production of light consumer goods. Three two-digit industry groups [food/beverage (31), textile/weaving apparel (32), and wood products (33)] account on average, for over 77% of small enterprises employment in the 10 countries reviewed in Table 3.

Among these groups, clothing (primarily tailoring) predominates in most countries. With the conspicuous exception of Zambia, it accounts for no less than 20% and frequently greater than 50% of all small enterprise employment.

Furniture and wood crafts tend to dominate within the wood category, while baking, beer brewing and agricultural processing are frequently important within the general food group. Other small enterprise activities typically found with regularity are car, electrical and bicycle repair, blacksmithing, and light engineering. In the latter group, bicycle repair and blacksmithing are common in rural areas while the others in the group are basically urban activities.

In a study focusing on Africa, it was observed that clothing production (primarily tailoring) predominates in most countries, ranging from 25% of all establishments in rural Burkina Faso to 52% in Nigeria.<sup>10</sup> Wood production (primarily furniture making) follows, with metal-working (usually blacksmithing),

TABLE 3. COMPOSITION OF EMPLOYMENT IN SMALL SCALE MANUFACTURING ESTABLISHMENTS (PERCENTAGES)

Item	Sierra Leone Entire Country 1975	Nigeria Mid-Western Kwara, Western & Lagos States 1972	Zambia All except Copper-belt Provinces & Lusaka 1985	Egypt Rural governorates 1982	Bangladesh 11 Thanas 1980	India North-eastern States 1971	Thailand Provincial Villages 1980	Philippines Entire Country 1972	Jamaica Entire Country 1979	Honduras 3 Rural Provinces 1980
Food/Beverages (31)	5	5	55	58	25	22	2	8	7	39
Textiles/Wearing Apparel(32)	52	56	5	21	58	42	40	48	30	30
Wood Products(33)	18	11	33	9	13	10	26	6	35	15
Paper Products(34)	-	2	-	*b	*	*	-	-	*	-
Chemical Products(35)	-	-	-	*	1	*	-	-	*	-
Non-metal Products(36)	-	1	2	4	2	12	1	-	1	11
Basic Metals(37)	-	-	-	-	-	*	-	-	-	-
Other Metal Industries (38)	20	15	4	6	2	6	*	16	11	3
Others <sup>c</sup> (39)	5	10	1	2	1	7	31	22	16	2
TOTAL	100	100	100	100	100	100	100	100	100	100

<sup>a</sup>Based on number of enterprises; <sup>b</sup>less than 1%; <sup>c</sup>includes repair activities.

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 19.

food production (primarily baking), and vehicle, shoe, electric, and bicycle repairs also found with some frequency. In the rural areas of several countries, such as Burkina Faso and Botswana, beer brewing is a dominant activity, usually undertaken by women. In general, small-scale firms are involved in the production of light consumer goods--clothing, furniture, simple tools, food and drink.

As regards the size of the small-scale firms, the overwhelming bulk of these firms are extremely small. For example, in five of the countries reviewed in Table 4, over half the small enterprises are one-person firms. Moreover, 85% or more of the firms

TABLE 4. DISTRIBUTION OF SMALL SCALE MANUFACTURING ESTABLISHMENT BY SIZE OF LABOUR FORCE (PERCENTAGES)

Size (Number of Persons)	Bangla- desh 11 Thannas 1980	INDIA		Sierra Leone All 1976	Zambia 1985	Honduras 3 Rural Provinces 1980	Egypt 2 Rural Govern- erates 1982	Jamaica All 1979
		Punjab Rural 1971	Haryana Rural 1971					
1	15	65	57	42	68	60	63	62
2-5	69	32	38	53	30	35	34	32
6-9	12	2	2	4	1	4	2	4
10-50	4	1	3	1	1	1	1	2

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 22.



in all these countries employed fewer than six persons. In most countries, the small number of small firms employing over 6 persons are quite modest. Such findings indicate that most small firms in underdeveloped countries are tiny indeed. Hence, the focus on this scale of firms in the South will not be out of place.

Labour is a major input for small scale enterprises. Table 5 reveals that proprietors and family workers account, on average, for over 50% of small enterprise employment. This figure reflects the predominant role played by the very small enterprises, particularly the one person firm.

The relative significance of apprenticeship labour, on the other hand, varies widely. Apprentices are particularly important in West Africa and Haiti, where they account for a major share of small enterprise employment. Apprenticeship plays a key role in skill formation. This is the case in the Southern Sudan in the case of tailoring and blacksmithing.

Hired workers typically form the smallest segment of small enterprise employment in most underdeveloped countries. These workers are frequently found in the more modern types of enterprises that operate on a somewhat larger scale, such as bricks and tiles, baking, repairs, and metal working. Although the wages paid to hired workers in small manufacturing vary quite widely, their average real wage is often on the order of half that paid to comparable hired workers in large scale enterprises as the government minimum wage regulations usually do not apply to these enterprises. The wage rates in small

TABLE 5: LABOUR FORCE CHARACTERISTICS OF SMALL SCALE MANUFACTURING FIRMS (PERCENTAGES)

Country	Proprietors and Family Workers	Hired Workers	Apprentices
<u>Sierra Leone</u> - Entire Country (1976)	41	17	42
<u>Nigeria</u> Western Region (1970)	39	11	50
Midwest Region (1971)	30	7	63
Lagos (1971)	33	10	57
<u>Ghana</u> Kumasi (1975)	29	6	65
Accra (1972)	39	9	52
<u>Burkina Faso</u> Eastern Ord (1980)	94	2	4
<u>Tanzania: Dar</u> and 20 Townships (1967)	52	41	7
<u>Egypt Fayoum</u> and Kalyubiya Gov. (1981)	64	27	9
<u>Bangladesh</u> 11 Thanas (1980)	71	28	1
<u>Thailand</u> Rural Towns (1980)	39	53	8
<u>Haiti</u> (1979)	34	31	35
<u>Honduras</u> Rural Provinces	63	31	6
<u>Jamaica</u> - Entire Country (1979)	57	32	10

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 24.

scale manufacturing industries largely depend on the performance of the enterprises and personal relationship that exists between the employees and the proprietors.

Own-operators play a key role in small-scale enterprises. For example, in the six countries shown in Table 6, 95% of the small firms were owned by sole proprietors. There are few partnerships, corporations (or limited liability companies), and cooperatives, but almost no small enterprise in the public sector.

TABLE 6. OWNERSHIP OF SMALL SCALE MANUFACTURING ENTERPRISES (PERCENTAGES)

Country	Public	Sole Proprietorship	Partnership	Corporation	Cooperatives	TOTAL	
						All	Female Ownership
Nigeria (3 states)	-	98.0	1.4	0.2	0.4	100	NA
Egypt (2 governrates)	0.1	99.7	-	-	0.1	100	43.0
Bangladesh (11 Thanas)	-	98.7	1.0	0.2	0.1	100	3.3
Thailand Rural Towns	-	80.4	-	3.4	-	100	37.0
Honduras (Rural Provinces)	-	98.7	1.2	0.1	0.3	100	61.0
Jamaica (Entire Country)	-	94.3	4.0	0.7	0.8	100	49.0

NA = not available

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1989), p.30.

The female manufacturing proprietors in Egypt, Honduras, Jamaica and Thailand is exceptionally higher than normal in underdeveloped countries generally. Female proprietors tend to be concentrated in the handicraft, garment and food related industries. Female sole proprietors dominate certain small scale industries in a number of countries in Africa such as beer brewing in Burkina Faso, Botswana, Ghana [and Southern Sudan]; gara dyeing in Sierra Leone, and clothing production in Ghana.<sup>11</sup>

Table 7 gives the evidence from the examination of socio-economic characteristics of the proprietors. These characteristics shed light on the ability of the proprietors to perform their various activities.

The evidence from the five countries studied indicates that the vast majority of proprietors were operating in areas where they were born. Another study reported similar findings on Nigerian entrepreneurs outside Lagos where less than 5% of the entrepreneurs were operating in regions other than that of their birth.<sup>12</sup> Relatively few proprietors were engaged in the same occupations as their fathers, many of whom had been farmers. Indeed, 65% or more of the proprietors in these countries had started their own business. Hence, while the small enterprise proprietors were geographically immobile, they were highly mobile in terms of occupation.

Except for Sierra Leone, the majority of proprietors had some formal education. The percentage of proprietors receiving informal training either on-the-job or through the

TABLE 7. SOCIO ECONOMIC CHARACTERISTICS OF SMALL SCALE MANUFACTURING PROPRIETORS (PERCENTAGES)

Characteristic	Jamaica	Sierra Leone	Honduras	Egypt	Bangladesh
Enterprise operating in area of proprietor's birth	82	-	-	-	92
Occupation same as father	10	-	13	22	45
Father's occupation was farming	64	63	-	26	-
Started own business	86	-	85	-	65
Any formal education	88	23	74	-	59
Formally apprenticed	75	99	26	49	25
Years of experience	13	13	-	23	18
Keeping records	16	18	14	6	6

SOURCE; Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 33.

apprenticeship system varied widely, ranging from 25% in Bangladesh to 99% in Sierra Leone. The high percentage of informal training in Sierra Leone may be compensating for the little percentage of formal education. However, the average proprietor had 13 years or more of experience while relatively few of them kept even a rudimentary set of business records.

A review of the capital stock indicates that the overall initial capital requirements for the small scale industries ranged from \$49 in Sierra Leone to \$1,104 in Jamaica and \$354 in Honduras in the middle.<sup>13</sup> However, these overall figures masked the variations by enterprise type.

Capital has always been given as a major constraint on beginning many forms of economic activities. Table 8 shows the sources of capital for initial investment by small enterprises in five countries.

TABLE 8. SOURCE OF FINANCE FOR INITIAL INVESTMENT BY SMALL ENTERPRISES (PERCENTAGES)

Source	Bangladesh 11 Thanas 1980	Nigeria 3 states 1970	Sierra Leone Entire Country ±1976	Tanzania Rural Towns 1968	Haiti Port-au-Prince 1979
Own Savings	73	94	60	78	72
Relatives	2	4	20	15	9
Banks	**	1	1	1	1
Government	**	**	**	1	**
Money Lenders	1	**	1	**	1
Other*	23	**	18	6	16

\* Includes nonresponses

\*\* Less than 1%

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 39.

It is clear from Table 8 that the overwhelming bulk of the funds for establishing small firms were obtained from either personal savings or from friends or relatives. Hardly any funds were obtained from either the government or from commercial sources. The informal financial market (money lenders) was also a minor source of funds for small scale manufacturing enterprises.

For expansion, the vast majority of the funds were generated from reinvested profits. In Sierra Leone and Bangladesh 89% came from this source while in Haiti, the figure was 81%. The remaining funds were obtained from money lenders, friends or relatives. These results highlight the nascent state of the financial markets in these countries and indicate the limited extent to which small firms were directly reached by formal credit institutions.

#### Demand for Small Scale Enterprises Products

Table 9 shows the relative strengths of the four sources of demand for small scale enterprises activities. Foremost among these is the domestic demand for consumer goods and services stemming from incomes of rural and urban households. The second sources of demand arises from backward and forward production linkages between small enterprises and other nongovernmental producing units of the domestic economy. Government and foreign demands for the products of small scale activities are negligible.

TABLE 9. PERCENTAGE DISTRIBUTION OF SMALL MANUFACTURING ENTERPRISE BY MAJOR BUYERS

Buyer	Percentage Distribution of Enterprises (%)			
	All Jamaica	Rural Honduras	Rural Egypt	Rural Bangladesh
Final Consumer	87	89	81	51
Intermediaries	12	NA <sup>b</sup>	17	49
Government	1	* <sup>c</sup>	*	*
Export	*	NA	2	*

<sup>a</sup>Includes wholesalers, retailers, traders, and industrial/agricultural purchasers of intermediate and capital goods.

<sup>b</sup>Not available

<sup>c</sup>\* = Less than 1%

SOURCE: Carl Liedholm and Donald Mead, Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications, (Michigan State University, East Lansing, 1987), p. 48.

#### Household Demand

The overwhelming bulk of the items produced by small enterprises are light consumer goods and services demanded by rural and urban households. Typically, the household consumer places a specific order for a product or service with the small enterprise; production thus frequently takes on the characteristic of a job-shop operation. Hence, these enterprises are tied to the local market. Although some have argued that these types of product are inferior, the few empirical studies indicate that there is a strong, positive relationship between local



income and demand for small-scale industry products.<sup>14</sup> For example, empirical evidence on Nigeria, Sierra Leone, Malaysia and Bangladesh reveal a strong positive relationship between changes in rural household income and changes in the demand for rural small-scale enterprise goods and services in all four countries. The expenditure elasticities for small scale rural non-farm activities are consistently high, ranging from +1.34 in Nigeria, to +1.40 in Sierra Leone and +2.05 in Malaysia.

However, the results derived for these cross-section expenditure studies may differ somewhat from the expenditure patterns that actually develop over time. To the extent that substitute goods produced by large scale enterprises replace traditional products, the demand for small-scale manufactured goods will fall.<sup>15</sup>

#### Backward and Forward Linkages

Two sectors that have existing or potentially strong linkages with small enterprises are agriculture and large scale industry. As these sectors' output increases, their demand for intermediate and capital inputs can generate a backward linkage to small enterprises; the forward linkages from these sectors relate to the marketing and processing of their output.

The empirical evidence on the linkages between agriculture and small scale enterprises is still sparse. The size of backward production linkages from agriculture to small-scale enterprises is crucially related to the pattern of agricultural growth, which in turn determines the composition of the

agricultural sector's demand for inputs. Johnston and Kilby have argued that the size distribution of farms and the type of agricultural strategy adopted are crucial determinants of the demand for non-agricultural goods.<sup>16</sup> Many of the inputs demanded by larger scale farmers do not originate in the rural economy and are either imported or produced by large scale urban firms. The simple traditional tools, on the other hand, are typically provided by village artisans; and many farming inputs reflecting intermediate technology, such as imported implements, irrigation pumps and motors, and power tillers fabricated in light engineering workshops located in rural towns, are typically produced by small scale enterprises.

Forward linkages from agriculture to small enterprises reflect processing transport and marketing of agricultural activities; such linkages are frequently quite significant. Most input-output studies do not capture the forward linkages to small enterprises. However, Falcon's study of agricultural-industrial interrelationships in Pakistan reveals that crop flows to small scale processing activities are more than five times the flow to large scale processors.

The strength of forward linkages depends crucially on the choice and location of processing technology involved. Although there is some indication that a range or mix of technologies will sometimes be optimal most of the case studies of processing indicate that small scale, rurally-based processing activities generally are economically efficient in underdeveloped

countries. Studies of rice processing in Indonesia and Sierra Leone reveal the significant links between small, rural rice mills and rice production. Similar results for palm oil processing in Nigeria are reported by Miller.<sup>17</sup>

The empirical evidence of the production linkages between small and large scale enterprises is also somewhat sparse. Small scale enterprises are rarely explicitly incorporated into input-output analysis.

The backward linkages from large scale enterprises, where the large firms provide a demand for intermediate or capital goods, are most frequently discussed in terms of subcontracting arrangements. The parent firm, usually a large manufacturer, wholesale or retailer, formally requests another independent enterprise to manufacture or process parts or the whole of the product it sells as its own. The limited evidence indicates that small enterprise sub-contracting is quite prevalent in Asia.

At the other extremes, it appears that in Africa subcontracting and the backward linkages from large to small enterprises are rare.<sup>18</sup> This may be due to the smaller markets as well as to the tendency of foreign-owned import substitution firms, which typically tend to dominate the large scale manufacturing sectors in Africa, to import a large share of their inputs.

Overall, the backward and forward production linkages are strongest in sub-Saharan Africa in the agricultural sector, where the processing of several crops, such as rice and oil palm in West Africa, and the production of implements for traditional

agriculture are frequently undertaken by small-scale firms.

#### Government and Foreign Demand

Governments have not been a major source of demand for small scale enterprise goods and services. For individual firms in specific product lines such as school uniforms, school desks, etc., however, government purchases can loom large.

Several factors contribute to the minor role played by government purchases. Small entrepreneurs complain that tendering and formalities associated with government purchases are unduly arduous and time consuming; they also argue that governments are tardy in settling their accounts. The size and quality of requirements of government orders may also serve to limit the participation of many small enterprises.

The available evidence indicates that exports typically do not provide a major source of demand for small scale enterprises. For particular product groups, however, exports form an important portion of the total market. For example, in Sierra Leone, approximately 20% of the total production of gara-dyed cloth is sold abroad. Baskets are exported from Botswana and Kenya. In Jamaica, virtually all crafts are exported, while in India, handicraft and handloom commodities accounted for 6% of the country's value of exports.

#### Supply Factors

Small scale industries are generally more labour intensive than their large scale counterparts. This is consistently demonstrated in Table 10 except in the case of Thailand where the

medium-scale industry is less labour intensive than the small-scale one.

TABLE 10. SIZE OF ENTERPRISE AND LABOUR INTENSITY (K/L)<sup>a</sup>

Country	Size of Enterprise (Number of Workers)		
	1-10	11-50	50+
	Fixed Capital Per Worker (\$)		
Sierra Leone (1974)	158	225	1,175
Kenya (1960)	772	986	3,108
Ghana (1970)	1,372	3,724 (10-29) <sup>b</sup>	6,468 (100+)
Japan (1966)	934	1,040 (30-49)	4,333 (1,000+)
India (1965)	278 (small)	557 (medium)	2,450 (large)
Korea (1968)	1,096	1,411	1,796
Malaysia (1968)	521	997 (20-29)	2,671 (500+)
Philippines (1970)	1,020 (small)	2,850 (medium)	8,000 (large)
Thailand (1970)	4,280	3,385	6,355
Mexico (1970)	3,700 (small)	9,500 (medium)	14,500 (large)
Columbia	3,000	-	13,400
Honduras	125	250	2,684

<sup>a</sup>Fixed capital per worker (\$)

<sup>b</sup>Numbers in brackets refer to size distribution when they differ from heading.

SOURCE: Enyinna Chuta and Carl Liedholm, Rural Non-Farm Employment: A Review of the State of the Art, (Michigan State University, 1979), p. 18; and Carl Liedholm and Donald Mead, Small-scale Industries in Developing Countries: Empirical Evidence and Policy Implications (Michigan State University, East Lansing, 1987), p. 67.

Since in most underdeveloped countries, capital and foreign exchange are relatively scarce, and labour, particularly unskilled, is relatively abundant, those firms that generate more employment per unit of capital would appear to represent techniques more appropriate to the country's factor endowments.

Furthermore, the evidence available shows that for most of the cases, the small-scale firms generate more output per unit of scarce capital than their large-scale counterparts. Table 11 shows that for Africa capital productivity decrease with increase in the size of enterprise.

An examination of labour intensity and capital productivity for Sierra Leone indicates that the rural activities are generally both more labour intensive and more productive per unit of capital than their larger, often urban-based counterparts in the same industry.

Studies on total factor productivity, as measured by the rate of economic profit or economic rate of return to capital, show that the small-scale firms generate higher economic rates of return to capital than their larger-scale industrial counterparts. Thus, while not conclusive, these findings do indicate that in several lines of activity, small-scale industries are economically efficient.

