

# AFRICAN RURAL ECONOMY PROGRAM

## WORKING PAPER

EMPLOYMENT GROWTH AND CHANGE IN SIERRA  
LEONE SMALL SCALE INDUSTRY:  
1974 - 1980

by

Enyinna Chuta, Carl Liedholm,  
Ola Roberts, and Joseph Tommy

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Department of Agricultural Economics  
Njala University College  
Njala, Sierra Leone

Department of Agricultural Economics  
Michigan State University  
East Lansing, Michigan 48824

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SMALL SCALE INDUSTRY: 1974-1980<sup>†</sup>

by

Enyinna Chuta\*

Carl Liedholm\*\*

Ola Roberts\*\*\*

Joseph Tommy\*\*\*

\*International Labour Office, Geneva, Switzerland

\*\*Michigan State University, East Lansing, Michigan, U.S.A.

\*\*\*Njala University College, University of Sierra Leone, Freetown,  
Sierra Leone

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## FOREWORD

The African Rural Economy Program was established in 1976 as an activity of Michigan State University's Department of Agricultural Economics. The African Rural Economy Program is a successor to the African Rural Employment Research Network which functioned over the 1971-1976 period.

The primary mission of the African Rural Economy Program is to further comparative analysis of the development process in Africa with emphasis on both micro and macro level research on the rural economy. The research program is carried out by faculty and students in the Department of Agricultural Economics in cooperation with researchers in African universities and government agencies. Specific examples of ongoing research are, "Poor Rural Households, Income Distribution and Technical Change in Sierra Leone and Nigeria," "Rural and Urban Small-Scale Industry in West Africa," "Dynamics of Female Participation in the Economic Development Process in West Africa," and "The Economics of Small Farmer Production and Marketing Systems in the Sahelian Zone of West Africa."

Carl K. Eicher  
Professor of Agricultural Economics  
Michigan State University

This paper is one of a series of reports produced by Michigan State University's Off-Farm Employment Project. The project, which is funded by the Office of Rural Development and Development Administration, Development Support Bureau, U.S. Agency for International Development, has the basic purpose of enhancing the ability of AID missions and host country institutions to identify and implement programs and policies that generate off-farm employment and income opportunities benefiting the rural poor. One of the major components of the project is the generation of new knowledge relating to off-farm activities. In collaboration with host country institutions and AID missions, detailed field surveys of small-scale enterprises are currently being conducted in Egypt, Jamaica, Honduras, and Thailand; the results of these studies will be published in this series. A second component of the project involves the marshalling and dissemination of existing knowledge of off-farm activities. A state-of-knowledge paper and special related studies in this area currently available through the Off-Farm Employment Project include:

1. Carl Liedholm, "Research on Employment in the Rural Non-Farm Sector in Africa," African Rural Employment Paper No. 5, 1973.
2. Carl Liedholm and Enyinna Chuta, "The Economics of Rural and Urban Small-Scale Industries in Sierra Leone," African Rural Employment Paper No. 14, 1974.
3. Enyinna Chuta, "The Economics of the Gara (Tie-Dye) Cloth Industry in Sierra Leone," African Rural Economy Working Paper No. 25, 1978.
4. Adewale Mabowonku, "An Economic Evaluation of Apprenticeship Training in Western Nigerian Small-Scale Industry," African Rural Employment Paper No. 17, 1979.

5. Steve Haggblade, J. Defay and Bob Pitman, "Small Manufacturing and Repair Enterprises in Haiti: Survey Results," Michigan State University Rural Development Series, Working Paper No. 4, 1979.

6. Enyinna Chuta and Carl Liedholm, "Rural Non-Farm Employment: A Review of the State-of-the-Art," Michigan State University Rural Development Paper, Paper No. 4, 1979.

7. Omar Davies, Yacob Fisseha and Claremont Kirton, "Small-Scale Enterprises in Jamaica: Initial Survey Results," Michigan State University Rural Development Series, Working Paper No. 8, 1979.

8. Enyinna Chuta, "Techniques of Production, Efficiency and Profitability in the Sierra Leone Clothing Industry," African Rural Employment Paper No. 30, 1980.

9. Middleton Wilson, "Some Problems in Operating a Loan Program for Craft and Emerging Small-Scale Non-Farm Enterprises in Jamaica," Michigan State University Rural Development Series, Working Paper No. 15, 1981.

10. Yacob Fisseha and Omar Davies, "The Small-Scale Manufacturing Enterprises in Jamaica: Socioeconomic Characteristics and Constraints," Michigan State University Rural Development Series, Working Paper No. 16, 1981.

Copies of these papers as well as additional information on the Off-Farm Employment Project can be obtained by writing:

Carl Liedholm  
Off-Farm Employment Project  
Department of Agricultural Economics  
Michigan State University  
East Lansing, Michigan 48824  
U.S.A.

## I. INTRODUCTION

The role of small scale industry in the process of economic development has recently received renewed attention with the growing concern for equity and employment objectives. Unfortunately, there is still relatively little detailed information<sup>1</sup> on small scale industries in developing countries and consequently many gaps still remain in our knowledge of this sector.

One of the most significant of these gaps relates to the growth aspect of these activities. Most of the existing studies, of necessity, have been undertaken at a single point in time, and thus, have offered only limited prospects on the issues relating to growth and change. Recently, there have been a few attempts made to assemble aggregate time series data on small enterprises from official sources.<sup>2</sup> However, such data have limitations with respect to coverage and do not enable one to focus effectively on the growth issues at the individual firm level. Yet, growth information is crucial to those charged with formulating and executing small scale industry programs and policies.

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<sup>1</sup>For a review of existing studies, see World Bank: Rural Enterprise and Nonfarm Employment, a World Bank Paper, Washington, D.C., January 1978; idem: Employment and Development in Small Enterprises, (Washington, D.C., February 1978); Enyinna Chuta and Carl Liedholm: Rural Non-Farm Employment: A Review of the State-of-the-Art, MSU Rural Development Paper No. 4 (East Lansing, Michigan State University, 1979); and ILO: Rural Small-Scale Industries and Employment in Sri Lanka, Parts I and II (Geneva, October 1978).

<sup>2</sup>For example, see Samuel P. S. Ho: Small Scale Industries in Two Rapidly Growing Less Developed Countries: Korea and Taiwan, a paper prepared for the World Bank (Washington, D.C., December 1979); A. Nag: "Small Industries: Aspects of their Mortality," in Economic Times (Delhi), 6 October 1979; and Albert Berry and Armando Pinell-Siles: Small-Scale Enterprises in Colombia: A Case Study, Studies in Employment and Rural Development, No. 56, Washington, D.C. (World Bank, July 1979).

This paper represents a first step in filling this gap by reporting the results of an analysis of our 1974 and 1980 surveys of small scale industries in Sierra Leone. Since similar methodologies were used in the two surveys (see Appendix), we were able to examine on a comparative static basis the growth and change in these activities over a six year period as well as trace over time a panel of our 1974 respondents. The street-by-street census undertaken in both rural and urban areas assured that even the smallest enterprises were counted.

The first section of the paper reports on the aggregate growth of employment and number of small scale enterprises followed by an examination of changes in the sectoral composition of these activities. In section 2.3, we examine entry and closure rates at the individual firm level. Next, there are analyses of patterns of change and reinvestment. The final section presents the conclusions and examines some of the program and policy implications of our findings.

## II. AGGREGATE ENTERPRISE AND EMPLOYMENT GROWTH

Employment in the small scale manufacturing industries increased in Sierra Leone during the six-year period. As Table 1 reveals, the magnitude of this increase, however, varied importantly by locality size. In the larger urban localities, which would include Freetown as well as those localities with 20,000 to 250,000 inhabitants, the annual rate of manufacturing employment increase was approximately 6 percent. In the smaller rural localities with populations from 2,000 - 20,000 on the other hand, the annual increase was less than half as much, 2.4 percent. The increase was apparently even smaller in the rural villages with populations below 2,000 inhabitants. Unfortunately, the larger growth variations from village to village and the small sample size make it impossible to provide a precise manufacturing employment growth rate for these smallest rural localities.<sup>3</sup>

The annual growth in the number of manufacturing establishments, however, did not keep pace with employment growth. In the larger urban localities (with over 20,000 inhabitants), for example, the number of manufacturing establishments grew at a rate of approximately 4 percent per year;<sup>4</sup> in those

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<sup>3</sup>In half the villages, for example, manufacturing employment increased while in the other half, employment decreased. Depending on the aggregation procedure used, the rate of change of manufacturing employment ranged somewhere between plus one percent and minus one percent.

<sup>4</sup>How do these aggregate employment and enterprise growth rates in Sierra Leone compare with those in other countries? Unfortunately, such dynamic data are generally available for only a few countries. In the Philippines, Anderson (1980) reports that between 1967 and 1975 employment in household and small scale manufacturing establishments with fewer than 10 workers increased at an annual rate of 1.9 percent. The growth of employment for the less than 10 employee enterprises was found to be greater than that of the larger enterprises. Moreover, as in Sierra Leone, the increase in urban manufacturing employment exceeded that in (footnote continues on next page)

Table 1

Compound Annual Growth Rates in Employment and Number of Enterprises  
In Small-Scale Manufacturing By Locality In Sierra Leone, 1974-80

Activity	Localities over 250,000 Freetown Central Constituency			Localities 20,000-250,000 Makeni, Bo, Kenema			Localities 2,000-20,000 Portloko Matru, Segbwema		
	Percent of Total Employment 1980	Growth Rate		Percent of Total Employment 1980	Growth Rate		Percent of Total Employment 1980	Growth Rate	
		Establish- ments	Employment		Establish- ments	Employment		Establish- ments	Employment
FOOD	2%	-4.9%	21%	13%	49%	33%	21%	6.7%	14%
Bakery	(2)	(0)	(32)	(5)	(23)	(14)	(10)	(4.4)	(3.4)
Other	(*)	(*)	(*)	(8)	(**)	(**)	(11)	(15)	(39)
WEARING APPAREL	64	2.4	5.0	43	-0.6	1.8	42	-4.9	-0.7
Tailoring	(60)	(2.0)	(4.9)	(38)	(-0.3)	(3.8)	(37)	(-4.1)	(0)
Gara Dyeing	(*)	(*)	(*)	(3)	(-7.5)	(-8.5)	(3)	(-7.2)	(-3)
Shoemaking	(3)	(9.5)	(6.2)	(2)	(13)	(16)	(2)	(-8.8)	(-4.3)
Other	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
WOODWORK	11	4.4	7.6	20	6.4	8.8	24	-3.7	0.5
Carpentry	(8)	(1.1)	(3.6)	(19)	(8.7)	(8.6)	(22)	(-4.0)	(-0.6)
Carving	(3)	(15)	(24)	(*)	(*)	(*)	(*)	(**)	(**)
Other	(0)	(0)	(0)	(*)	(*)	(*)	(2)	(**)	(**)
METAL WORK	4	9.4	10.0	4	4.6	9.4	4	-1.9	-5.8
Blacksmithing	(1)	(13)	(22)	(1)	(10.9)	(1.8)	(3)	(-5.6)	(-5.5)
Goldsmith	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
Welding/Metal	(2)	(7)	(6.6)	(2)	(7.8)	(23)	(*)	(0)	(0)
Other	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
REPAIRS	18	8.1	15	17	14	5.2	9	14	15
Watch	(6)	(7)	(13)	(*)	(*)	(*)	(*)	(*)	(*)
Radio	(*)	(*)	(*)	(2)	(11)	(19)	(2)	(17)	(22)
Motor Vehicle	(11)	(14)	(20)	(13)	(17)	(2.4)	(7)	(20)	(17)
Other	(*)	(*)	(*)	(*)	(*)	(*)	(0)	(0)	(0)
OTHER MANUFACTURING	*	*	*	2	2.8	7.2	*	*	*
TOTAL	100%	3.7%	5.7%	100%	4.3%	6.0%	100%	-2.8%	2.4%

\*means that the value is greater than zero but less than 1% of total employment in 1980.

\*\*means that the value for 1974 was zero.

Source: Survey Data

rural localities with less than 20,000 inhabitants, the aggregate number of small manufacturing establishments may have actually declined.

Two important questions emerge from these initial results of the survey data. First, what could account for the rates of increase in employment, number of establishments and firm size between 1974 and 1980? Second, what could account for the differential rates of increase between different size localities?

With respect to the increases in employment and number of firms in the small-scale industrial subsector of Sierra Leone, government policies and promotional efforts cannot be posed as explanatory factors. Government industrial policies are still characterized by fiscal and monetary policies which favor the modern urban sector of the Sierra Leone economy.<sup>5</sup> The overall performance of the economy also could not be considered as a major positive factor.<sup>6</sup> From 1974 to 1980, the Sierra Leone economy as a whole stagnated with the GNP increasing at a real annual rate of 0.4 percent. Indeed, given the rapid decline of employment in the mining sector and the sluggish employment growth trends in the large-scale manufacturing

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rural manufacturing. Between 1960 and 1975, for example, household and small-scale manufacturing (below 10 workers) in Manila and Rizal increased at a 6.6 percent annual rate, while elsewhere the annual rate was only 1.6 percent. See Dennis Anderson, Small Scale Enterprises and Development Policy in the Philippines: A Case Study, a World Bank Staff Paper (Washington, D.C., 1980). In Lome, Togo, the number of manufacturing establishments was estimated to grow at 5 percent per year. See Georges Nihan et al., "The Modern Informal Sector in Lome," in International Labour Review, vol. 118, No. 5, September - October 1979.

<sup>5</sup>See Franklyn Lisk and Rolph Van Der Hoeven: "Measurement and Interpretation of Poverty in Sierra Leone," in International Labour Review, vol. 118, No. 6, November - December 1979, p. 727.

<sup>6</sup>Government of Sierra Leone, National Accounts of Sierra Leone, (Freetown, Central Office of Statistics, 1979).

sector, the small-scale sector which has little or no entry barriers may have become the "main bulwark" against open unemployment at least in urban areas.<sup>7</sup>

What could account for the differential rates of increase in employment and number of firms between different locality sizes? It is possible that the highly uneven income distribution in Sierra Leone which favors the urban centers, creates a substantial purchasing power in the urban areas, and thus encourages the establishment of different types of small enterprises in such large urban locations. It has been estimated<sup>8</sup> that urban areas which support only about one-sixth of the total Sierra Leone population, accounted for about 40 percent of total income in 1975/76. Moreover, results from our studies of Sierra Leone expenditure patterns indicate that income elasticity of demand for small industry products in Sierra Leone is strongly positive. Consequently, increases in income would generate an increased demand for small scale industry products.<sup>9</sup>

Although our results indicate that the average size of the small-scale manufacturing enterprise in Sierra Leone was increasing in all locality sizes,<sup>10</sup> the changes in the relative importance of the various enterprise size classifications are also noteworthy. Table 2 reveals that first, in

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<sup>7</sup>See International Labour Office, Ensuring Equitable Growth. A Strategy for Increasing Employment, Equity and Basic Needs Satisfaction in Sierra Leone, (Addis Ababa, Jobs and Skills Programme for Africa, 1978), pp. 19 and 118.

<sup>8</sup>See Lisk and Rolph Van Der Hoeven, op. cit., p. 727.

<sup>9</sup>Carl Liedholm and Enyinna Chuta: The Economics of Rural and Urban Small Scale Industries in Sierra Leone, African Rural Economy Paper No. 14 (East Lansing, Michigan State University, 1976).

<sup>10</sup>In Freetown, for example, the "average" size small enterprise increased from 3.2 to 3.8 individuals per firm, while in the smallest rural villages the size of the average firm increased from 1.9 to 2.2.

all size localities, the percentage share of one person enterprises declined drastically over the six-year period. This may reflect the lack of competitiveness for the one person enterprises within the sector. Poor business motivation, management inability, very low turnover of output and lack of skill are possible factors contributing to such lack of competitiveness. Second, the percentage shares in the number of firms employing 2 - 5, 6 - 9, and 10 or more, increased in localities of all sizes. However, it is important to note that the bulk of small enterprises is found in the second category of size groups -- firms employing 2 - 5 workers. The lowest share observed for this group is 52.8 percent for Freetown in 1974 while the highest share observed is 66.8 percent for the small rural towns in 1980. Finally, the least important in terms of share of total number of firms is the size group employing 10 or more workers. In this size group, problems of management and coordination of production activities may constitute an obstacle to stability and continued growth.<sup>11</sup>

### 2.1. Sectoral Employment Growth Patterns

There were important variations in the employment growth rates of the individual industries. These are portrayed in Table 1. In all locality sizes, the most rapidly increasing industries in terms of employment were food-related activities. Baking was growing everywhere at a particularly rapid rate, along with small-scale rice, palm oil, and coffee processing. Repair activity, particularly motor vehicle repair, was also rapidly growing as was woodworking employment. Wearing apparel, especially weaving and shoe repairing, was generally the least rapidly growing activity in all locality

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<sup>11</sup>Peter Kilby, African Enterprise: The Nigerian Bread Industry, (California, Stanford University, 1965).

Table 2

## Percentage of Firms in Various Size Classifications by Locality

Firm Size	Locality Size (Population)					
	Localities over 250,000		20,000 - 250,000		2,000 - 20,000	
	1974	1980	1974	1980	1974	1980
One worker	30.6	26.7	33.0	20.8	42.0	24.9
2-5 workers	52.8	53.9	59.0	61.3	53.0	66.8
6-9 workers	13.0	15.6	6.0	13.5	4.0	6.2
10 or more	3.4	3.9	2.0	4.3	1.0	2.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Survey Data

sizes, although its growth was positive in the larger localities. The performance of the other sectors varied importantly by locality size. Metal working, particularly welding, was increasing rapidly in the larger localities, but was declining in the smaller localities.

One has to be cautious, however, while interpreting the extraordinary growth rate observed in the bakery industry. During the months of March to August (hunger season) in Sierra Leone, rice is being planted and not yet harvested. So, bread is often regarded as a substitute for rice and bread output increases throughout the period.<sup>12</sup> Experience gained while conducting field surveys in Sierra Leone in 1974-75 revealed that as soon as rice harvests began, the numerous traditional bakeries ceased to operate. Some change their line of activity and others leave the immediate vicinity entirely. It is possible therefore that the observed high growth rate for rural bakeries is merely a transitory, seasonal phenomenon.

The differential high growth rates in sectors such as metal work in urban areas is something expected. Increasing growth of housing, construction activities such as ultra-modern hotel buildings, offices and private houses, going on in Freetown and other urban centers create the demand for the products of the metal workshops. It is therefore not a surprise that these activities fare somewhat better in urban than in rural areas. On the other hand, the declining trends observed in activities such as weaving (included in "other wearing apparel" in Table 1) and shoe repair are equally expected. "Country cloth," as the product of weavers is called in Sierra Leone, is produced by a limited number of aged weavers who utilize locally spun cotton thread and dye stuff obtained from local sources. Such products are usually

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<sup>12</sup>See Enyinna Chuta: Choice of Appropriate Technique in the African Bread Industry with Special Reference to Sierra Leone, World Employment Programme Research, WEP 2-22/WP 77, Geneva, ILO, January 1981, pp. 12-16.

purchased by few foreigners solely for their artistic as opposed to their utilitarian value. Even on utilitarian grounds, country cloth has not been able to withstand the competition of imported fabrics which lend themselves to a variety of uses. In short, the weaving industry has been declining.

## 2.2. Entry and Closure Rates

The rates of increase in the number of enterprises, are, in reality, net data that reflect the balance of new enterprises entering and old firms closing. Unfortunately, data on small enterprise entry and closing rates in developing countries are at best scarce. In an attempt to shed light in this area, such information was collected during the Sierra Leone survey.

To ascertain the closure rate, a sample of 60 small enterprises in three localities enumerated in the 1974 survey were re-visited by enumerators in 1980 to see if they were still operating at their same locations. In Freetown, 57 percent of our 30 sample enterprises had disappeared over the six year period, while in the two smaller localities with from 2,000 - 20,000 inhabitants, a somewhat larger percentage, 66 percent, had disappeared. On an annual basis, Freetown's closure rate was 9.5 percent while for the other localities size it was 11.1 percent.<sup>13</sup> These enterprises did not necessarily permanently close, however, since they may have changed location or changed

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<sup>13</sup>These findings are not inconsistent with those reported for the Philippines and Colombia. In the Philippines it was estimated that the annual "closure" rates for small enterprises ranged from 3.5 to 9 percent, while in Colombia the annual closure rate was estimated at 9 percent. The two studies also indicated that the closure rates of smaller enterprises exceed those of the larger ones. Both estimates however, were derived through crude approximations and did not include the very small enterprises. See Dennis Anderson, op. cit., p. 9, and Berry and Pinel-Siles, op. cit.

into other lines of activity. Indeed, data from the survey indicated that approximately 2 percent of the businesses changed location in the same locality each year. Anecdotal information and entrepreneurial histories also revealed that changing occupations or activities is not uncommon. For example, in one of our survey locations, three out of the thirty firms studied in 1974 changed their occupations. Out of these three, one, a tailor, had started illicit diamond mining, a photographer had begun selling rice-milling machines while a traditional baker had taken to trading in 1980. As we expected, these proprietors cited better financial gain as the main reason for changing their activity. In the same locality, also, four proprietors were reported to have gone to unknown places while one tailor was reported to have gone back to his village. In another locality where the craft of tie-dyeing was dominated by women, our survey revealed that the closure rate was highest for this particular industry. Five out of eight tie-dye proprietors who were included in our 1974 sample of thirty small-scale entrepreneurs for that locality had stopped operating mostly due to lack of working capital to purchase fabric and dyestuffs. In general, the non-financial reasons cited for the permanent closure of firms included such factors as death, illness, or retirement.

Entry data on new enterprises were obtained in the Sierra Leone survey for the larger localities. Using age-profiles from the total sample of enterprises enumerated in 1980, it was determined that in the two largest locality groups, the annual rate of entry was approximately 11 percent from 1975 until 1980. The annual entry rate was lower in the smaller localities; it was 9.5 percent in the localities in the 2,000 - 20,000 size range and 6.5 percent in the rural villages.

One of the interesting findings from the entry data is that about 35 percent of the sample firms (of 307)<sup>14</sup> were less than 3 years old, while the number of firms in the older age cohorts progressively declined. For example, only about 4 percent of the sample firms were 15 years old while only one percent were 30 years old. Such information, when combined with the closure rate data, provides an indication that the turnover of small enterprises is substantial particularly within the first two or three years.

### 2.3. Patterns of Change

In addition to examining the process of growth and attrition of small-scale enterprises, the nature and extent of any changes made by these enterprises during this period were also ascertained. Specifically, an attempt was made to investigate whether or not Sierra Leone entrepreneurs introduced new goods or new qualities of goods, introduced new methods of production, changed the nature of their workshop, purchased new kinds of machines and ploughed back their accumulated profits in businesses. Based on a systematic sampling of every fifth manufacturing enterprise being listed during the survey, a sample size of 307 respondents was obtained. About 42 percent of this sample were at least 5 years old. The general response of these 128 respondents with respect to certain changes that were introduced in their establishment is presented in Table 3.

Overall, our results, as shown in Table 3, reveal that about 50 percent of small-scale entrepreneurs in Sierra Leone initiated at least one kind of

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<sup>14</sup>On the basis of the total listing of enterprises in each sample locality, a systematic sample of every fifth firm (giving a total subsample of 307) was selected for more detailed questioning. See the Appendix.

Table 3

Entrepreneurial Behavior of Small Scale Enterprises of at Least  
Five Years Standing in Sierra Leone  
1980

Type of Innovative Behavior	Positive Response* %
1. Differentiated your goods and services?	47.6
2. Started making entirely new products?	38.5
3. Changed the nature of the workshop?	34.5
4. Bought new machines?	22.5

Source: 1980 Survey

\*The sum of the percentages exceed 100 because each of the respondents had the opportunity to give more than one positive response.

change during the last five years. It would thus be wrong to characterize the existing enterprises as being stagnant. What is particularly striking, however, is that product changes were more prevalent than machine or equipment changes. For example, Table 3 reveals that about 39 percent of our sample entrepreneurs who were in business at least 5 years indicated that they had started making new products. Thus, a carpenter would start making cupboards in addition to tables and chairs or a baker would add cake to his existing line of production. Further, about 48 percent indicated that they had further differentiated their existing line of goods and services. Such acts of differentiation included labeling of clothes and sewing new styles or wrapping of bread with different kinds of materials. The survey data revealed also that about 35 percent of the entrepreneurs effected changes in their workshops, mostly by remodeling the existing structures. Finally, only about 23 percent bought new machines. These entrepreneurs cited other producers as the most important source of information on these new machines. Only 10 percent of these entrepreneurs knew about the machines they bought by reading.

Although machine and equipment changes were relatively unimportant, the nature of this alteration was striking in some cases. The bakery industry changes, in particular, were quite noteworthy. Several bakers, for example, have reverted to the use of traditional or intermediate methods rather than continue to use or purchase more modern equipment. One baker in Freetown has built a brick oven which is now being used, instead of his now closed electric oven. Another baker has converted his electric oven into wood-firing by installing a fire-box at the rear end and distributing heat in the baking chamber by means of water tubes. Finally, in Bo, a baker who had planned to purchase modern bakery equipment in 1975

was found to be still using his wood-fired oven. He had discovered that high energy costs had rendered the use of modern equipment financially unprofitable. Indeed, our recent survey in Sierra Leone revealed that the cost of energy per 100 pound bag of wheat flour converted in a modern oil-fired or electric bakery oven is three times the cost of baking in a wood-fired oven.<sup>15</sup> It is thus clear that at least in the bread industry, the trend has been a movement towards the use of improved traditional methods, rather than the undertaking of new investment in modern equipment.

The results of our survey also indicated that these changes tended to be concentrated in certain types of industries. Industries, where these changes occurred most frequently include tailoring, carpentry, gara tie-dyeing bakery and blacksmithery. On the other hand, in some product categories such as pottery, tinsmithery, goldsmithery and watch repair, virtually no alterations seemed to have taken place. This is equally true of rice processing.

#### 2.4. Patterns of Reinvestment

Our survey data reveals that during the last five years, the average firm reinvested an average of Leones 284.3<sup>16</sup>, i.e., an annual rate of profit reinvestment of Leones 47 per firm.<sup>17</sup> When asked to explain the nature of the reinvestment, 47 percent of our subsample responded that they had ploughed back their profits in the purchase of tools and equipment, 47 percent had used it in working capital for their enterprises, while

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<sup>15</sup>For more details, see Chuta, op. cit.

<sup>16</sup>Ten firms which said that they had reinvested some of their profits could not remember the exact amount; 67 of the 128 sampled firms did reinvest.

<sup>17</sup>At the time of the survey in April 1980, U.S.\$1.00 = Leone 1.05.

13.2 percent had reinvested in other forms of economically related activity of the enterprise.<sup>18</sup> It is therefore clear that the bulk of our sample respondents ploughed back their profits in the provision of tools, equipment and raw materials.

It is nevertheless important to ascertain if the observed pattern of reinvestment is consistent with the level of economic profitability among small-scale enterprises in Sierra Leone. For this purpose, we shall further examine the tailoring and carpentry industries where at least ten respondents gave information. In these two industries, the nominal mean values reinvested over the last 5 years were Leones 150.7 and Leones 125.4 respectively, which in turn give nominal annual rates of reinvestment of approximately Leone 30 and Leone 25 respectively. If we can assume that the mean values of capital stock in these two industries have remained constant at Leones 526 and Leones 497 respectively<sup>19</sup> since 1975, then the nominal annual rates<sup>20</sup> of reinvestment as a percentage of mean capital stock becomes 5.2 percent for tailoring and 4.5 percent for carpentry. In real terms, these rates become 2.8 percent and 2.5 percent respectively.<sup>21</sup> In 1974/75 economic rates of return of capital

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<sup>18</sup>Total percent should exceed 100 since respondents could tick or check more than one item.

<sup>19</sup>See Liedholm and Chuta, *op. cit.*, p. 32.

<sup>20</sup>These compound rates can be easily verified by using the following equation:  $K_{79} = K_{75}(1 + r)^5$  where: K=capital stock; r=rate of reinvestment.

<sup>21</sup>In order to compute the real rate of reinvestment, we deflated the nominal five year reinvestments by 191 which is the 1977 consumer price index and the average CPI between 1975 and 1979. See United Nations, 1978 Statistical Yearbook (New York, 1979), p. 695. The consumer price index is the only price index available in Sierra Leone. Also there are two CIPs in Sierra Leone, one for Freetown, the other for the mining areas in the Eastern province. We have used the Freetown CPI in this study. See IMF: Surveys of African Economies, Vol. 6 (Washington, D.C., 1975), pp. 410-412.

stock for tailoring and carpentry turn out to be at least 23 percent and 21 percent respectively.<sup>22</sup>

Empirical studies of the savings propensities of small enterprises have revealed that the percentage of total profits which the small-scale enterprises are capable of saving or willing to save could be in the magnitudes of one-half to two thirds.<sup>23</sup> If it can be assumed that the reinvested profits can serve as a proxy for business savings, then our sample tailors and carpenters reinvested only 12.17 and 11.90 percent respectively of their accumulated profits (in real terms), figures markedly below those reported for other countries. Although data on the disposition of profits were not collected, it is possible that some of the extra profits not reinvested could have been channeled into private consumption, into the education of family members or into other ventures.

#### 2.5. Program and Policy Implications

One of the significant implications of our analysis is that even in spite of the absence of favorable economic policies and promotional efforts, small-scale industries have continued to play an important role in absorbing a substantial part of the pool of unemployed. The Government has continued to offer substantial monetary and fiscal subsidies and tax concessions to large-scale firms and thus, in effect, has penalized the smaller firms and made it relatively more difficult for them to compete effectively. For example, tax concessions enable the large firms to reduce or waive the import duty on their raw materials for a specific period. By not permitting the

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<sup>22</sup>See Liedholm and Chuta, op. cit., p. 94.

<sup>23</sup>See Gustav Ranis: Industrial Efficiency and Economic Growth: Case Study of Karachi (Karachi Institute of Development Studies, 1961).

smaller firms to qualify for similar privileges, the smaller firms face higher relative prices for their raw materials and thus, are correspondingly accorded a smaller amount of effective tariff protection than were the large firms. If policy measures are structured to eliminate the existing constraints (such as lack of working capital, infrastructural facilities and adequate purchasing power, and high intermediate input costs), in urban as well as rural areas, even larger gains in employment and output might be achieved.

Some of the most important policy changes that can affect the viability of the small-scale enterprises lie outside the industrial sector. Changes in agricultural policies designed to increase rural incomes can, for example, have positive impact on rural areas of Sierra Leone. It may be recalled that indeed a previous Sierra Leone<sup>24</sup> study had demonstrated that a 10 percent increase in agricultural incomes generates a 16 percent increase in the demand for the small scale industry products in rural towns in Sierra Leone. Moreover, policies and programs designed to benefit a larger number of small low-income farmers are likely to generate a larger demand than those designed to have impact on a limited number of large-scale capital-intensive farmers. Increases in demand for the products of small scale industry could serve as incentive for small entrepreneurs to plough back more of their profits, thus creating more output and employment in Sierra Leone.

In addition, policy measures may be needed to facilitate the process of change among these enterprises. Since the study indicates that they adopt changes mostly by imitating other producers, measures which encourage

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<sup>24</sup>Robert P. King and Derek Byerlee: "Factor Intensities and Locational Linkage of Rural Consumption Patterns in Sierra Leone," in American Journal of Agricultural Economics, Vol. 60, 1978, pp. 197-206.

the proximity of producers in any one industry may be advantageous.<sup>25</sup>

While the Government has decided to establish near Freetown an industrial estate in which subsidized facilities are to be made available to large scale establishments, no such arrangements are being contemplated to promote small-scale industry. Therefore, policies or projects which create artisan clusters, centers or zones, even without subsidized facilities, could facilitate the transmission of technological information among small-scale enterprises. Moreover, the cost of providing information and technical assistance would be reduced in this case. Finally, policy measures may be needed to introduce other ways of diffusing the array of possible product and technical change. Since very few of the entrepreneurs knew about the machines they bought by reading, for example, it may be important to update literacy standards and improve access to information sources.

Another result of our survey is that it pinpoints the differential growth rates among small scale enterprises. Such information can assist project designers in identifying the growing areas of the subsector for promotion.

In addition, since our survey data reveal high rates of business failures within the two or three years of a firm's existence, project designers must be more cautious in selecting firms for long term financial commitment. They might want to select, for example, only those firms that have been in existence for two years or more. However, since the pitfalls of learning

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<sup>25</sup>Ian Livingstone points out the demonstration effect on the supply of effort by workshop cluster tenants who worked in close proximity in Tanzania. See Ian Livingstone: Alternative Approaches to Small Industry Promotion: Tanzania, Kenya and Botswana, Discussion Paper No. 62 (University of East Anglia, School of Development Studies, 1980).

are at a maximum during the first few years of a firm's life, project designers might consider minimizing the firms' financial burden at that time. For example, if loans are being provided grace periods of two to three years might be appropriate, thus removing the repayment burden at this critical time.

Finally, our findings indicate that in some cases, adjustment assistance may be needed to enable those firms that previously invested in modern capital-intensive technology, to revert to the use of more appropriate labor-intensive techniques. Such adjustment assistance could be of a financial and technical nature.

## APPENDIX: 1980 SURVEY METHODOLOGY

Following the procedure of street-by-street enumeration of small-scale enterprises utilized in Sierra Leone in 1974<sup>1</sup>, a stratified sampling procedure based on locality size was adopted during the 1980 survey. Thus a total establishment enumeration was undertaken in the central constituency of Freetown with a population over 250,000. Three cities -- Bo, Makeni and Kenema, with population of between 20,000 and 250,000 were totally enumerated. A total establishment count was undertaken in Mattru, Portloko and Segbwema which fall into the third stratum of cities with a population range of 2,000 - 5,000. Finally, it was necessary to obtain some estimate of the number of industrial establishments in the smallest census units -- the enumeration area villages. Such villages include Bomabali, Mateti, Tikonko, Taninahun, Kpandebu and Lalehu. As the following Table shows, those 1980 survey localities were also enumerated in 1974 and they fitted into the provincial set-up in Sierra Leone namely Western Area, Northern, Southern and Eastern Provinces.

The entire survey lasted four weeks. In each of the localities and enumeration area villages, the enumerators obtained information on the type of industrial activity, the number of workers (including proprietors, hired apprentices and children) the type of workshop (temporary, permanent, etc.) the number and kind of machines used (whether power driven or manually operated). While establishments were being listed in each locality, every

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<sup>1</sup>For more details, see Enyinna Chuta and Carl Liedholm: The Role of Small Scale Industry in Employment Generation and Rural Development: Initial Research Results from Sierra Leone, African Rural Employment Paper No. 11 (East Lansing, Michigan State University, 1975), pp. 10-12. It needs mentioning that the 1974 survey localities and enterprises were selected randomly.

fifth enterprise was systematically selected for administering a second questionnaire. The content of this latter instrument focused on ascertaining what changes had taken place with respect to each enterprise's workshop lay-out, method of producing goods and services and product types and profit reinvestments since the past five years. Both questionnaires were precoded and pretested before being utilized for the actual survey.

Finally, on the basis of the sample frame that was assembled in 1974, an attempt was made to locate in 1980 some firms from whom we collected input-output data over a period of one-year, 1974/75. The idea was to ascertain and explain rates of attrition among small enterprises in Sierra Leone. Therefore, in cases where the firms were not located, an attempt was made to ascertain whether the firm closed down, moved to a different part of the city or to an entirely different city, etc.

## 1980 and 1974 Survey Localities by Population Size

Geographical Area	Localities over 250,000	Localities 20,000-250,000	Localities 2,000-20,000	Localities less than 2,000
<u>1980:</u> Western Area	Freetown (central constituency)	---	---	Six villages* consisting of: Bombali, Mateti, Tikonko Taninahun, Kpandebu, Lalehun
Northern Province		Makeni	Portloko	
Southern Province		Bo	Mattru	
Eastern Province		Kenema	Segbwema	
<u>1974:</u>	All Freetown	Makeni, Bo Kenema, and Koidu	21 including Portloko, Mattru, and Segbwema	24

\*These are actually single enumeration area villages. In 1974 entire 24 enumeration areas were enumerated, each of these enumeration areas in Sierra Leone contained an average of ten villages.