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RURAL SMALL-SCALE INDUSTRIES IN GHANA'S ECONOMIC DEVELOPMENT: AN AGENDA FOR RESEARCH

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GLOSSARY

AI - Artisan industry
BIRD - Bureau of Integrated Rural Development (of the UST)
CI - Craft industry
COCOBOD - Ghana Cocoa Marketing Board
DPPC - Development and Project Planning Centre (of the University of Bradford)
EDP - Entrepreneurship Development Programme (of the BSSI)
GEDC - Ghana Enterprises Development Commission
GIHOC - Ghana Industrial Holding Corporation
GRATIS - Ghana Regional Appropriate Technology Industrial Services
GSS - Ghana Statistical Service
ITTU - Intermediate Technology Transfer Unit
NBSSI - National Board for Small Scale Industries
PI - Processing undustry
RSSI - Rural Small-Scale Industries
SSI - Small-Scale Industries
TCC - Technology Consultancy Centre (of the UST)
UST - University of Science and Technology, Ghana

1. Introduction

The intention of this discussion paper is that it should provide a background for a proposed research programme on Ghana's rural small-scale industrial sector. The definition of "industrial" in this context relates to the processing of raw materials into a product which is commercially marketed (i.e. not produced for self-consumption). By "rural" we understand that the small-scale industry is located outside settlements with more than 5000 inhabitants at the time of the 1984 population census. The term "small-scale" refers to units with 9 or fewer workers (although this definition will be subject to major qualification later in the paper - see below section 4-4).

The form that the paper takes reflects the fact that it is anticipated that a programme of primary data collection and analysis will follow within the next two years. For the present, therefore, the discussion will revolve around the characteristics of the rural small-scale industrial sector in Ghana, and the issues that the proposed research is intended to address.

The paper starts with the historical context of rural small-scale industries (RSSI) in Ghana, with a discussion of definitions and characteristics as well as of their economic significance. A brief indication of the supporting institutional structure and of training programmes completes section 2. The following section consists of an outline of the proposed research. Section 4 sets out four areas which are intended to be a particular focus of detailed analysis in the research programme. The paper is completed by some concluding remarks (with glossary and a full bibliography).

2. Rural Small-Scale Industries in Ghana's Economic Development

The rural small-scale industrial sector (RSSI) in Ghana has a long tradition. Ghanaian artifacts are known world-wide for their splendour. Kente cloth (woven on traditional handlooms) and wood carvings are perhaps the best known. Probably the oldest of the small-scale industrial activities are crafts related to mankind's basic needs. Throughout the ages the human being's distinguishing characteristic is that of being a producer of things to meet these needs:-cooking vessels, pots, containers, clothes, furniture, floor-coverings and so on. The articles made by family craftsmen were to meet the domestic, religious and cultural needs of their immediate family members. As production became more specialised crafts were refined and they were produced to meet an increased demand for marketed consumer goods as well as to serve as collectors items for the wealthy in society. The best craftsmen, such as potters, weavers, goldsmiths and carvers were often selected by their chiefs to produce only for the royal family. Additionally, crafts are handed down from one generation to the next from parents to children as family heirlooms. In ages past particular families have been associated with particular crafts. In Ghana, as in other countries, particular craft industries are

associated with particular localities. Ashanti Region has Kente-weaving and Wood-carving, Eastern Region has Pottery and Cane work, Western Region has goldsmithing; Central Region has Pottery and Wood-carving; and Northern and Upper Regions have Straw and Leather-work.

2-1. Definitions and Characteristics of Rural Small-Scale Industries

RSSI have developed into a formidable sector in the economic development of Ghana over the years, employing a considerable number of people, while the urban counterparts have likewise accounted for a significant amount of economic activity. RSSI have been defined variously in different parts of the world. Even within Ghana different definitions are used by different organizations. The Ghana Statistical Services (GSS) describe establishments with less than 10 workers as "small-scale". The now defunct Ghana Enterprises Development Commission (GEDC)[1] defined a small industry as one with plant and machinery worth up to 10 million cedis. The National Board for Small Scale Industries (NBSSI) defines a small industry as one with a labour strength of not more than nine persons and with plant and machinery not exceeding 10 million cedis or US$100,000.[2] A 1990 study of small scale enterprises in Ghana used an employment cut-off point of 30 workers, below which enterprises were defined as "small-scale". The small-scale enterprises have been further disaggregated into "micro" employing 3 persons or less, "very small" employing between 4 and 9 persons, and simply "small-scale" employing between 10 and 30 workers. Most definitions of small-scale industry are based on either the number of employees per firm and/or the value of fixed assets (Harper, 1984, p2; Staley and Morse, 1965, p12-13; UNIDO, 1979, p271). The problem with such definitions is that the cut-off points for both the level of employment and the value of fixed assets has varied between countries, between national agencies within individual countries, and within particular countries and agencies over time. Among aid agencies there is no standardised definition since project objectives differ, so that the term "small industry" is not very clear, and even different departments within the same organisation define the concept to suit the nature of their particular activities. Dawson's study of the Suame Magazine in Kumasi entirely rejects the use of such definitions: "by adopting geographical limits on our subject, we were able to avoid setting limits by reference to the number of employees, the amount of fixed capital, access to state assistance or any other of the more or less unuseful measures currently in vogue"(Dawson, 1991, p173). However, such a draconian approach would hardly be appropriate for studies which are not based on such narrowly defined geographical limits.

Taking into account these problems this paper will use the definition adopted by the NBSSI, namely that a small-scale industry is one with a labour strength of not more than 9 persons. For the purposes of the discussion a further disaggregation is suggested, and adopted, between:-

Craft Industries;
Artisan Industries; and
Processing Industries.

Some craft industries are strictly traditional, some may have developed more recently, and yet others might have evolved and changed from their original traditional basis. Equally, processing industries may be based on traditional technologies, or may have adopted more modern or adapted methods of production with product characteristics which have evolved from those regarded as traditional.

2.1.1 Craft Industries

The Craft Industries (CI) are referred to by authorities such as Allal and Chuta (1982, p1) as cottage industries; Barrow and Greene (1979, p4) use the term household businesses; and Staley and Morse refer to household industry (1965, pp72-94). Such craft activities are conducted in the courtyard or backyard of the residences of skilful craftsmen who draw on the assistance of family members. Technologies are mostly manual in nature and there is a minimal element of product standardisation. The craft producer may be limited to a market in the immediate environs of the dwelling, and many craftsmen are not entirely specialised and may be farmers do not depend on craft production wholly as a means of livelihood. Barrow and Greene are explicit in specifying that the products of these household businesses are by their very nature dependent not on machinery but almost exclusively on acquired skill and craftsmanship (1979, p5).

2.1.2 Artisan Industries

Artisan Industries (AI) depend mainly on the utility value of their products rather than on artistic or sentimental considerations (Shetty, 1963). They need not depend entirely on family labour, and they may also employ outside hired labour. They need not necessarily be located in the dwelling places of the artisans concerned, but may be housed separately. The skills involved in these industries can often be acquired through formal training institutions without detracting from the essential small-scale nature of the operations. The technology that they use is likely to depend on an external energy source, so that electricity or an alternative form of power source is usually essential. Production is likely to be organised on a workshop or small factory basis. In Ghana this category of small-scale industrialist embraces tailors, dressmakers, carpenters, mechanics and electricians etc.

2.1.3 Processing Industries

The third category of RSSI, Processing Industries (PI) is very similar in characteristics to the AI, since the products are mostly utilitarian. The distinction between PI and AI industries is largely based on the nature of the raw materials and on the nature of the final products. Typical examples of processing industries are oil extraction, soap making, maize-milling, cassava processing and bakeries. The second and third groups of small-scale industries (AI and PI) are therefore more "modern" in their characteristics than the first group (CI). However, all the branches of RSSI have distinct similarities in many respects. Staley and Morse (1965, p3) describe them as being characterised by:-

(i) relatively little specialization in management;
(ii) close personal contacts;
(iii) handicaps in obtaining capital and credit; and
(iv) very large numbers of units.

The RSSIs tend to be largely based on local raw materials. Initial capital outlay is very low with little or no capital equipment. The production techniques utilised are characteristically labour-intensive, involving handtools and traditional implements rather than modern powered tools (Steel, 1977, Appendix E). RSSI operations tend to be based on individual skills and abilities; and on the informal transfer of accumulated skills from generation to generation (King, 1977, Chapter 2, pages 44-65). Another important characteristic of RSSIs is the gender issue (Steel, 1981, passim). Over the years the RSSIs have developed along specialised female and male lines so that some industries tend to be dominated by women and others by men. Men are mostly found in ventures such as woodworking, leather-working, smithing and cane-working, while women tend too be found mostly in potteries, food processing, soap making, tailoring, weaving, oil extraction and fish processing. Nevertheless, there are some other industries where there are no particular gender specialisations.[3]

2-2. Economic Significance of Rural Small-Scale Industries in Ghana

Although the report of the last industrial census carried out by the NBSSI is yet to be published, it is certain that Ghanaian RSSIs can be counted in tens of thousands.[4] A recent study of small-scale enterprises in Ghana published by the World Bank contains the following remarks:-

> "A sample survey in 1963 estimated that small-scale manufacturing employed some 184,000 workers in Ghana, or about 17 per cent of total nonagricultural employment, as against nearly 32,000 or 3 per cent in large-scale manufacturing [see Table 1]; an additional 61,000 persons were not covered in either survey, presumably because they worked in their homes. By 1973, employment in large-scale firms had doubled to 64,000 while that

> in small-scale and household enterprises rose by half to a combined total of about 364,000. Although small-scale firms contributed only about a quarter of Ghana's manufacturing value added, they accounted for at least 85 per cent of manufacturing employment - most of it outside the principal urban centers." (Steel and Webster, 1991, page 5)

The results of a new sample survey undertaken in 1989 as part of the Steel and Webster study were not available at the time of publication, hence the reliance on earlier data sources. However, the data in Table 1 provides ample justification for research focused specifically on rural rather than urban small-scale industries. Nearly all of the previous studies of small-scale industry in Ghana have focussed almost exclusively on urban areas, and mostly the larger urban areas (see bibliography).

The 1984 population census shows that in rural Ghana manufacturing possibly accounts for the third most important source of employment after agriculture and wholesale/ retail trade, hotels and restaurants (see Table 2) 5/. One problem in interpreting the population census employment statistics in Table 2 is the phenomenon whereby many people individually hold occupations in several industrial groupings simultaneously. This is likely to be particularly true in the more rural areas. It is to be expected that cottage industries constitute important sources of employment either as the primary household occupation, or as a secondary or supplemental occupation in support of primary occupations which may range from farming to teaching or government administration. The balance of household economic activities as between primary and secondary/supplemental occupations is likely to vary through the year on a seasonal basis in more agricultural communities. The survey of rural industries which is a central part of the proposed research should allow empirical verification of several of the issues outlined in this paragraph.

Allal and Chuta (1985, p7) stress that given the vast numbers of very small enterprises in both rural and urban areas, it is clear that the SSI sector provides substantial employment opportunities for the benefit of the rural and urban poor. They further argue that the RSSI sector plays an important role in mitigating the trend to labour migration from rural to urban areas and the increasing social unrest and congestion in most urban centres of developing countries.

TABLE 1 - DISTRIBUTION OF MANUFACTURING EMPLOYMENT AND OUTPUT BY SIZE CATEGORY

Year	Small-Scale			Large Scale a/	Total b/
	Total	Household or Rural	Organized or Rural		
Employment (number of workers)					
1963	245,187	61,160 c/	184,027	31,865	277,052
1970	358,958	n.a.	n.a.	55,899	414,857
1973	363,524	309,078 e/	54,446 e/	64,000	427,524
1984	532,585	448,651 f/	83,934 g/	55,783	588,368
Distribution of employment (%)					
1963	88.5	22.1	66.4	11.5	100.0
1970	86.5	n.a.	n.a.	13.5	100.0
1973	85.0	72.3	12.7	15.0	100.0
1984	90.5	76.3	14.3	9.5	100.0
Share of manufacturing in total non-agricultural employment (%)					
1963	22.8	5.7	17.1	3.0	25.8
1970	26.7	n.a.	n.a.	4.2	30.8
1984	25.2	21.3	4.0	2.6	27.9
Employment growth (% per annum)					
1963-70	5.6	n.a.	n.a.	8.4	5.9
1970-84	2.9	n.a.	n.a.	0.0	2.5
Share in: (%)					
National GDP 1968 h/	3.4	n.a.	n.a.	9.2	12.6
Manufacturing value added, 1973 i/	25.0	n.a.	n.a.	75.0	100.0

a/ Ghana, **Industrial Statistics**; (in principle covers firms with 30 or more workers).

b/ Ghana; **Population Census**, 1960, 1970 and 1984 (compound annual growth rate is used to estimate population in non-census years).

c/ Estimated as a residual by subtracting employment in the small-scale survey and Industrial Statistics from projected Census employment figures.

d/ Ghana, **Area Sample Survey of Small Manufacturing Establishments - 1963**; (includes both rural and urban establishments).

e/ Cheechi and Company; **Small-Scale Industry Development in Ghana** (1976). Urban small-scale employment is estimated by applying coefficients from William F. Steel's 1973 survey in three cities of different sizes to Ghana's total urban population by size group. Rural small-scale employment is calculated as a residual and includes organized firms.

f/ Self-employed without employees and unpaid family workers.

g/ Calculated as a residual.

h/ Ghana; **National Income of Ghana at Constant Prices - 1965-68** (1973).

i/ Cheechi and Company; **Small-Scale Industry Development in Ghana** (1976).

Source: Steel and Webster, 1991, Table 2, page 6. [Note that this table is reproduced directly from the original - internal evidence suggests that the first note e/ should read d/, and that further elaboration of the title of the "Household or Rural" and "Organized or Rural" columns would improve clarity.]

In Ghana many of the large-scale state-owned firms have performed badly, for a variety of reasons, leading to the demise of many of them. In Central Region, for example, rural-based large-scale industries have failed at the Komenda Sugar Estate and at the Saltpond Ceramics factory with significant loss of employment. Examples from other regions are the State Fishing Corporation (Greater Accra), Asutsuare Sugar Estate (Eastern), the GIHOC Brick and Tiles factory (Greater Accra), Nsawam Cannery (Eastern), and Bonsa Tyre Factory (Western). Large-scale industries in the private sector have also fared badly due to unfavourable economic conditions (Emil Ghana Ltd. at Asebu, Central Region - processing fresh limes - is but one example). In these circumstances small-scale industries in general tended to thrive, and among them RSSIs were of particular significance for income generation and employment.[6]

Some writers, for example Liedholm (1992, p194), have discussed the possibility that some of today's small-scale industries might well emerge as tomorrow's large or medium-scale industries. Other writers have expressed the view that small-scale industries might well be effective training grounds for the managers of tomorrow's large-scale industries. There is an alternative view that the relationship could well be the reverse of that which Liedholm has outlined. Large- and medium-scale industries may be more likely as training grounds for entrepreneurs and technicians who later establish and sustain small-scale industries. This again is an issue which is verifiable, and is included in the areas for further research outlined in section 3 below.

During the crisis period in Ghana of the early and mid 1980s small-scale industries performed an important role in supplying essential consumer products to compensate for the collapse of the larger scale manufacturing sector and the restricted level of imports due to the non-availability of foreign exchange. The RSSI sector was an active part of this development, and so the longer term sustainability of the RSSIs after the resurgence of the larger scale sector, and the recovery of imports following easier access to foreign exchange, is obviously a question of policy significance. Another important role of RSSIs is the enormous contribution of women to the sector. For instance a high proportion of traditional pottery production in Ghana is by women. Other activities such as cassava processing, oil extraction and traditional soap-making and weaving also occupy large numbers of women.[7]

2-3 Institutional Support for RSSIs

In an attempt to strengthen the small-scale industry (SSI) sector the Government of Ghana has taken a number of measures over the years among which is institution building. The National Board for Small Scale Industries (NBSSI) was established in 1986 under the Ministry of Industries Science and Technology. The Board was charged with the responsibility of overseeing the welfare of the SSI sector playing a co-ordinating role. As part of its activities the Board organises training

programmes for small scale businessmen, advises on small business operations, and provides support for applications to banks for credits to businesses in the SSI sector.

The Ghana Regional Appropriate Technology Industrial Services (GRATIS) was set up in 1986 with financial assistance from the European Community and was developed out of the well-established work of the Technology Consultancy Centre (TCC) at the University of Science and Technology, Kumasi (which has always been at the forefront of rural industrialization through its research and technology transfer activities). One of the major objectives of GRATIS is to establish Intermediate Technology Transfer Units (ITTUs) in each of Ghana's regions. By 1992 GRATIS had succeeded in establishing four ITTUs in Tema (Greater Accra), Ho (Volta), Cape Coast Central), and Sunyani (Brong Ahafo) to join the two original ITTUs at Kumasi (Ashanti - Suame Magazine) and Tamale (Northern) previously set up by the TCC. The ITTUs consist of workshops and training facilities for the transfer and management of appropriate technologies to small-scale industrialists. They also serve as repair and service workshops. GRATIS has four divisions:-

i) ITTU Operations;
ii) Socio-economic and Communications;
iii) Rural and Women's Industries; and
iv) Finance.

2-4 Training Programmes

In 1987 the NBSSI introduced the Entrepreneurship Development Programme (EDP) with the aim of selecting and developing the skills of potential entrepreneurs.[8] This programme is supported by the World Bank and provides systematic training and professional counselling to suitable people so that they are encouraged to establish new businesses or to operate their existing businesses with greater success. The overall objective of the programme is to enhance the employment- and income-generating capacity of small scale businesses.

The main target groups for NBSSI's EDP training programme are a) women, b) science and technology graduates, c) unemployed graduates and d) retired or redeployed public servants. Subject areas covered in the training workshops include:-

i) Achievement Motivation Training;
ii) Selection of appropriate business opportunities;
iii) Business planning and goal setting;
iv) Market research and analysis;
v) Advertising and promotion;
vi) Book-keeping and financial projections;

vii) Government regulations;
viii) Market strategy; and
ix) Obtaining start-up capital.

After the training NBSSI follow up by assisting trainees in establishing their new businesses through intensive counselling on an individual basis which focuses on problem solving.

3 Areas for Further Research

A major area for future research arises from the observation that consultancy work undertaken in rural areas by BIRD had revealed an acute paucity of information on small-scale manufacturing activities. In the absence of any baseline information, and more significantly the absence of baseline analysis, it is difficult if not impossible to make any projections of RSSI activity in the context of rural development planning. Much of BIRD's consultancy work in recent years has been focussed on the formulation of comprehensive rural development plans, and the design and implementation of rural microproject development plans.

In order to define the target group of RSSIs sufficiently closely the focus should be placed on enterprises with up to 9 workers, the definition used by the NBSSI. This means that the concentration is on the smallest end of the scale spectrum. The research focus includes all three sub-sectors identified in section B, namely Craft Industries (CI), Artisan Industries (AI) and Processing Industries (PI). The first objective is to establish baseline information. In order to achieve this it was decided that it would be necessary to undertake as close as possible to a 100 per cent questionnaire survey of all RSSIs in 2 Districts in the absence of any viable sampling frame (based on the "population" as a whole).[9] The selected Districts are Afigya-Kwabre (near Kumasi in Ashanti Region) and Asebu-Abura-Kwamankese (near Cape Coast in Central Region).

The first issue to be addressed by the survey is the generation of baseline information on product lines, location, employment and other basic characteristics of RSSIs in the two districts. An early task has been the preparation of a draft questionnaire. A high proportion of part-time and family employment is anticipated in the RSSIs surveyed. For comparability with other sectors it is necessary to convert "part-time" labour inputs into "full-time" equivalents. If each part-time worker were to be recorded as contributing a full "man-year" of labour input this would represent a serious exaggeration of the employment effect of the RSSI sector (and a serious under-estimation of labour productivity). This problem has received hardly any attention at all in the literature, so that an omission exists leading to potentially serious misrepresentation - as may be found in recent publications (e.g. Uribe-Echevarria, 1991b, pp45-46) - of the employment effect, and of the labour productivity, of small-scale enterprises.

The second issue is that of the technology employed. Some commentators on RSSIs have characterised them as having relatively low technological levels with associated low levels of productivity. More significantly the implication has been drawn that the RSSI sector lacks technological dynamism (Emmanuel, 1982, Preface) so that the scope for productivity increases would be very limited due to the absence of adaptation and development of better production methods and of changed product characteristics. A questionnaire survey and analysis would be able to focus attention on this verifiable issue.

The third issue which merits particular attention is that of the market. A considerable amount of the success of RSSIs is likely to depend upon the extent to which the nature of the market is properly understood, and on the extent to which the changes in the market are incorporated into the "business plan". This issue is obviously linked to the "technology question" outlined in the previous paragraph.

The fourth and final issue is that of the source of training, skills and manpower development. The skill level of the workforce will clearly limit the extent to which technological adaptation is possible, and the extent to which it is possible to respond effectively to changes in the nature of the market within which the RSSI operates. While concepts such as "manpower development" may seem somewhat sophisticated in the context of RSSIs, the issue is relevant and significant.

A survey covering two districts has been planned because including only one could be seriously unrepresentative and the two districts are manageable within the level of research resources that might be available. The two will give more confidence in any conclusions that are reached, and might perhaps act as a "pilot" study on which basis future research work might develop. The two districts selected are about 150 miles apart, are close to the universities involved in the Bradford/ Ghana Development Studies Link, making the logistics of the survey more feasible. The geographical separation also provides some desirable differentiation. At the time of the 1984 census Asebu-Abura-Kwamankese (Central Region) had a population of 61,357, and the land area is 117 square kilometres. Afigya-Kwabre had a population of 85,125 in 1984, and its land area is slightly larger than that of Asebu-Abura-Kwamankese (a precise figure is not available in the government documents consulted).

Table 2 has been adapted from information published in the regional reports of the 1984 population census. The Kwabre and Asebu Local Council areas relevant in 1984 are not entirely identical to the present district boundaries. But, there are sufficient similarities that conclusions based on the 1984 data will not be misleading in the current context.

The 1984 census identified 922,762 employed persons aged 15 years and over in Ashanti Region, and 505,174 in Central Region. Of these 26,807 were employed in Kwabre district and 12,595 in Asebu district. In Kwabre district those employed

TABLE 2 GHANA POPULATION CENSUS 1984

EMPLOYED PERSONS AGED 15 YEARS AND OVER, BY INDUSTRY AND LOCAL AUTHORITY

INDUSTRY	TOTAL ASHANTI REGION	KWABRE LOCAL COUNCIL	TOTAL CENTRAL REGION	ASEBU LOCAL COUNCIL
Manufacturing	84,447	2,835	43,262	3,336
Male	39,580	1,410	14,831	517
Female	44,867	1,425	28,431	2,819
Manufacturing of Food	26,800	918	21,804	2,879
Male	3,384	66	2,125	182
Female	23,416	852	19,679	2,697
Beverage Industries & Tobacco Manufacture	10,230	256	1,859	17
Male	9,089	250	1,377	15
Female	1,141	6	482	2
Textile, Wearing Apparel & Leather Industries	28,221	1,079	10,508	184
Male	10,922	616	3,341	72
Female	17,299	463	7,167	112
Manufacture of Wood & Wood Products incl Furniture	10,678	315	4,847	186
Male	10,230	306	4,752	184
Female	448	9	95	2
Manufacture of Paper & Paper Products, Printing & Publishing	533	10	284	2
Male	426	10	238	2
Female	107	0	46	0
Manufacture of Chemicals & Chemical, Petroleum, Coal, Rubber & Plastic Products	3,583	76	1,193	36
Male	1,572	15	557	30
Female	2,011	61	636	6
Manufacture of Non-Metallic Mineral Products, except Petroleum & Coal Products	623	40	790	0
Male	274	6	521	0
Female	349	34	269	0
Basic Metal Industries & Manufacture of Prefabricated Metal Products, Machinery & Equipment	2,954	127	1,717	30
Male	2,893	127	1,667	30
Female	61	0	50	30
Other Manufacturing Industries	825	14	260	2
Male	790	14	253	2
Female	35	0	7	0
All Industries	922,762	26,807	505,174	12,595
Male	440,587	11,511	232,279	5,479
Female	482,175	15,296	272,895	7,116

TABLE 2 continued

Non-Manufacturing Industries

Agriculture, Hunting, Forestry & Fishing	571,919	16,932	325,096	5,966
Male	263,058	6,518	163,170	3,791
Female	308,861	10,414	161,926	2,175
Mining & Quarrying	11,428	9	1,722	5
Male	11,107	9	1,470	5
Female	321	0	252	0
Electricity, Gas & Water	1,768	50	1,169	42
Male	1,658	49	1,079	42
Female	110	1	90	0
Construction	9,450	337	6,163	214
Male	9,091	332	5,865	212
Female	359	5	298	2
Wholesale & Retail Trade, Restaurants & Hotels	128,743	3,455	77,219	2,071
Male	26,779	604	7,155	99
Female	101,964	2,851	70,064	1,972
Transport, Storage & Communication	21,727	813	9,245	261
Male	21,278	806	8,978	256
Female	449	7	267	5
Finance, Insurance, Real Estate & Business Services	3,042	22	1,319	8
Male	2,166	19	1,042	8
Female	876	3	277	0
Community, Social & Personal Services	90,238	2,354	39,979	692
Male	65,870	1,764	28,689	549
Female	24,368	590	11,290	143
International & Other Extra-Territorial Bodies	23	0	10	0
Male	18	0	6	0
Female	5	0	4	0

Note: The "Local Authority" areas included in the 1984 Population Census are not identical to the "Districts" specified in the planned research, but the difference is minimal.

Source: Republic of Ghana; **1984 Population Census - Demographic and Economic Characteristics**; Ashanti and Central Regions, Table 11, pages 101-124 and 76-93; Statistical Service, Accra, 1987.

in "all manufacturing" amounted to 2,835, and in Asebu district the equivalent group amounted to 3,336 persons. Since these figures for "all manufacturing" employment of persons aged over 15 years include all scales of operation, the figures for employment in businesses employing 9 workers or fewer will be less than these totals. The implication is that in each district the number of businesses to be covered by the questionnaire survey might be in the order of 600 to 700. This is well within the order of magnitude anticipated in the planning of the research, so that the feasibility of the proposed survey appears to be confirmed by the census figures.

4. Wider Issues for Further Research

There are four areas which merit particular attention:

i) The macro-economic role of rural small-scale industries;
ii) Factors favouring or impeding rural small-scale industry development;
iii) RSSI productivity levels and growth including technological change;
iv) Application of concepts of economic efficiency to RSSIs.

4-1. Macro-economic role of Rural Small-scale Industries

Many discussions of small-scale industrial development focus to a considerable extent on the policy aspects of encouraging development of the sector (Uribe-Echeverria, 1991a, page 9). However, experience suggests that policy is often more successful at the larger end of the "small-scale" spectrum, and that policy may even sometimes impede enterprises at the smaller end of the spectrum. This particularly applies to the so-called "informal sector", where "sub-contracting", including the issuing of pro-forma invoices by smaller firms to larger firms, has been suggested as a form of encouragement (ILO, 1972, page 228). The bureaucratic nature of the tendering, contracting and invoicing system is likely to be such that the smallest of small firms in rural, or even urban, areas of developing countries would be excluded by any such proposal. "Government Policy" then might be an irrelevance for many small-scale industries. A large part of RSSI development is spontaneous rather than government-sponsored and the strength of the sector is based on the characteristics of the national economic structure rather than on specific policy measures.

Some policy measures taken to encourage the larger-scale manufacturing sector effectively discriminate against the smaller-scale sector. Ready access to foreign exchange and to loan capital at comparatively low rates of interest effectively stimulate the larger-scale industries to the exclusion of smaller-scale firms. Because of the nature of the smaller-scale sector, simply attempting to make foreign exchange or loan capital available on the same terms which apply to the larger-scale sector would not really solve the problem because there are other

factors which might inhibit the small-scale sector more severely than these (see Section 4-2 below). The range and types of policy measures which can effectively stimulate the RSSI sector would equally be inappropriate if applied to the larger-scale sector.

Perhaps the technological emphasis adopted in Ghana as a result of the pioneering work of the Technology Consultancy Centre (TCC) at the University of Science and Technology, Kumasi has provided a particularly appropriate input for the RSSI sector. The development of the Ghana Regional Appropriate Technology Industrial Services (GRATIS) and of the Intermediate Technology Transfer Units (ITTUs) is a logical outcome of the earlier work of the TCC. The first ITTU was set up at Suame Magazine in the Kumasi urban environment (Dawson, 1991), and some verification of the value of this approach to more RSSIs should be possible through the proposed questionnaire survey.

While an understanding of small-scale industrial development as part of the "organic" evolution of the economy is important, it is also necessary to be clear why it is that it is of interest to policy-makers. Ghana, in common with many developing countries, does not have a formal unemployment benefit scheme, and it is unlikely that any such scheme will be developed in the near future. In these circumstances the tendency has been for labour to be absorbed into lower productivity activities as a means of distributing income - everybody needs to consume, but everybody cannot earn a living in the "modern" part of the economy. This issue became particularly pertinent with extensive retrenchment of workers from public sector bodies (for example the Cocoa Marketing Board - COCOBOD - Toye, 1991, p189; Green, 1987, p32), without the creation of new employment opportunities in the large-scale sector to replace the "ghost" jobs which had been lost. The hope had been that the displaced workers would be able to establish, or be absorbed into existing, small-scale industries or farming activities without any clear evidence that such a development was really feasible.

The future research is intended to throw light on the employment characteristics of the rural small-scale industrial sector, and so allow a better understanding of whether the anticipated absorption of labour was a reasonable expectation. In addition, development of a firmer base for rural small-scale industries offers the possibility of discouraging greater migration of population to urban areas. Such a firmer base could be enhanced by a better understanding of the nature of the sector arising from careful research based on the analysis of primary data collection.

4-2. Factors Favouring or Inhibiting Rural Small-Scale Industrial Development

In the previous section reference was made to the possibility that policies designed to encourage the establishment of larger-scale industries are likely to discriminate against smaller-scale industries. Any policy which effectively subsidises larger-

scale firms relative to smaller-scale firms competing in the same product markets will reduce the impact of other policies designed to stimulate small-scale industry development. There is therefore a potential for policies espoused by different parts of government to conflict with each other - a quite common occurrence (Elkan, 1971 and Kaldor, 1971). However, there is a danger that discussion of measures to encourage the development of small-scale industries focuses on issues of government policy rather than on structural features which are inherent in the nature of the small-scale sub-sector and which themselves favour the smaller rather than the larger-scale of industrial development. In essence the point is that policies intended to favour smaller-scale industries are the more likely to be successful if they are supportive of the natural advantages of the smaller-scale, rather than if they are antagonistic to the natural advantages of the larger-scale.

Two particular sources in the literature relating to small-scale industry development give a basis for a categorisation of the factors tending to favour smaller-scale industry development. Staley and Morse's now dated but seminal book (1965, p112) is cited in Sutcliffe's equally seminal book (1972, p237) as selecting three broad areas of small-scale industry characteristics- Locational, Process Technology and Market Influences:

I) Locational factors favouring smaller-scale industries include - i) the processing of dispersed raw material supplies, ii) the existence of localised markets and high transport costs and iii) service industries.

II) Process Technology factors include - i) separate (rather than integrated) manufacturing operations, ii) craft or precision specialist work and iii) simple assembly, mixing or finishing operations.

III) Market Influences include i) differentiated products with low scale economies and ii) industries serving small local markets.

It is quite clear from this eminently sensible categorisation that the inter-relationship between on the one hand the technical nature of products and production technology and on the other hand the nature of the material inputs and product markets (sometimes referred to as the "techno-economic" or "technico-economic" inter-relationship) is all-important in determining whether structural economic features favour larger or smaller scale industries. This places SSI development in the analytical sphere of scale economies (Tribe, 1991; Elleithy, 1992) and of "economies of scope" (Panzar and Willig, 1981; Prendergast, 1990).

Staley and Morse also have some more general remarks on features of small-scale industrial production which are very relevant to the concerns of this discussion paper:-

> "Household and artisan production typify the manufacturing of the traditional society. In the modern world, imported goods impinge on

artisan products, cause unemployment in traditional lines, and raise the problem of adapting to new competition, new demands and new methods. At the same time, improvement of road, river and rail transport, growth of output in agriculture, forestry and mining, spread of cash transactions, and rising incomes, stimulate industrial beginnings in the port cities and a few up-country centres. Usually among the first small-scale manufacturing units, aside from traditional household and artisan activities, are:

1. Simple processing plants for products of agriculture and forestry: rice mills, flour mills, saw mills, oil seed presses, cotton gins and presses.
2. Rudimentary mill spares and parts for transport and other equipment, as an activity of repair and service shops.
3. Simple consumer goods, bakery products, laundry soap, soda water, furniture, buckets, pails, trunks." (1965, p184).

They continue with a list of "opportunities for early industrialisation:

1. Agricultural implements and handtools,
2. Agricultural supplies,
3. Agricultural, animal and forest products,
4. Construction materials,
5. Consumer goods,
6. Institutional supplies - furniture etc." (1965, p184-5)

There is much in these quotations, and in the entire book published over a quarter of a century ago, which is directly pertinent to the concerns of the proposed study of rural small scale industries in Ghana outlined in this paper. Indeed, despite the considerable amount of literature published on small-scale industries in the intervening years the expression 'plus ça change, plus c'est la même chôse' very much comes to mind. A similarly pertinent approach to this aspect of industrial development in less developed countries is to be found in a contemporaneous chapter in Gunnar Myrdal's major study on Asian economic development (Myrdal, 1968, Chapter 25).

The second particular source in the literature is a study of Tanzanian industrial development (Silver, 1984, Chap.8). The brief but valuable discussion of small-scale industries ("own-account" workers) is placed in the context of the location of industry: "That these own-account workers can co-exist in industries where 'large-scale' establishments are operating arises from the ability of such workers to cater for specialised markets, to be competitive owing to the lack of any necessity to incur transport costs in order to reach their market (and up prices) whenever stoppages occur in the 'large' establishments. Own-account workers may not be solely dependent on their trade, undertaking farming, along with manufacturing activities." (Silver, 1984, p305) The perspective represented in this quotation is similar to that proposed for the more detailed research which will hopefully follow from this discussion paper.

4-3. Productivity and Technology

Reference is frequently made to the low level of the technology employed by small-scale industries in developing countries. A "low" level of technology implies comparatively low labour productivity, and perhaps low economic efficiency. However, low labour productivity may be more than offset by a lower labour cost, so that economic efficiency of the "low technology" option might be higher than the "high technology" option, certainly in the "static" short-term sense.

A concern which has not been clearly articulated in the literature but which is often implied is that "low technology" might be associated with low growth prospects, so that there is a better prospect of growth with higher, more modern, technological options. There must be a possibility that arguments such as this are based on a serious misunderstanding of the process of economic growth, and specifically from a confusion over levels and growth rates of productivity. Enhancement of productivity levels has always tended to come about by a mixture of gradual improvement in some sectors of the economy and more radical changes in others. A sector which experiences gradual improvement this decade may have a major technological innovation in the next decade, or the one after. Thus, a 10 per cent improvement on a low level of labour productivity in a low technology sector employing large numbers of people is more economically significant than a 50 per cent improvement in another sector employing less than one-fifth of the workers. In this sense the utilisation of adapted or enhanced indigenous or traditional technologies in a large economic sector can have at least as much or more of an effect on the national economy than the adoption of modern technologies in a small economic sector.

The encouragement of rural small-scale industrial development as part of a strategy of national development can therefore be justified not in the context of the "social welfare" objective of creating (perhaps unproductive) employment but rather in the context of achieving economic growth with desirable income distribution characteristics. If this scenario is developed then the justification for an emphasis on small-scale industries (including those in the rural sector) is not related at all to an apologia for economically inefficient activities, but is rather something which has an entire range of very desirable economic characteristics.

The research agenda then becomes one associated with attempting to obtain more information on the characteristics of the sector so that policy measures in the future might be based on a better understanding of the issues involved. Emphasis within industrial development policy has tended to be on the large and medium scale sector (Weiss, 1988), and even small-scale industrial development has often focussed on the larger end of the small-scale spectrum. The argument which is being presented here is that industrial development policy should be based on an overall and integrated view of the entire sector, including the RSSI sub-sector.

Consideration of the comparative productivity of alternative scales or technologies often revolves around the question of capacity utilisation. Large-scale capital-intensive industrial enterprises are accustomed to operating on a 3-shift 24 hour basis for 5, 6 or even 7 days a week perhaps for most of the year. Small-scale enterprises, particularly in rural areas of developing countries, might have significantly lower levels of capacity utilisation due to the seasonal factors outlined in section 3 above, and in the final paragraph of section 4-4. The proposed research has explicitly included questions in the draft questionnaire to gather information on this type of phenomenon. Certainly, the entire issue of capacity utilisation in the small-scale industrial sector requires fuller investigation with an emphasis which is somewhat different to that regularly used in analysis of the large- and medium-scale sectors.

4-4. Economic Efficiency

There is a variety of definitions of economic efficiency, some of them partial in nature and others all embracing, and some static with others being more dynamic. It is clear that many writers have different concepts of efficiency in mind when they discuss this issue, so that to a degree the question of efficiency cannot be separated from the immediate concerns of a particular discussion, or from the specific analytical objectives of the discussion.

In recent years "economic efficiency" in the production sphere has come to refer particularly to analysis using a form of "discounted resource flows" together with a set of "national economic parameters" (e.g. Weiss, 1985) which reflect the social opportunity costs of resources. Not least, the divergence between private and social opportunity costs include the distinction between the private and social rates of time preference and associated discount rates. Some studies have referred to social cost-benefit methodology as a basis for the assessment of the economic efficiency of small-scale enterprises (Liedholm and Mead, 1986, pp315-316 and Liedholm and Kilby, 1989, pp350-355).

Some recent remarks by Uribe-Echevarria (1991a, pp.14-15) are suggestive, but do not go far in resolving the conceptual issues involved. He points out, correctly, that many commentators have been content to regard small-scale industries as "efficient" in the sense that they have lower capital-labour ratios than larger scale alternatives, and therefore create more "jobs" per unit of investment. The implicit focus of this approach is that the objective principally in view is the creation of employment, rather than the efficient use of resources as a whole in the long term. Thus, the "employment creation view" is both "partial" and "static" in nature. Uribe-Echevarria also mentions the "total factor productivity" (TFP) approach in passing, like many other writers neglecting to define the term, and neglecting to outline the severe analytical limitations of the approach. While there has been a little success in using the TFP method of analysis in relation to larger scale manufacturing in countries where industrial statistics are detailed and reliable

(Nishimizu and Page, 1988), it is inconceivable that it would be used in the analysis of small-scale industrial production in developing countries with such a limited statistical base. In brief, the TFP method depends on the identification of two production functions at different points in time, with two input/output points - one on each. The change in TFP over time then depends on being able to distinguish between increases in output brought about by increases in inputs, and increases in output brought about by improvements in the efficiency of resource use (i.e. changes in productivity of resources as a whole). While the TFP approach is conceptually very clear, it must be regarded as impractical for empirical economic analysis, particularly in the small-industry context so that vague references to its use must be considered as seriously questionable on intellectual grounds.

We are then faced with a situation where in order to produce a convincing argument that rural small-scale industries are efficient users of national economic resources, their sustained operation is not a sufficient condition to establish "economic efficiency", but may simply reflect financial sustainability. Further, we may not be able to establish "absolute" economic efficiency (i.e. produce an argument that no alternative use of resources could conceivably be more efficient). Rather we would probably have to satisfy ourselves with a "relative" economic efficiency criterion, so that we would be concerned with establishing that resources used in fashion A are being more or less efficiently used than in fashion B, without any conclusion being drawn about whether resources could be more efficiently used than in both fashions A and B. In the context of theoretical frameworks this places discussion more in the area of Leibenstein's X-efficiency criterion (Leibenstein, 1966) than in that of neo-classical concepts of optimal resource allocation (Little, Majumdar and Page, 1987, Chapter 9).

It is not proposed that the research which is in view will collect data which would permit direct analysis of the relative economic efficiency of rural small-scale industries. Neither is it proposed to collect data which would permit analysis of the financial profitability of the small-scale enterprises. However, it is intended that the research will permit reflection on the analytical issues involved, and that it will generate some new ideas which might be incorporated into future analytical work.

In Ghana many people have multiple occupations, so that teachers or civil servants might also have part-time work in a family small-scale firm. Within a family enterprise the wife might work "full-time" with the husband contributing whenever he is free. Alternatively, the entire enterprise might be "part-time" as well as possibly being seasonal. One problem arising from this situation and which has not really been effectively addressed in the literature is that of how "employment" should be measured for small-scale industries. There are two main problems. I) First, in economic analysis prices (wages) are applied to different types of labour to reflect the non-homogeneity of the labour force and the different social opportunity costs of different types of labour. The aggregation of different types

of labour inputs in order to obtain total labour costs is achieved through valuation based on this social opportunity cost concept. There is evidence to suggest that significant variation exists in the opportunity cost of different types of labour between regions, and this would be important in the context of the rural sector. II) Second, in rural small-industries much of the labour force is not employed on a year-round basis either due to the seasonal nature of material supplies, the seasonal nature of demand or the seasonal variations in labour supply (due to competing demands for cultivating, weeding and harvesting in the agricultural part of the rural economy). These seasonal considerations imply that the social opportunity cost of labour will vary through the year. In addition, labour inputs into an enterprise amounting to, for example, 9 man-years might be made up of contributions by considerably more than 9 workers through the year. There is also the implication that while it is unlikely that it will be possible to look for a clear and unambiguous answer to the question "how many workers does your business occupy?", it will be even more impossible to obtain an answer to the question "how many workers does your business employ?" because the nature of "employment" implies the payment of a wage, and many rural small-scale industries employ unpaid family and other unwaged labour to a large degree.

For these reasons alone the question of assessing the size of a firm by reference to the number of workers is fraught with difficulties. Further, without a consistent definition of "labour inputs" and of "employment" it is impossible to arrive at estimates of labour productivity levels and growth rates (see section 2-1 above).

E) Concluding Remarks - An Agenda for Research

This paper has been intended to set the scene for proposed collaborative research between the Development and Project Planning Centre of the University of Bradford and the Bureau of Integrated Rural Development of the University of Science and Technology, Kumasi, Ghana. The object of the proposed research is specified as the rural small-scale industry sector in Ghana, with rural areas defined as outside urban settlements with more than 5000 inhabitants, small-scale defined as 9 or fewer workers, and industry defined as commercial production of products which require the processing of material inputs.

The paper justifies its concentration on the rural small-scale industrial sector on the grounds of its considerable size, and on the fact that most of the research which has been undertaken on Ghanaian small-scale industries has focused on larger urban areas to the exclusion of the rural sector. In large measure discussion of industrialisation, and on the establishment of a significant manufacturing sector, tends to disregard rural industries, and rural small-scale industries in particular. However, experience with large-scale industries in Ghana has been extremely disappointing in general, and more recently the process of "retrenchment" (redundancy of part of the labour force) associated with the Economic Recovery Programme has further eroded manufacturing employment. Another notable

feature of the rural small-scale industrial sector is the economic significance of women, who make up a high proportion of those employed in several of the more important product lines.

Ghana Government encouragement of small-scale industries has been restructured in recent years. The development of new institutions such as the National Board for Small Scale Industries, the Ghana Regional Appropriate Technology Industrial Services and the Intermediate Technology Transfer Units perhaps herald a new and more effective programme of government policies.

The proposed research is to be based largely on a questionnaire survey in two rural districts, Afigya-Kwabre (Ashanti Region) and Asebu-Abura-Kwamankese (Central Region). The survey will concentrate particularly on the collection and analysis of data a) of a baseline nature, b) on employment characteristics, c) on technological change, d) on the nature of the market for products of rural small-scale industries and e) on training/enskillment of the labour force.

In the analysis of the research results (including a review of the literature) four wider issues relating to the rural small-scale industrial sector will be addressed: i) their macro-economic role, ii) factors favouring or inhibiting their development, iii) the level and growth of productivity and technological change and iv) economic efficiency criteria relevant to the sector.

Footnotes

1. The Ghana Enterprises Development Commission was absorbed into the National Board for Small Scale Industries in 1989.

2. The $100,000 limit relates to specific foreign exchange costs for the establishment of a small-scale enterprise, and does not relate to an equivalent to domestic investment costs of C10 million. At the mid-1992 exchange rate of about C800 to £1 sterling, and about $1.90 to £1, the $100,000 would amount to £52,632 and the C10 million to £12,500. (The unit of currency in Ghana is the cedi.)

3. This point is evident from the data contained in Table 2, pages 11 and 12.

4. On the basis of 8,000 shop-owning proprietors within the 1988 working population of Suame Magazine of 40,000 (Dawson, 1991, p179) it can safely be surmised that the total number of small-scale enterprises in Ghana as a whole may be measured in tens of thousands.

5. As explained in section 3 Kwabre District in Ashanti Region and Asebu District in Central Region, while being close to the respective regional capitals, are substantially rural in nature with settlements being largely less than 5000 population.

6. The Ghana Government's Divestiture Programme relates to the issue of larger-scale state-owned-enterprises (SOEs) which have found it difficult to sustain operations. The issue of the implications of the revival of large-scale industries under the structural adjustment programme (SAP - Economic Recovery Programme - ERP) on the sustainability of small-scale industries is one addressed by recent research at the Economics Department, University of Ghana, Legon (Sowa, 1991).

7. Table 2, indicates the especial significance of women in employment in the food manufacturing and textiles, wearing apparel and leather industries sub-sectors of manufacturing.

8. The term "entrepreneur" tends to be abused, since strictly observed it refers to economic activists who introduce innovations into the system. Thus, businessmen and managers may operate businesses, but do not necessarily introduce significant innovations. If the NBSSI and GRATIS wish to operate entrepreneurially then they would select trainees who are capable of adopting innovations and are prepared to take calculated risks. If the innovations prove to be sustainable then they may be diffused through the system by businessmen and managers (who have not themselves innovated and so have not taken on the initial risk) by some kind of "demonstration

effect". This is the type of approach which has been used in agricultural extension work for many years.

9. There are a total of 110 Districts in Ghana, of which 18 are in Ashanti Region and 12 in Central Region. Afigya-Kwabre District contained 4.4 per cent of Ashanti Region's population, and Asebu-Abura-Kwamenkese District contained 5.4 per cent of Central Region's population in 1984. These two districts therefore contained about 1.2 per cent of the total population of Ghana in the most recent Census year (Republic of Ghana, Quarterly Digest of Statistics, December 1991, Vol.IX No.4, Table 94 page 112).

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The objective of this bibliography is not only to indicate the sources that have been referred to in the preparation of the discussion paper but also to cover the literature in this particular subject area comprehensively at this stage of the work. Because of these dual objectives a significant number of the works listed are not directly referred to in the text of the paper.

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