STRATEGIES FOR STRENGTHENING SPATIAL LINKAGES OF SMALL SCALE INDUSTRIES FOR DISTRICT DEVELOPMENT

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BY

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However, there are always those whose contributions cannot escape mentioning.

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ABSTRACT

One of the post-independence development strategies adopted by most African countries like Ghana, was the import substitute industrialization strategy. Under this strategy, large scale manufacturing industries were established, while the promotion of small scale industries was neglected. As a result of this, the spatial distribution of these industries tends to be skewed in favour of urban centres. This can be seen by the dominance of the so called "golden triangle" (The Greater Accra-Tema/Takoradi-Kumasi) in the industrial sector of the economy. This has led to the concentration of many entrepreneurs (who should have helped in establishing industries in the rural areas) in the urban centres, where they are assured of foreign exchange, more competitive market and government support. Thus, the rural areas remain isolated not only in terms of industrial establishment but also infrastructural development as well. The industries present in rural areas are scattered all over, with little or no coordination.

The study has attempted to identify the spatial linkages existing in small scale industries in the Krachi District, their problems, constraints and potentials.

Information for the study was collected by administering questionnaires in a field survey, and informal discussions with some entrepreneurs. The survey covered 10 per cent of a total of

804 small scale industries identified in the nine settlements selected for the study.

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The study in general found out that the spatial linkages were stronger internally (within the district) than externally (outside the district). However, the strength of the linkages varied from one variable tested to another. For example, in connection with the source of capital, labour and raw materials, there were stronger internal linkages. Only a few industries like carpentry, dressmaking had strong external linkages in connection with the supply of raw materials. Secondly, except for the products of the gari processing, and fish smoking industries, the finished products of small scale industries in the district were disposed internally. This meant that the market for these products was restricted and therefore offered little scope for competitive production.

However, in connection with the supply of tools and equipment, the linkages were stronger externally (outside district). This meant an outflow of working capital.

Social and economic linkages in terms of the acquisition of initial and working capitals were mainly internal, especially among family members and customers. Information linkages were stronger among entrepreneurs and with relative living outside the district.

Entrepreneurs reported having lots of problems especially those problems connected with spatial linkages namely: bad roads, high cost of transportation, inavailability of financial institutions in the district.

Some potentials, which if well utilized and or developed would enhance the strengthening of spatial linkages, were identified. These included the presence of many small scale industries in the district, the presence of many periodic markets, the presence of the lake as a source of fish for the fish smoking industry, the presence of large labour pool, the presence of clay deposits and vast uncultivated land.

Among the constraints identified were: the formation of the Volta Lake, that has virtually cut off the district from the major southern urban centres, the low level of professionally qualified entrepreneurs, the one-man nature of the industries and the long distance to the source of raw material.

The strategies suggested to strengthen the spatial linkages of small scale industries in the district included:

- the establishment by the district assembly of two important organs namely: the District Planning Coordinating Unit (DPCU) and the Industry and Trade Department. This two form the base for strengthening the spatial linkages by providing the

technical know-how to the entrepreneurs.

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- provide frequent training facilities, support the three vocational and technical schools in the district. These will improve the standards of the entrepreneurs and can therefore be in position to inject innovations into their industries.

- to strengthen the physical linkages, it was suggested that the district assembly, gives more logistical support to the Department of Feeder Roads, so that roads could be improved. In connection with the improvement of the lake transport system, it was suggested that concerted efforts be put together by the three districts namely: Krachi, Gonja East and Sene.

- the rehabilitation of the Rural Agricultural Bank at Kete-Krachi and the construction of one at either Dambai or Chinderi was suggested as a strategy for strengthening financial institutions in the district.

- coordination of the many periodic markets in the district so that entrepreneurs can have wider markets for their products.

VITA

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In 1994, he obtained a Post-graduate Diploma in Regional Development Planning and Management, which at the same is one of the requirements for admission into the second phase of the programme at the Department of Planning, University of Science and Technology.

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CHAPTER ONE: INTRODUCTION

1.1 GENERAL INTRODUCTION

Over the past years, there has been a shift in policy in Ghana away from state direct participation through ownership of enterprises. The government now places emphasis on private sector initiative in future industrialization. Small scale industries have a role to play in this direction. Some of the arguments put forward by Steel and Webster (1992) quoted from Boapeah (1994:1) include:

i. Small scale industries tend to be labour-intensive and use low level of technology;

ii. Small scale industries can respond flexibly under difficult and changing conditions; and

iii. Small scale industries tend to serve dispersed local markets, and provide differentiated products.

These show that, in general, the requirements of small scale industries are minimal. It is therefore argued that development should start with small units like small scale industries in the rural areas. These units will lay the foundation for establishing larger production units in harmony with the resources set free through increased efficiency and the rising level of satisfaction of basic needs (Boapeah and

Poppe, 1992: 16). This is consistent with the `development from below´ advocated for in Ghana´s decentralisation policies.

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By this approach, the lower levels in the economic development structure are also given the chance to develop. This has led to the concept of rural development, whose main aim is to upgrade rural areas socially, economically and ecologically and to achieve a better balance between urban and rural development. For neither the goals of increased productivity and income expansion nor those of greater equity in income distribution can be attained without increasing interaction among settlements, market towns in developing nations without integrataing urban and rural function into a national spatial system (Rondinelli and Ruddle, 1978, 159). There should be a conscious effort to link settlements of various sizes to each other through a network of spatial linkages including physical, technological, economic linkages.

This study attempted to identify these spatial linkages for small scale industries in the Krachi district and to suggest strategies for strengthening them.

These direct or indirect spatial linkages motivate entrepreneurs to produce more, thereby generating more capital and helping to raise the level of economic activities within

the environment. Thus according to Yankson (1992) one of the ways in which entrepreneurs are linked to their immediate economies, district or regional is through the sale of their products and services. On the other hand, entrepreneurs require inputs such as raw materials, tools, machine spare parts, for their productive activities. By these interactions small scale industries support agricultural and commercial activities of the area in which they operate.

The development of these spatial linkages within and outside the settlements is a sine qua non for a successful industrial development.

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1.2 PROBLEM STATEMENT

Even though a lot of documentation on small scale industries has been done, much of existing literature seems to focus on either their promotion or the role they play in district development. This can be confirmed by the nature of the findings of most studies already carried out in various parts of the country. Among these studies are Steel (1977), Andrae (1981), Anheier and Seibel (1987), Dawson (1988). These studies have tended to neglect the spatial linkage aspect or where they are touched they are given secondary attention.

One of the studies that has so far laid sound emphasis on spatial linkages is the one carried out by Boapeah and Poppe (1992). For developing small scale industries, they recommend: a spatial development strategy that seeks to improve the spatial determinants and functional linkages of small scale industries in order to strengthen their economic performance.

The spatial interactions are very important in the rural areas where a gradual shift to non-farming activities, especially manufacturing, repairs and services, is gaining momentum. These emerging industries rely on local raw materials and intermediate inputs for their effective functioning. The movement of these raw materials and finished products between the industries have to be explored and strengthened. The local market serves as a link between small scale industries and their environment. This link also has to be strengthened to ensure effective flow of products and information.

In general, these links tend to be weak, hence, profits are not fully maximised and as a result entrepreneurs are not well motivated to work. It is the strengthening of the spatial linkages for small scale industry development in the Krachi District that forms the subject-matter of this study.

1.3 HYPOTHESES AND OBJECTIVES

Small scale industries by their use of simple technology and dependence on local raw material, can be sited anywhere in the rural areas.

This makes them footloose and less dependent on each other and their environment in terms of supply, production and marketing. Against this background, the research surveyed the present performance of a selected number of small scale industries in the district in respect of their spatial interaction. The purpose of this study was therefore to suggest strategies which will strengthen the spatial linkages of small scale industries for district development. In particular, the study sought to:

- examine the existing spatial linkages among small scale industries in and outside the Krachi District;
- examine on the basis of the spatial linkages, the problems, constraints and potentials of small scale industry development in the district; and.
- suggest strategies for strengthening the spatial linkages of small scale industries for district development.

The hypotheses to be tested are:

i. there are little or no spatial linkages existing among or within small scale industries in Krachi district.

ii. Spatial linkages mostly exist outside the district.

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1.4 THE CONCEPT OF SMALL SCALE INDUSTRY

The concept of small scale industry relate, generally, to small manufacturing activities including primary products processing, handicrafts, construction and personal and repair services (Boapeah 1994:9). However, while this concept is widely accepted the definition of small scale industry varies widely from country to country.

In Pakistan, a small scale industry is defined as 'a manufacturing enterprise that uses no power or employs less than 20 persons (Austin 1981:3). Here the emphasis is on use of energy and number of people employed.

In Bangladesh, any three of the following definitions can apply:

- any industry whether using family and/or hired labour which does not use motive power for any operation and employs less than 20 hired workers;
- an industry that is carried on wholly or mainly by the members of a family either as a whole-time or as part-time occupation;

° any industry whether using family or hired labour which uses motive power for any operation and employs less than 10 hired labour (Austin, 1981:3).

In Ghana, two major definitions may be used to describe small scale industry: one based on capital requirements and the other based on employment size (Boapeah, 1994:9).

The National Board for Small Scale Industries (NBSSI) defines a small scale industry as one whose capital requirements for plant and equipment do not exceed the cedi equivalent of 100,000 United States dollars, while the Statistical Service defines it as one which does not employ more than 29 persons.

The NBSSI even further classifies and defines small scale industry into:

i. micro-industry: an industry employing one to five persons; and

ii. small scale industry: an industry employing 6-29 person.

Yankson (1985) defines small scale industry as any economic unit which is privately owned (in most cases by family), using a very informal type of organization, simple technology and employing a total workforce of 30 persons or less.

In commenting on small scale industry definition Harper (1983) says 'the scale of a business needs only to be defined for a specific purpose and there is no point in attempting to produce a universally or even nationally acceptable standards. Any discussion on definition should be preceded by a very clear understanding of the purpose for which the definition is to be used.

For the purposes of this study, that is based on a rural district in Ghana, the definition by the Statistical Service will be used.

Small scale industries have been described as performing important roles in national and local economies including the following:

i. Small scale industries' simple technologies people can easily understand the process of buying, manufacturing, and selling, thereby assisting the whole rural population to grow accustomed to conditions of life in an industrial society. This will also help the spread of skills and organizational know-how in rural societies.

ii. Small scale industries can use locally available raw material resources, thus strengthening the linkage between producers of raw materials or intermediate inputs and manufacturers of final products.

iii. Small scale industries can easily adopt to changing demands due to the simple structure of their organisations and the limited economic environment in which they operate.

iv. As rural product markets are usually under-developed and small in size, they can be better served by small scale industries.

1.4 RESEARCH METHODOLOGY

Three main methods were used to carry out this study. These are: literature review, field survey design and analysis.

1.4.1 Literature Review

The literature review involved reading around existing literature on the concept of small scale industries, their characteristics and their spatial linkages, their importance in small scale developments.

1.4.2 Survey Design

The multi-stage sampling technique was used for the selection of the sample. This procedure followed a two-stage process. The first stage was the selection of the target settlements, while the second stage was the selection of small scale

industries as the unit of analysis.

For the selection of the settlements, population was mainly used as a criterion. All settlements with population size below 500 were not selected because they lack basic functions.

The district's physical and administrative structure lent itself to the application of the multi stage sampling. It is divided into three sub-districts, namely: Dente, Nchumuru and Oti sub-districts.

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Three levels of settlement hierarchy were used as a basis for selecting the settlements using population as a criterion. The rationale being that because of different infrastructural standards in the settlements, there are variations in the economic activities. Under normal circumstances, the more the population and infrastructure, the more the heterogeneity the settlements are and, hence, the more complex and diverse the activities. This held true for the study area, where the two main urban centres, namely: Kete-Krachi and Dambai had more economic activitie. (SPRING Programme 1994).

The levels of settlements were as follows (SPRING Programme, 1994):

First Level Settlements - all settlements with population above 5,000

Second Level Settlements - all settlements with population between 1,500 - 4999

Third Level Settlements - all settlements with population between 500 - 1,499

A total of nine settlements were selected for the study: three from each level with one coming from each sub-district. Table 1.1 shows these settlements and their respective population sizes. For their spatial distribution please refer to Figure I.

TABLE 1.1: THE SELECTED SETTLEMENTS AND THEIR POPULATION SIZE

SETTLEMENT LEVEL	SUB-DISTRICT	SELECTED SETTLEMENT	POPULATION
1	Dente	Kete-Krachi	7485
1	Nchumuru	Banda	5445
1	Oti	Dambai	6187
2	Dente	Ehiamankyene	1568
2	Nchumuru	Borae No.2	3735
2	Oti	Asukawkaw	1734
3	Dente	Ntewuase	874
3	Nchumuru	Anyinamae	1485
3	Oti	Dormabin	1164

SOURCE: SPRING Programme 1994, Socio-economic Survey, Krachi District

The second stage of the sample selection involved the selection of the type and number of industries from each of the above settlements.

All the nine selected settlements were among those selected by the 1994 SPRING participants during their socio-economic and village surveys (SPRING Programme, 1994). From these two surveys, a total of 804 small scale industries settlements were identified.

For the selection of the individual industries, the following criteria were used:

- since the main occupation of the people in the district is farming (75 percent) (SPRING Programme, 1994), industries which had the potential to contribute to the development of agriculture, were selected.
- all industries which tap the district's natural resources such as the lake, clay deposit.

Generally, small scale industries in rural areas have almost similar characteristics (Boapeah, 1994). Therefore, only 10 percent of the 804 different types of industries identified in the target settlements, were selected. To get a fair representation from each industry, 10 percent of the total number of each kind was selected. The selected industries were classified into four main sectors. These were: Agro-based, Wood-based, Clothing and Earth-based industries.

Table 1.2 gives a summary of the number of industries identified and selected.

TABLE 1.2: IDENTIFIED AND SELECTED SMALL SCALE INDUSTRIES

SECTOR	NUMBER IDENTIFIED	NUMBER SELECTED
AGRO-BASED	456	46
Milling	114	11
Gari processing	134	13
Distillery	64	6
Pito brewing	75	8
Fish smoking	46	5
Basket weaving	23	3
WOOD-BASED	154	16
Carpentry	110	11
Charcoal burning	54	5
CLOTHING	133	13
Dressmaking	133	13
EARTH-BASED	51	5
Pottery	51	5
TOTALS	804	80

Source: SPRING Programme, 1994, Socio-economic Survey

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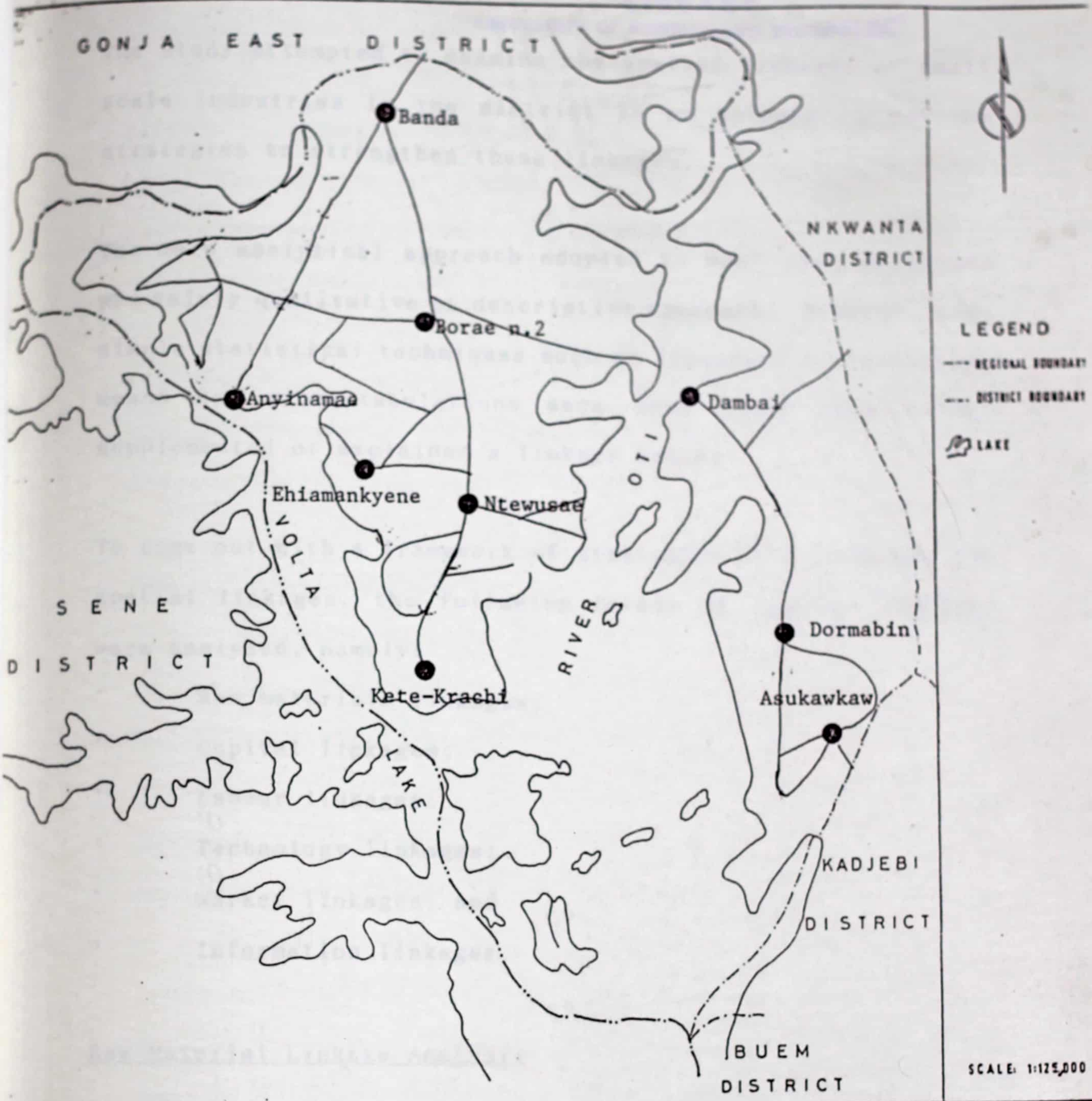

KRACHI DISTRICT STUDY SPRING 1995	SPATIAL DISTRIBUTION OF TARGET SETTLEMENTS	FIGURE 1

1.4.3 Analytical Approach

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The study attempted to examine the spatial linkages of small scale industries in the district in an attempt to develop strategies to strengthen these linkages.

The main analytical approach adopted to meet this objective was mainly qualitative or descriptive approach. However, some simple statistical techniques such as frequency distribution, means and cross-tabulations were used where they either supplemented or explained a linkage better.

To come out with a framework of strategies to strengthen the spatial linkages, the following levels of spatial linkages were analysed, namely:

- Raw materials linkages;
- Capital linkages;
- Labour linkages;
- Technology linkages;
- Market linkages; and
- Information linkages.

Raw Material Linkage Analysis

These were analysed to find out whether the flow of raw material was internal or external for an enterprise's

production. This analysis helped in establishing two types of linkages, Namely: forward and backward linkages.

Forward linkages refer to the sale of outputs of small scale industries to other firms for use as inputs in their production process. Backward linkages refer to purchases of small scale industries from other firms.

The analysis was used to establish the spatial linkages between industry and settlements within which the industries are located as well as settlements outside their locations.

Capital Input Linkage Analysis

Entrepreneurs need capital to start their business or to run it. For small scale industries capital is not always sufficient. Therefore outside sources are required to augment personal capital. It was therefore important to identify these sources as spatial linkages. These external sources include both informal sources, such as, loans from relatives, friends, and customers and formal sources, such as banks. For small scale industries in rural areas, the informal sources are the most important sources of capital, especially working capital (Tadese, 1992:45).

Labour

Labour as an input was analysed to see how mobile it was and how this mobility was spatially linked with industries. Two main types were analysed namely: type of labour used by entrepreneurs in the district and the origin of this labour

Technology

This refers to the machines, tools and equipment needed to produce an item, the production methods, as well as the knowledge about the techniques involved (Dinye, 1992). The analysis included the sources of tools, machines and equipment.

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Marketing of Output

This was analysed to find out how small scale industries were spatially integrated within and outside the district economy system through the sale of their products. The spatial integration of the market into the system is important for the development of small scale industries, because the market is the centre for the dissemination of information especially on innovations and prices.

Information Linkage

For production to be cost-effective, especially for small scale industries in rural areas like the Krachi District, information flow among industries and between the industries and the wider environment, information flow is a 'sine quo non' as it helps to strengthen rural-urban linkages.

1.5 SIGNIFICANCE OF THE RESEARCH

The study aims at identifying and suggesting strategies for strengthening spatial linkages of small scale industries. The findings could therefore be used by the District Assembly or other agencies to:

- assess the number, variety and spatial distribution of the industries;
- formulate policy for establishing micro-industrial estates at the various rural service centres already identified in the district's 15-Year-Development-Plan (SPRING Programme, 1995).

This is expected to have positive effects on the District Assembly as well as the enterprises. With regard to district assembly, the establishment of micro-industrial estates, would make it easier to collect taxes from the entrepreneurs, while on the enterprises side, the idea will help them maximise profit as a result of the agglomeration effect.

1.6 ORGANIZATION OF REPORT

The report begins with an introductory chapter which outlines the problem statement, the hypotheses, the objectives of the study, the research methodology and significance of the research.

Chapter two discusses the theoretical concepts and typology of spatial linkages and their role in promoting small scale industries.

Chapter three discusses the analysis of the spatial linkages of small scale industries in the district.

Chapter four then gives the summary of findings, policy implications of these findings.

Chapter five gives suggestions for strengthening the spatial linkages of small scale industries in the districts and also included some concluding remarks.

CHAPTER TWO

2.0 THE CONCEPT OF SPATIAL LINKAGES AND THEIR IMPLICATIONS FOR SMALL SCALE INDUSTRY DEVELOPMENT

2.1 THE THEORETICAL BASIS OF SPATIAL LINKAGES

Spatial linkages are defined as "patterns of transaction among groups and organisations located in spatially dispersed communities with sufficient threshold size of population to support their own specialised activities". (Rondinelli and Ruddle, 1978:159).

One of the main features of spatial linkage is the concept that development does not take place in isolation. Economic activities have to be coordinated in space, between urban and rural areas. This will enable the evolution of subsistence into commercial farming from simple handicrafts into more specialised processing an manufacturing of scattered and isolated economic activities into nodes of production integrated into a national system of exchange (Rondinelli and Ruddle, 1978: 159). To be able to do this, settlements of various sizes must be linked to each other through a system of physical, economical, social and administrative interactions.

This integrated type of development, especially industrialisaton, is often lacking in most developing countries, where industrialisation tends to be concentrated in

the urban areas to the neglect of the rural areas. Although most decentralisation proposals involve elements of industrial dispersions, and techniques used for implementing industrial dispersion plans include selective licensing, government loans and grants and publicly supported industrial estates, these incentives are very often limited to large, modern industries which bypass the myriad of small scale economic activities already existing in rural areas (Boapeah and Poppe, 1992: 17).

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The outcome of this situation has been the migration of potential entrepreneurs from rural areas to the urban areas. The development of the rural areas are left in the hands of politicians, who, according to Boapeah and Poppe (1992:18), in turn scatter factories widely in villages ill-equipped with transport, public utilities, manpower and entrepreneurship. The opportunity to create an integrated spatial hierarchy or to establish industrial nuclus as a new central place was not considered (ibid 1992: 18). As a result, Darkoh (1975) observed, that Ghanaian industrialisation is characterised by weak and perhaps insignificant development of inter-sectoral and inter-regional linkages (quoted from Boapeah and Poppe, 1992).

This results in an imbalance in the regional or even district economic development as is evident in the disperity in the level of regional economic development in Ghana.

The poorly integrated spatial systems provide very little by way of interaction between villages and market centres for the creation of linkages among activities. The rural periodic markets which are supposed to provide these linkages are often ill-equiped for sufficient interaction.

Considering the economic situation of most African countries including Ghana, the development of rural service centre approach is more plausible. Central places such as small towns (rural centres) which are endowned with a multitude of different economc activities based on linkages to and from agricultural sector could contribute to and enforce rural development significantly (Boapeah and Poppe, 1992: 18).

In line with this selective rural development approach, Johnson proposed the development of existing market towns as rural growth centres (Gove, 1984: 14) and United States Agency for International Development (USAID) under a strategy of integrated rural development formulated a spatial policy for equitable growth. (Rondinelli 1980) which was implemented in various countries as "urban functions in rural development" approach (Boapeah and Poppe, 1992:19).

As a pre-requisite to the development of these centres and indeed the rural areas the physical, economc, technological, social linkages and service delivery linkages should be

developed. These are discussed in section 2.2.

2.2 TYPOLOGY OF SPATIAL LINKAGES

2.2.1 Physical Linkages

These linkages include resource interdependence and man-made transportation networks. Urban and rural communities within a region are integrated by national resource linkages. These include the vegetation, drainage mountains.

Rivers, lake and road transportation network are among the most important linkages for integrating spatial systems because they:

i. reduce travel time and widen the market sphere;

ii. offer greater access to non-agricultural employment;

iii. extend areas of service delivery;

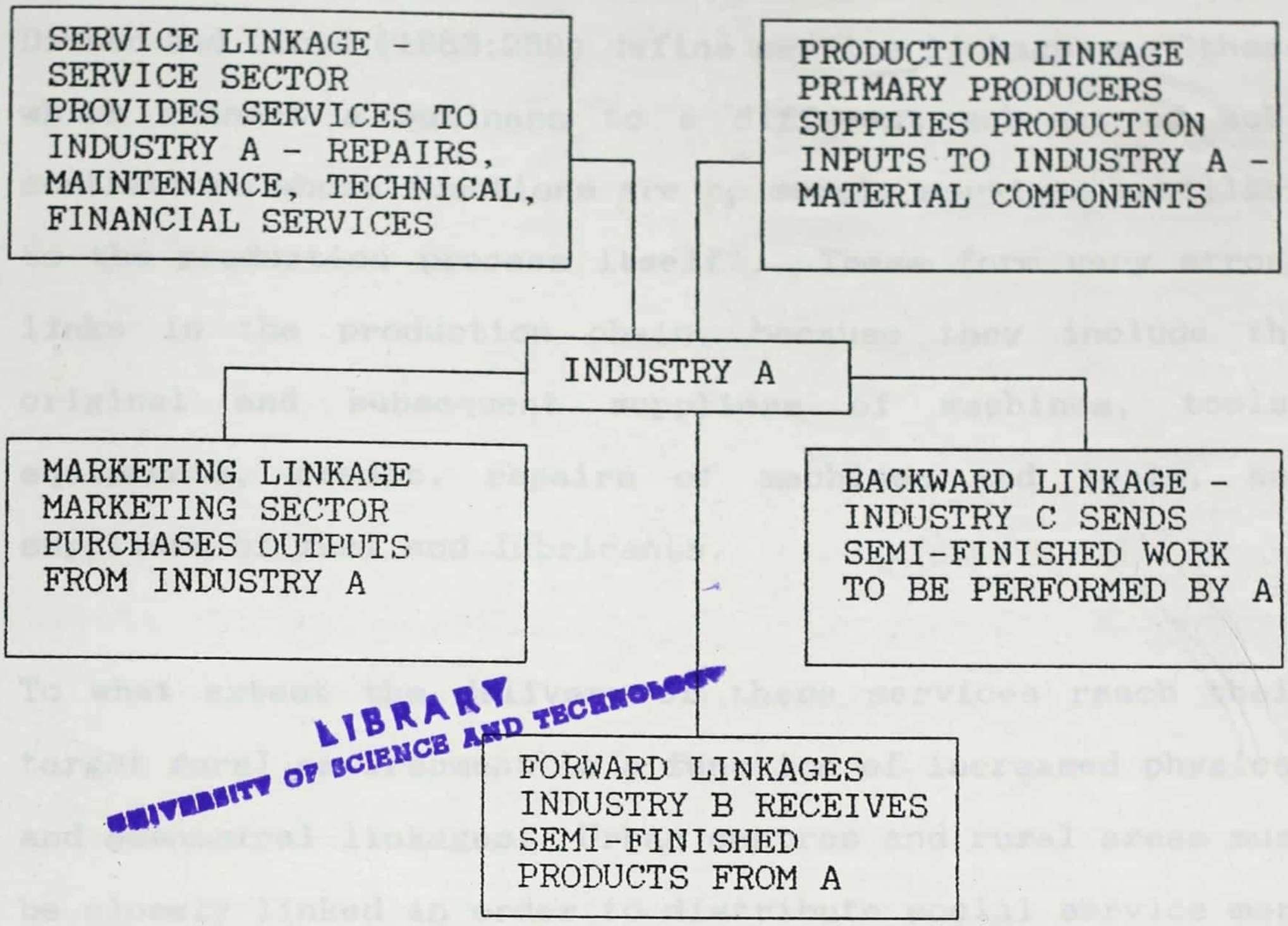
iv. increase interaction among settlements;

v. link production areas to crop collection and distribution centres.

2.2.2 Economic Linkages

In order to promote spatial integration, a set of economic linkages are needed. These are: market network, raw material and intermediate goods flow, capital, forward and backward production linkages. These are presented in Figure 2.

FIGURE 2: THE MAJOR LINKAGES IN A TYPICAL MANUFACTURING INDUSTRY



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Source: Based on Lloyd and Dicken, Location in Space, 1977 with modification by the Author

2.2.3 Production Linkage

This is mainly concerned with the movement of input from one industry to another as part of the production process. Knowledge of existing production linkage among industries within and outside the settlement is important for a basic understanding of how the economy of a given area operates.

2.2.4 Service Linkages

Dicken and Lloyd (1983:289) define service linkages as "those which connect a business to a different sub-set of sub-contractors whose functions are to supply services ancillary to the production process itself". These form very strong links in the production chain, because they include the original and subsequent suppliers of machines, tools, equipments, credit, repairs of machines and tools, and suppliers of fuel and lubricants.

To what extent the delivery of these services reach their target rural environment is a function of increased physical and economical linkages. Urban centres and rural areas must be closely linked in order to distribute social service more widely and to increase the access of rural population to urban amenities.

2.2.5 Market Linkages

Markets are the focal points for a wide variety of social linkages among development centres and between those centres and their rural hinterlands. Markets perform many roles in rural areas. It has been argued that broadening market linkages is a primary force in commercialising agriculture,

diversifying production and expanding the spatial system of exchange. According to Skinner (quoted from Rondinelli and Ruddle, 1978: 160) markets are the starting points for the upward flow of agricultural products and crafts items into higher reaches of the marketing system and also the downward flow of imported items destined for peasant consumptions. In this case, the market is serving as a point around which almost all economic activities revolve.

The combination of transport and market linkages encourage the growth of integrated markets, expanding patterns of exchange of basic commodities and ensuring broader geographical access to goods and services (ibid: 163). In many African countries, economic exchange functions grew out of traditional social gatherings (Rondinelli 1978:166). The African markets remain meeting place for sports and competition, while in Asia and Latin America, they contain a variety of social facilities - restaurants, bars, baths, temples, churches, attracting people from villages not only to exchange goods and services but also to engage in recreation and meet friends and kin (ibid).

As far as the assessment of the African market is concerned, the research would like to differ in this respect. While the statement on the African market would have been applicable twenty years ago, it is not so now. Present day markets whether rural or urban are now run on economic basis where

most social service are rendered.

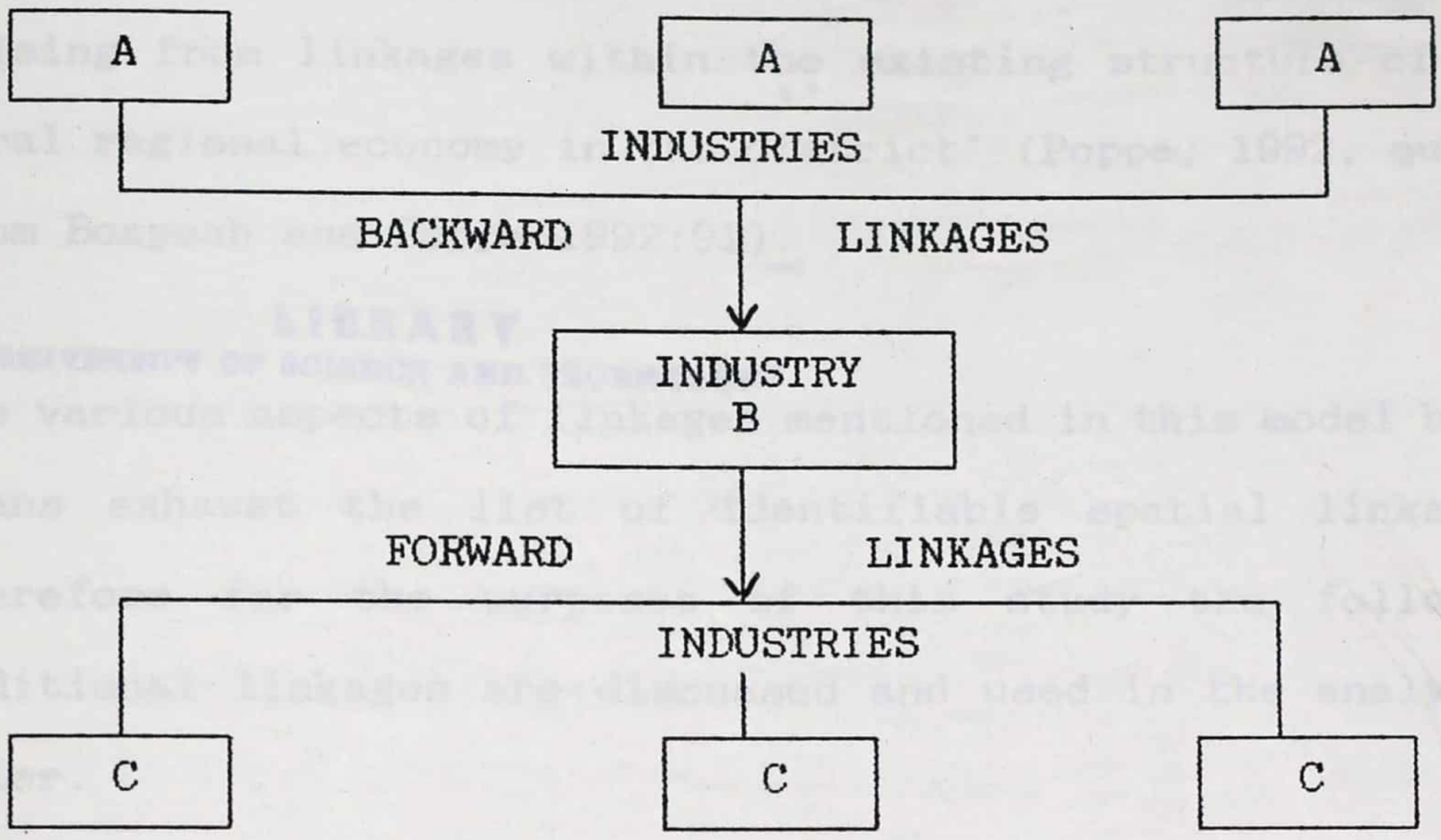
The focus of this study is on the organization of the market for the maximum benefit of small scale industries. Markets are important because they bring together buyers and sellers and they serve as centres for the dissemination of a variety of information including market price trends and innovations. If markets are well integrated into the economic activities of a district, small scale entrepreneurs would be motivated to produce because the market is part of the production linkage. For small scale industries, in rural areas, the strengthening of the market spatial linkages will also strengthen their productive capacity by providing ready markets for outputs as well as sources of input.

2.2.6 Forward and Backward Linkages

Forward linkage occurs in industries which produce goods which become inputs into other industries. Backward linkage occurs in industries which make use of inputs from other industries. However, whether a linkage is a forward or a backward one depends on its position in the production process. (Boapeah and Poppe, 1992:91). Hence, where a particular economic activity produces the inputs needed by another economic activity, then the former is a backward linkage to the latter (ibid:91). The concept of forward and backward linkages can

be illustrated as shown in Figure 2.

FIGURE 3: BACKWARD AND FORWARD LINKAGES



Source: Extracted from Poppe 1992 'The Role of Small Scale Rural Enterprises in District Development in Planning as a Dialogue.

Industry A produced the inputs needed by industry B. In this situation, industry A is a backward linkage to industry B. If, say industry C processed or used further the output manufactured by industry B, then industry C is a forward linkage for industry B. Assume a farmer supplies maize to a milling industry and the industry after milling further supplies maize flour to the `kenkey ´ or ´banku´ maker. In this case, the milling industry is backwardly linked to the farmer as supplier and forwardly linked to the buyer - kenkey

or banku maker.

At the district level, `the adoption of local linkage approach enables the district planner to identify productive activities arising from linkages within the existing structure of the rural regional economy in the district' (Poppe, 1992, quoted from Boapeah and Poppe 1992:91).

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The various aspects of linkages mentioned in this model by no means exhaust the list of identifiable spatial linkages. Therefore for the purposes of this study the following additional linkages are discussed and used in the analysis: later.

i. technological linkages;
ii. information linkages;
iii. social linkages; and
iv. labour linkages.

2.2.7 Technological Linkages

Technology of any kind or level is the medium through which production is carried out. Therefore whether it is in the form of equipment, procedure or method of production, it must be integrated spatially into the production process. The reason, according to Rondinelli and Ruddle (1978:162) is that no single technological innovation will promote social and

economic transformation in developing nations such as like Ghana, unless it is appropriate to local needs and conditions and linked to both higher and lower levels of technology and related inputs.

In small scale industry, technological linkage take various forms including:

i. sharing knowledge acquired through training with other entrepreneurs;

ii. providing or making available tools and equipment by one industry to another;

iii. specialists in one production technique may be used effectively by other entrepreneurs by giving them semi-finished products to put finishing touches to them; and

iv. training through the traditional apprenticeship method by which technology in rural districts can be diffused into industrial activities.

These spatial linkages culminate into what has become commonly known as technology transfer. This is defined as "the existence of certain types of technology known elsewhere outside a specific locality that can be introduced into it to enable certain new small scale industries to be established or for the situation of the existing ones to be improved" (Dinye and Hennings, 1993:17).

This idea of technology choice within or outside small scale industries introduced the concept of appropriate technology as earlier remarked. This refers to a technology that involved the most economic way in which a particular type of industry can execute the production of a particular product. This approach to the provision of technology for small scale industries is appropriate for rural districts, like the Krachi District, whose entrepreneur's economic base is not strong enough to compete with modern, sophisticated machinery or tools.

2.2.8 Information Linkages

For production to be cost-effective, especially for small scale industries in rural areas, information flow among industries is a `sine qua non'. Within the industries a free flow of information puts entrepreneurs abreast with:

- the latest production technology - machine, tools;
- the current prices of both basic raw materials and finished products;
- where to sell products;
- which industry within and outside the settlement could it exchange inputs and outputs with;
- Above all, information flow helps to strengthen rural-urban spatial linkages.

2.2.9 Social Linkage

In a broader sense, social linkages are closely connected with the development of market towns because as stated in section 2.2.3, markets, are the focal points for a wider variety of social linkages.

With market expansion and increasing commercialization of agriculture, periodic markets evolve into permanent places of exchange, daily markets displace smaller, infrequent exchange points and diffusing social linkages promote increasing social and spatial integration. (Rondinelli and Ruddle,1978: 164)

Widening market areas also extend the spatial range of social interaction steadily integrating smaller clans, communities and villages (ibid: 164). With well developed periodic markets, farmers are provided with the opportunity to interact with villagers from larger settlements.

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2.2.10 Labour Linkages

Labour is the human input into the production process. It is the element that does the linking at various levels. The other spatial linkages may be available in relative abundance, but if they are not properly coordinated production might not proceed as anticipated. It is therefore a key input that

needs proper examination, especially in the areas of

i. flow of raw materials;

ii. flow of intermediate goods; and

iii. flow of technology and information.

2.3 IMPLICATIONS OF FUNCTIONAL LINKAGES FOR SMALL SCALE INDUSTRIES DEVELOPMENT

From the foregoing discussions on spatial linkages, it can be seen that in essence, they are the 'live line' for small scale industry development. This implies that they should be strengthened so as:

- to reduce the cost of production by bringing primary producers in close contact with small scale manufacturing industries within and outside settlements where they are located;
- to be able to use appropriate technology in preference to high level imported technology, with all its attendant problems. One of the ways it can be done is by technology transfer through the traditional apprenticeship system;
- to develop and strengthen the internal market so that small scale products can easily be sold and raw materials acquired at reasonably low cost. This will have a positive effect on production cost and ultimately on consumer price;
- to develop a free flow of information so that

entrepreneurs are kept abreast with current events on prices, innovations and source of raw materials;

- to improve social relations which are a major source of working capital either in the form of cash, or raw materials, or finished goods. This linkage is very important in rural areas where the more formal lending institutions such as banks, are non-existent;
- to improve the labour input situation by: improving the renumeration rates and the provision of training facilities especially on local technology so as to improve on the already existing ones in such industries as pottery, fish smoking, gari processing;
- to develop the internal forward and backward linkages through equipment sharing. This can be made cost-effective by bringing identical industries as close together as possible;
- to improve on the bargaining power through the revitalisation of the already existing trade associations or the formation of new ones.

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CHAPTER THREE

3.0 ANALYSIS OF THE SPATIAL LINKAGES OF SMALL SCALE INDUSTRIAL ACTIVITY IN THE KRACHI DISTRICT

3.1 INTRODUCTION

This chapter deals with the analysis of the data collected in the survey of small scale industries in the Krachi District. As a background information a profile of the district is first presented.

The small scale industries are analysis in terms of their nature, characteristics of the entrepreneur and the spatial linkages with respect to capital, labour, raw materials, services and product marketing. The problems, constraints and potentials are then examined.

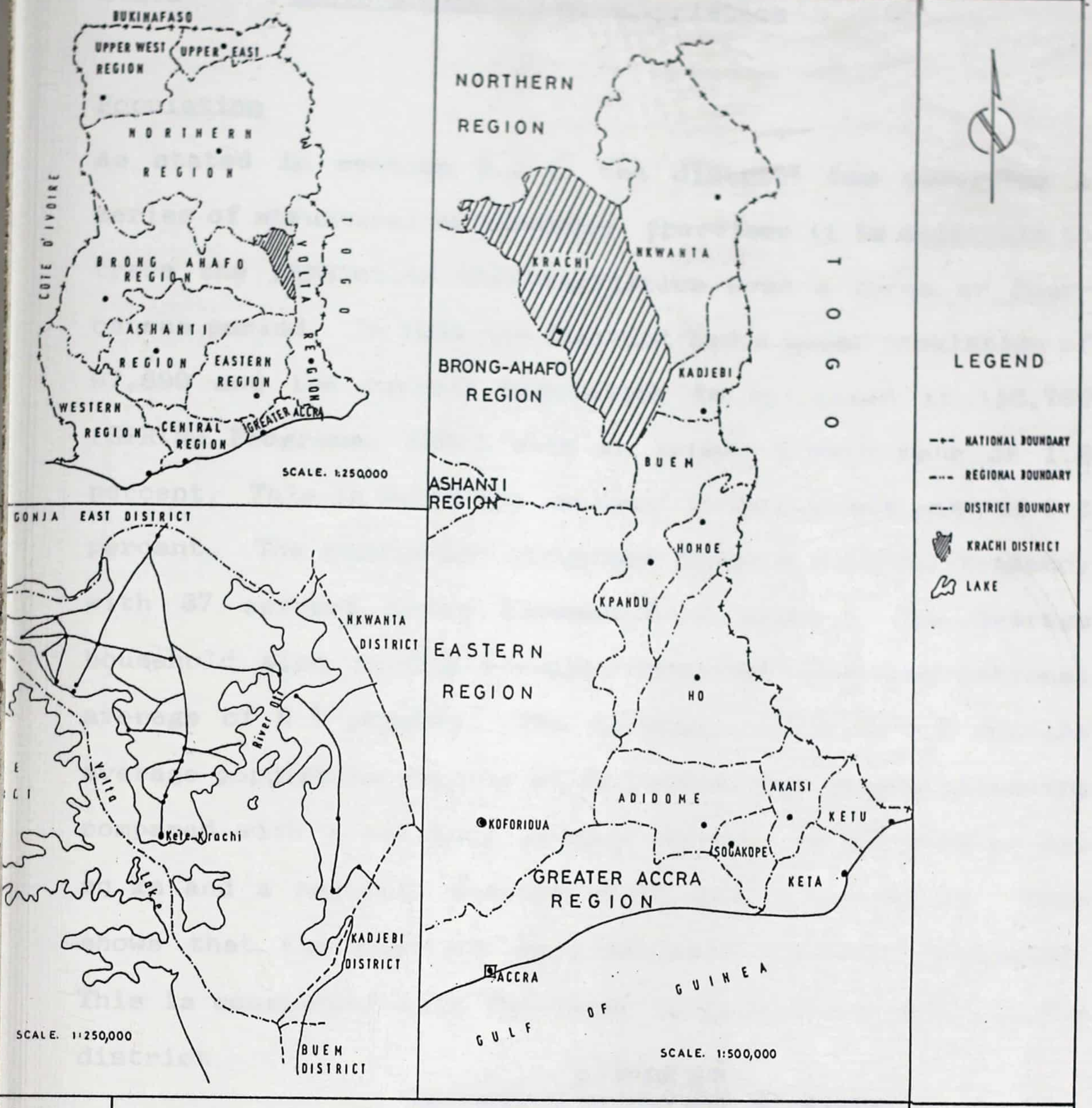
3.2 THE DISTRICT PROFILE

3.2.1 District Background

Krachi was a district government seat in the colonial times. Part of it was settled by the Germans who had departmental stores in Kete-Krachi, but were later driven away by the British (Kokor 1975:16).

Since independence in 1957, the size and geographical area of the district has undergone various changes. However, the marked physical and socio-economic changes in the structural characteristics of the district occurred in the 1960s with the construction of the Akosombo dam and the subsequent creation of the largest man-made lake in the world - the Volta Lake.

The formation of this lake led to the dislocation of many settlements within the district. The people had to be resettled away from their original ancestral homes and now had to contend with 3-4 acres of land allocated to them by the Volta River Authority. This has never been updated to match with the increase in population. The lake also caused great disruption in the existing transportation system, isolating the district from the major urban centres of the south. It lies within the basins of the Volta and its two main tributaries - Daka and Oti, and is defined by the 7° 40′N and 8° 20′N parallel, and 0° 12′E and 0°W longitude. It is one of twelve districts making up the Volta Region and is bounded in the north by Gonja East District, in the east by Nkwanta and Jasikan Districts, in the south by Buem District and in the West and south-west by Sene District (refer to Figure 4).



DISTRICT
TUDY
NG 1995

KRACHI DISTRICT IN THE NATIONAL AND REGIONAL CONTEXT

FIGURE 4

3.2.2 Socio-Economic Characteristics

Population

As stated in section 3.2.1, the district has undergone a series of structural adjustments, therefore it is difficult to trace the population characteristics over a three or four-census period. In 1984 the district had a total population of 97,690 and its current population is estimated at 116,769 (SPRING Programme 1994) with an annual growth rate of 1.8 percent. This is below the national annual growth rate of 2.6 percent. The population structure shows a youthful tendency with 37 percent being between 5-19 years. The average household size is 8.3 persons, compared with the national average of 5.2 persons. The occupancy rate is 3.2 and the average population density of 48 persons per square kilometre compared with a national average density is 52 persons per sq.km and a regional density of 78 person per sq.km. This shows that the district is relatively sparsely populated. This is consistent with the large emigration recorded in the district.

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3.2.3 Occupational distribution of population

The occupational distribution of population in the district is summarised in Table 3.1. It shows that 74.2 percent of the economically active labour force is engaged in farming. This

is followed by trading with 11.2 percent and then small scale industry with 4 percent and then fishing four percent. Since the small scale industries are the major concern of this research more will be said about their characteristics later.

TABLE 3.1: OCCUPATIONAL DISTRIBUTION OF POPULATION

OCCUPATION	PRIMARY OCCUPATION	PERCENTAGE	SECONDARY OCCUPATION	PERCENTAGE
Farming	1311	74.2	195	54.3
Trading	197	11.2	72	20
Industry	73	4.1	37	10.3
Fishing	72	4.0	30	8.4
Teaching	54	3.1	1	0.3
Civil Servants	28	1.6	1	0.3
Driving	19	1.1	9	2.5
Livestock rearing	12	0.6	14	3.9
TOTALS	1766	100.0	359	100.0

Source: Extracted from SPRING Programme 1994 Socio-economic Survey

The pattern of occupational distribution of population into the secondary occupation follows the same trend as for the primary. As large as 54.3 percent of the active population is engaged in farming as a secondary occupation, while 20 percent is engaged in trading, 10.3 percent in small scale industrial activities and 8.4 percent in fishing

In general, trading seems to be one of the major economic activities in the district. This is substantiated by the numerous organised weekly markets in the district. If properly integrated and spatial linkages identified and strengthened, these markets could be harnessed to the advantage of small scale industries in the district.

3.2.4 Spatial Distribution of Functions/Services

A total of 44 functions were identified in the district. These were used to analyse the settlement hierarchy and spatial levels of development (SPRING Programme 1994). Table 3.2 summarises the functions/services possessed by the settlements in the district. It reveals that no settlement in the district had all the functions. Kete-Krachi, the district capital scored the highest, having 80 percent of the functions. It was observed that 94.2 percent of the settlements in the district had less than 50 percent of the identified functions. This means that the majority of the settlements are unable to perform the functions of central places.

TABLE 3.2: PERCENTAGE SHARE OF FUNCTIONS IN SETTLEMENTS

PERCENTAGE SHARE OF FUNCTIONS	NUMBER OF SETTLEMENTS	PERCENTAGE
100	0	0
80 -99	1	1.96
60 - 79	1	1.96
50 - 69	1	1.96
Less than 50	48	94.2
TOTALS	51	100

Source: Extracted from SPRING 1994 Socio-Economic Survey

Using the functions performed by each settlement, a settlement hierarchy was established. Five levels of settlement hierarchy were identified in the district. Level one is the settlement with the highest number of functions, while level five is the settlement with the least number of functions. Table 3.3 summarises the settlement functional hierarchy in the district.

TABLE 3.3: HIERARCHY OF SETTLEMENTS IN KRACHI DISTRICT

HIERARCHY/LEVEL	NUMBER OF SETTLEMENT	PERCENTAGE OF SETTLEMENTS
1	1	2
2	1	2
3	7	14
4	15	29
5	27	53
TOTAL	51	100

Source: Extracted from SPRING 1994 Socio-Economic Survey

In addition to the settlement functional hierarchy, the levels of spatial distribution of development were also examined. The centrality index is the sum total of the weights of all the functions in a settlement. This shows the degree to which each settlement provides functions for people in other areas.

Since Kete-Krachi had the highest number of functions, its centrality index was used as a common denominator. Settlements with centrality index of 1000 and above formed level 1, settlements with centrality indices between 500 and 999 formed level 2, level 3 comprises settlement with centrality index between 100 and 499. The 4th level settlement range from 20-99 and level 5 consisted of centrality index. This is depicted in Table 3.4.

TABLE 3.4: SPATIAL LEVELS OF DEVELOPMENT IN KRACHI DISTRICT

LEVEL OF SPATIAL DEVELOPMENT	NUMBER OF SETTLEMENT	PERCENTAGE OF SETTLEMENTS
1	1	1.96
2	1	1.96
3	7	13.73
4	13	25.55
5	29	56.80
TOTAL	51	100

Source: SPRING Socio-economic Survey 1994

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The analysis revealed that the majority of the settlements (82.35 percent) lack most of the functions and therefore had to depend on other settlements for these functions/services. This shows that the settlements are not well integrated.

3.2.5 Institutional Characteristics

The district assembly is the highest political and administrative organ in the district. Two-thirds of the assembly members are elected while the remaining one third is appointed.

The district chief executive, who is the government representative, is nominated by government and approved by two third of the district assembly members.

The district has an executive committee drawn from the assembly members. This committee serves as the executive and administrative arm of the district assembly. There are five main sub-committees, These are:

i. Economic Development Sub-Committee
ii. Technical Infrastructure Sub-Committee
iii. Justice and Security Sub-Committee
iv. Finance and Administrative Sub-Committee
v. Social Services Sub-Committee.

The district administration is headed by the district coordinating director. He is a civil servants and works under the district chief executive.

Some non-governmental organizations operate in the district. These include

- 31st December Movement
- A.D.R.A
- Church Organizations

One of these church organizations - The Roman Catholic Church, runs two of the three vocational and technical schools in the district.

3.2.6 Infrastructural Characteristics

The district is fairly well served with roads. It has a total of 347.5km of feeder roads and 142.5km of secondary trunk roads. Conditions of the roads are poor with less 5km of tarred road in the district. Transport services are provided mainly by private individuals. The Volta Lake Transport Company operates two ferry transport services at Kete-Krachi and Dambai.

The district has 53 nursery schools, 144 primary schools, 39 Junior Secondary Schools, 3 vocational schools, 3 Senior Secondary Schools, and one Teacher Training College at Dambai.

The literacy rate is about 40 percent with an average School Participation Rate of 40.5 percent.

There is only one government hospital at Kete-Krachi, 11 health posts, 8 primary health clinics, one private maternity and a mission clinic at Dambai.

About 58.6 percent of the population depend on rivers/streams and lake for drinking. There is therefore high incidence of water-borne diseases - guinea worm, bilharzia and diarrhoea (SPRING 1994 Socio-economic Survey).

About 61.3 percent of the people use firewood as source of energy while 22.7 percent use charcoal and 14 percent use kerosine.

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There is only one post office at Kete-Krachi with two postal agencies at Dormabin and Asukawkaw. Owing to the lake, communication with the outside in terms of postal service is very minimal.

3.3 THE NATURE OF SMALL SCALE INDUSTRIES IN THE DISTRICT

3.3.1 Introduction

This section examines the nature of the small scale industries in the district, sector by sector. The characteristics of each unit in each sector are discussed.

3.3.2 Agro-based Industries

These industries constituted 57.9 percent of all the selected industries as indicated in Table 3.5. This high percentage was due to the fact that more than 75 percent of the population in the district still depend on agriculture (SPRING Programme Socio-economic Survey, 1994). The sector was made of the following individual units.

3.3.2.1 Grain Milling

This is the processing of grains for local consumption. In the study area, the most common grains identified were rice, maize, guinea corn and millet. Since cereal constitutes the major diet of the Ghanaian society, this industry is therefore of utmost importance. The unit constitute 14.7 percent of the sector total of 57.9 percent.

However, it was plagued by two major problems. Firstly, there are two many grinding mills to service the population, hence, it was observed that most of these mills were under-utilized. Secondly, 70 percent of the operation cited high cost of fuel and lubricants, because only Kete Krachi is supplied with electricity. The others depended on privately owned diesel motor driven plants.

TABLE 3.5: SECTORAL DISTRIBUTION OF SMALL SCALE INDUSTRIES IN THE SELECTED SETTLEMENTS

TYPE OF INDUSTRY	NUMBER	PERCENT
AGRO-BASED	(466)	(57.9)
Milling	118	14.7
Gari processing	134	16.6
Distillery	69	8.6
Pito brewing	79	9.8
Fish smoking	40	5.0
Basket weaving	26	3.2
WOOD-BASED	(143)	(17.8)
Carpentry	89	11.1
Charcoal burning	54	6.7
CLOTHING	(170)	(21.3)
Dressmaking	170	21.3
EARTH-BASED	51	(3.0)
Potter	51	(3.0)
	805	

Source: Author's Field Survey, April 1995

3.3.2.2 Gari processing

This industry is dependent on the availability of its only raw material namely: cassava. Cassava thrives well in a savannah vegetation and since Krachi District is mostly covered by savannah, the industry was reported to be doing well here.

Formerly, the process involved in the industry was slow, but with the introduction of the cassava milling machine and dough pressers, work has been made much easier.

Its main product namely: gari forms one of the important food items not only in the district, but in most parts of the country.

3.3.2.3 Distillery

The industry involved the fermentation of palm wine. However, as was reported by one-third of the respondents, sugar, yeast and water were also used. The fermentation period varies from 10 to 14 days. The fermented concoction is then boiled and the water vapour condensed. This is then collected and used as local gin.

This gin was found to be in high demand as a close substitute for imported gin. For the one-third respondents who used

sugar and water, high cost of these raw materials because of the bad roads was a major problem. The unit constituted 8.6 percent of the sector total.

The respondents reported that except for the drums and other containers, most of the tools like pipes were forged within the settlements.

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3.3.2.4 Pito Brewing

This industry brewed local beer from either guinea corn or millet. It was found to be carried out by women only. These two raw materials (guinea corn and millet) were important cereals grown in the savannah zone of West Africa.

Since the final product namely; pito is an effective substitute for beer, and considering the alarming rate at which the prices of alcoholic beverages are escalating, the industry has the prospect to continue for years to come.

The industry accounted for 9.8 percent of the sectoral total. The raw materials were easily got within settlements.

3.3.2.5 Fishing Smoking

This activity was carried out by women living along the coastal settlements.

The industry preserves fish by smoking and was used as a substitute for freezing the fish, because as at the time of carrying out this study, only Kete-Krachi had electricity.

Its raw material fish and tools: baskets were got within the district and finished products were reported to be disposed within the district.

3.3.2.6 Basket Weaving

The industry made baskets of various kinds and sizes for both local and outside markets. About 75 percent of its raw materials namely: ridge of palms and rope, were locally obtained.

It contributed 3.2 percent to the agro-based sector.

3.3.3 Wood-based Industries

Only two wood-based industries namely: carpentry and charcoal burning were identified in the district. Together, they

constitute 17.8 percent of the total industries studies. This was a relatively high percentage, considering the fact that the district lies in the savannah zone so that the carpentry industry depended exclusively on wood imported from other regions.

3.3.3.1 Carpentry

The new material: boards of various sizes, came from outside the district and it was reported that all its end products: chairs, beds, tables, desks were sold to the local markets.

Because of the average high cost of these products, there was a high concentration of the entrepreneurs in the urban centres of Kete-Krachi and Dambai.

3.3.3.2 Charcoal Burning

It was reported that this industry was at loggerhead with the District Department of Forestry because of its high demand for wood. Its product, charcoal was used for both local and outside consumption.

3.3.4 Clothing

The industry comprises tailoring (for male and seamstressing (for female). For the purpose of this study, the two are referred to as dress making.

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As Table 3.5 shows, this sector was one of the most popular sectors in the district especially among the females.

The industry had the potential to be a `safe haven' for the many school drop outs between junior secondary school and senior secondary school. The sector contributed 21.1 percent of the total of all the small scale industries studied.

The entrepreneurs got their raw materials from customers as well as buying from other settlements mostly Accra and Kumasi.

3.3.5 Earth-based Industry

The only earth-based industry found in the district was pottery. It constituted only 3.2 percent of all the small scale industries in the selected settlements. It has a high chance of survival because of the abundant clay deposit in the district. Secondly, its final products, clay pots were in high demand in the local market.

3.4 ENTREPRENEURIAL CHARACTERISTICS

This section of the analysis discusses the key player in small scale industrial development, the entrepreneur. The first part examines the nature of enterprise ownership in the district. This is followed by a discussion of sex, age, educational and professional background. The last part discusses the factors which have affected the location of the industry.

3.4.1 Ownership Structure

Table 3.6 revealed that there were four forms of ownership structure of small scale industries in the district. These were sole proprietorship, family ownership, partnership and cooperative.

The most dominant form of ownership was found to be sole proprietor. This is a form of ownership where the industry is owned and managed by a single person. In the district, this accounted for 80.0 per cent of the total number of respondents. The situation was common to all the industries surveyed. For instance, out of the 46 agro-based industries surveyed, 38 (that is 82.6%) were under sole proprietorship, in the wood-based industry, it was 11 out of 16 respondents while in the clothing industry it was 8 out of 13 respondents.

TABLE 3.6: OWNERSHIP STRUCTURE BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO. INTERVIEWED	TYPE OF OWNERSHIP			
		SOLE PROPRIETOR	FAMILY OWNED	COOPERATIVE	PARTNERSHIP
Milling	11	9	2	-	-
Gari Processing	13	10	1	2	-
Distillery	6	4	1	-	1
Pito brewing	8	8	-	-	-
Fish smoking	5	4	1	-	-
Basket weaving	3	3	-	-	-
Carpentry	11	8	1	-	2
Charcoal burning	5	5	-	-	-
Dress making	13	8	2	1	2
Pottery	5	5	-	-	-
TOTAL No.	80	65	8	3	5
TOTAL %	100.0	80.0	10.0	3.8	6.2

Source: Author's Field Survey, April 1995

There are many limitations to this form of ownership, the most important being its resource limitations, especially starting capital. This limited resource base coupled with its inability to raise capital from the more formal external institution like banks, makes its expansion prospects limited.

The second form of business ownership was family ownership. This accounted for 10.0 per cent of the total number entrepreneurs surveyed. This was mostly found in the milling, gari processing, distillery, fish smoking, carpentry and dress

making industries.

The third form of business ownership was the partnership. In the study area, this constituted 6.2 per cent of all the industries surveyed. It was found to be common among the industries which need high initial capital such as distillery, carpentry and dress making (Boapeah, 1994:136). One advantage this form of ownership has is its ability for members to mobilise capital from more formal banking institutions because banks prefer dealing with groups rather than individuals.

The fourth form of business ownership was cooperative. This constituted only 3.8 per cent of the total number of industries surveyed. It was found in the gari processing and dress making industries. The women in the gari processing industry were mostly members of the 31st December Womens Movement

3.4.2 Distribution of Industry by Sex

One of the findings revealed in this study is the strong and typical sex association with certain types of industries. Table 3.7 shows the distribution of the various small scale industries according to sex of entrepreneurs.

TABLE 3.7: DISTRIBUTION OF SMALL SCALE INDUSTRIES BY SEX AND EDUCATIONAL BACKGROUND

TYPE OF INDUSTRY	NO. INTERVIEWED	MALE	FEMALE	EDUCATIONAL BACKGROUND				
				NONE	PSL	MSL	SSS	V&T.S
Milling	11	11	-	5	1	3	1	1
Gari processing	13	-	13	6	2	4	-	1
Distillery	6	6	-	-	-	4	2	-
Pito brewing	8	-	8	8	-	-	-	-
Fish smoking	5	-	5	3	-	2	-	-
Basket weaving	3	3	-	1	1		-	1
Carpentry	11	11	-	1	-	8	1	1
Charcoal burning	5	2	3	4	-	1	-	-
Dress making	13	6	7	1	4	7	-	1
Pottery	5	-	-	4	1	-	-	-
TOTAL NO.	80	39	5	33	9	29	4	5
Z	100.0	48.7	51.3	41.3	11.3	36.3	5.0	6.1

PSL = Primary School level, MSL = Middle School level, SSS = Senior Secondary School, V & T = Vocational and Technical School

Source: Author's Field Survey, April 1995

While milling was found to be exclusively male dominated, gari processing was a sole female activity. There were only two industries with mixed proprietorship namely: charcoal burning and dress making. The survey revealed that more women (51.3 per cent) were engaged in small scale manufacturing industries than men.

The study revealed that as high as 41.3 per cent of the entrepreneurs interviewed never had formal education, while 36.3 per cent attained middle school level and 11.3 per cent ended their primary school level.

Only 6.1 per cent went to vocational and technical schools and five per cent went up to senior secondary school level. This low educational level of the entrepreneur has implication for the continuity of the business as well as injection of innovations into the production process. Since a high percentage of the entrepreneurs are illiterate, records of income and expenditures were not kept. Therefore it would be difficult to track the progress of the business over the years. Secondly, in the event of the death of the entrepreneur, who ever inherits the business would have to start a fresh. There is therefore the need for some form of education and training for entrepreneurs in the district.

3.4.3 Professional Qualification of Entrepreneur

The entrepreneur may be described as the one who perceives needs, conceived goods or services to satisfy the needs, organise the factors of production and creates and markets the products (Loucks,1988, quoted from Boapeah and Poppe, 1992:43). He therefore performs the leading role in the production process and stands in the centre of all linkages

especially in the rural economy like that of the Krachi District. There is therefore the need that he is technically trained to enable him perform these functions.

Table 3.8 provides information on the different types of entrepreneurial training by type of industry.

TABLE 3.8: PROFESSIONAL QUALIFICATION OF ENTREPRENEURS BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO. INTER-VIEWED	VOCATIO-NAL AND TECHNICAL	APPREN-TICESHIP	FAMILY
Milling	11	1	6	4
Gari processing	12	1	2	10
Distillery	6	-	6	-
Pito brewing	8	-	6	2
Fish smoking	5	-	1	4
Basket weaving	3	1	2	-
Carpentry	11	1	10	-
Charcoal burning	5	-	1	4
Dress making	13	1	12	-
Pottery	5	-	3	2
TOTAL NO.	80	5	49	26
TOTAL %	100.0	6.3	61.2	32.5

Source: Author's Field Survey, April 1995

The Study revealed that 75 (93.7 per cent of the 80 entrepreneurs interviewed never went through the formal structured training course. Out of this percentage, 32.5 per cent received the usual informal instructions given by the elders at home during their normal house duties. This was more prevalent in the traditional industries which did not need much skills such as gari processing, fish smoking and charcoal burning.

The remaining 61.2 per cent of the entrepreneurs received their training through the apprenticeship system. The entrepreneurs who received this type of training were mostly those in the milling, distillery, pito brewing, carpentry and dress making industries.

The apprenticeship training involves a young person serving a master craftsman or proprietor for a given length of time in order to learn a trade (Boapeah and Poppe 1992: 44). This training gives an -on-the-job training because the apprentice receives work and instructions from the master. It is a convenient method since the apprentice is not under pressure to get a certificate as is usually the case in the more formal training.

Only 5 out of the 80 entrepreneurs interviewed (6.3 per cent) reported having gone through the formal, vocational and

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Only 5 out of the 80 entrepreneurs interviewed (6.3 per cent) reported having gone through the formal, vocational and

technical training. This showed a lack of adequate training facilities in the district.

Field investigation showed that the district has only three privately owned, ill-equipped vocational training institutions.

3.4.4 Place of Training

For a more meaningful integrated rural industrial development to take off, the availability of training facilities within minimum accessibility is a sine qua non. Analysis of the place of training will help in establishing the spatial l inkages existing in the industries.

Table 3.9 shows the distribution of place of training of those entrepreneurs who reported having had training.

TABLE 3.9: PLACE OF TRAINING

TYPE OF INDUSTRY	NO. INTERVIEWED	WITHIN DISTRICT		OUTSIDE DISTRICT
		WITHIN SETTLEMENT	OUTSIDE SETTLEMENT	
Milling	7	4	2	1
Gari Processing	3	2	1	-
Distillery	6	-	4	2
Pito brewing	6	3	1	2
Fish smoking	1	-	-	1
Basket weaving	3	1	-	2
Carpentry	11	3	1	7
Charcoal burning	1	1	-	-
Dress making	13	7	1	5
Pottery	3	2	-	1
TOTAL NO.	54	23	9	22
TOTAL %	100.0	42.6	16.7	40.7

Source: Author's Field Survey, April 1995

Two main places of training were identified namely: within the district and outside the district.

Out of a total of 54 entrepreneurs who received formal training, 32 (59.3 per cent) received their training within the district. Of this number 42.6 per cent received their training within the settlement, while 16.9 per cent received their training outside the settlement where the industry is presently located. A total of 22 (40.7 per cent out of the 54, received their training outside the district.

The linkage was found to be strongest within the settlement. where industry is located. However, it was also relatively strong (40.7 per cent) with settlements outside the district. This can be attributed to the inadequate training facilities in the district as was noted in section 3.4.3.

The industries which showed strong spatial linkage outside the district were carpentry and dress making. The training facilities for these industries were found to be very limited.

3.4.5 Locational Factors by Type of Industry

From the analysis of the survey data, three major factors were reported to have affected the location of small scale industries in the district. These were: personal reasons, nearness to market and availability of raw materials. The responses were analysed according to type of industry as shown in Table 3.10. Personal reasons are non-economical and included such reasons as birth place of entrepreneur, to take care of ageing parents.

TABLE 3.10: LOCATIONAL FACTORS BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO. INTER-VIEWED	PERSONAL REASONS	AVAILABILITY OF RAW MATERIALS	NEAR-NESS TO MARKET
Milling	-	-	-	-
Gari processing	11	3	2	6
Distillery	13	5	8	-
Pito brewing	8	6	-	2
Fish smoking	5	6	1	2
Basket weaving	11	22	1	-
Carpentry	5	4	-	-
Charcoal burning	13	-	3	7
Dress making	13	4	1	2
Pottery	5	4	1	8
TOTAL NO.	80	32	18	30
TOTAL %	100.0	40.0	22.5	37.5

Source: Author's Field Survey, April 1995

It was observed that personal reasons and nearness to market dominated the locational factors. They constituted 40 per cent and 37.5 per cent of the respondents respectively

Nearness to market found credence in the industries whose products needed population with high purchasing power such as carpentry, dress making, milling and distillery. Therefore, a high proportion of these are located in the urban centres of Kete-Krachi and Dambai.

Personal reasons embody various factors such as historical: entrepreneur's birth place or home town, cultural: entrepreneurs wanted to be close to parents and take care of them at old age, and social: husbands of entrepreneurs live in the settlements. For instance, six out of the eight respondents in the pito brewing, being women, cited marriage as the reason for locating their industry at the present settlement.

Availability of raw material ranked third, constituting 22.5 percent of the respondents. This was associated with the gari processing industry, in response to the bulkness of its raw material - cassava. This was followed by the charcoal burning industry, whose raw material namely: wood, loses weight in the course of production.

3.5 ANALYSIS OF SPATIAL LINKAGES OF SMALL SCALE INDUSTRIAL ACTIVITIES IN THE KRACHI DISTRICT

3.5.1 Introduction

Most primary commodities are processed from raw materials to final product in a series of transformation. These include the movements of goods and services from one industry to another, from one settlement to another on a rural-rural basis or from urban centres to rural areas and vice versa. This interrelationship is known as linkage.

This section analyses the spatial linkages of small scale industries under the following sources of capital, sources and type of labour, sources and annual cost of raw material, supply of tools and equipment, repair services, marketing of output, and sources of information.

3.5.2 Sources of Capital

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In the production process, capital can be ranked second to the entrepreneur because, it is the factor that is manipulated to get the other factor of production. Capital is here discussed under two main sub-headings namely: starting and working capital.

Sources of Starting Capital

This was examined to find out the main sources of starting capital for rural small scale industries. It was used to establish the spatial linkages between the source of starting capital and the industries in the district. The analysis of the major sources and their spatial locations are given in Table 3.11.

TABLE 3.11: SOURCE AND LOCATION OF INITIAL CAPITAL

TYPE OF INDUSTRY	NO. OF RESPONSES	PERSONAL SAVINGS			FAMILY MEMBERS			TRADITIONAL		
		WS	OS	OD	WS	OS	OD	WS	OS	OD
Milling	11	10			-	1				
Gari processing	13	12			1	-				
Distillery	6	5			-	1				
Pito brewing	8	6			1	-		1		
Fish smoking	5	3			1	1				
Basket weaving	3	3			-	-				
Carpentry	11	5			2	1	3			
Charcoal burning	5	5			-	-				
Dress making	13	4			3	2	3	1		
Pottery	5	4			-			1		
TOTAL NO.	80.0	57			8	6	6	3		
%	100.0	71.3			10	7.5	7.5	3.7		

WS = Within Settlement, OS = Outside settlement, OD = Outside district

Source: Author's Field Survey, April 1995

The analysis revealed that the major source of starting capital was from personal savings. This accounted for 71.3 percent of the sources of funding. This high percentage compares favourably with what was revealed in the discussion on type of ownership, (section 3.4.1) where it was shown that 80.0 per cent of the industries were one-man businesses. This has a negative effect on the expansion of industries because the source is limited to what the owner has been able to save over a period.

The second source of initial capital was family members. This constituted 25.0 per cent. This was found to be weak financially (SPRING Programme, 1994), hence, there were limits to what they could offer in terms of financing small scale industry. The percentage is relatively high showing the social and economic linkages existing between entrepreneurs and their families in rural areas.

The third source of starting capital was from traditional money lenders. This linkage was not strong. Only 3.7 per cent of the entrepreneurs got their capital from this source. This low percentage was due to the fact that traditional money lenders charge high interest rate.

In connection with location of source of capital, (shown in Table 3.11) all those who got their capital from personal savings got it within the settlement. In the case of those who got their capital from family members eight out of the 20, were within the settlements, while six were resident outside settlement (within district) and six were resident outside the district. This showed the social cohesion between family members in rural areas and their relatives living outside the district.

Only two industries namely: carpentry and dress making got their capital outside the district. This can be attributed to

the nature of the tools or machines they use. It is possible that they only got the heavy capital needed to buy their tools and machines from relatives living outside the district.

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Source of Working Capital

Only 22 of the 80 entrepreneurs interviewed (27.5 per cent) reported having got additional capital for increasing raw material. The analysis of the distribution of the sources and location of working capital is shown in Table 3.12.

TABLE 3.12: SOURCES AND LOCATION OF WORKING CAPITAL

TYPE OF INDUSTRY	NO. OF RESPONSE	OWN SAVINGS			RELATIVES			CUSTOMERS		
		WS	OS	OD	WS	OS	OD	WS	OS	OD
Milling	3	1			1			1		
Gari processing	4				1					3
Distillery	2				-		2			
Pito brewing	2	1			1					
Fish smoking	1	1			-					
Basket weaving	1				1					
Carpentry	4						2	1	1	
Charcoal burning	-									
Dress making	4						2		2	
Pottery	1				1					
TOTAL NO.	22	3			5		6	2	3	3
%	100.0	13.6			22.6		27.6	9.0	13.6	13.6

WS = Within Settlement, OS = Outside settlement, OD = Outside district

Source: Author's Field Survey, April 1995

The analysis showed that 11 out of the 22 entrepreneurs (50.0 per cent) who reported having got working capital, got it from relative. This again showed the strength of the integration between relative and entrepreneurs in a rural society.

Also eight out of the 22 respondents (36.3 per cent) got their working capital from customers. In rural areas customers also help the entrepreneurs to continue their production by offering them additional capital. In this situation it was found out that the capital was mostly in the form of raw materials.

In connection with the location of the source, 10 out of the 22 respondents (45.5 per cent) who got working capital got it within the settlement, nine (44.5 per cent) got their working capital outside the district and three (13.6 per cent) got theirs within the district but outside the settlement.

The entrepreneurs in the gari industry who got working capital got it outside the district. This is explained by the fact that almost all the products of the gari processing industry is sold to customers who in turn help in providing capital. The other industries which showed strong outside district linkages were distillery, carpentry and dress making. Except for the distillery industry the other two requires heavy capital which may not likely be obtainable from relative

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living within the district.

3.5.3 Labour

Introduction

Two aspects of labour, as an input into the production process of small scale industries, were examined. These were: the type of labour and its origin. The outcome of this exercise showed the degree of integration between labour and small scale industries within and outside the district.

TABLE 3.13: TYPE OF LABOUR BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO. OF RES-PONSE	TYPE OF LABOUR											
		OWN LABOUR			FAMILY LABOUR			APPRENTICE			HIRED LABOUR		
		WS	OS	OD	WS	OS	OD	WS	OS	OD	WS	OS	OD
Milling	11	5			2	2					1		1
Gari processing	13	5			6						2		
Distillery	6	2			1			3					
Pito brewing	8	4			1			3					
Fish smoking	5	4			-						1		
Basket weaving	3	2			-			1					
Carpentry	11	2			-			6	3				
Charcoal burning	5	2			2						1		
Dress making	13	2			1			8	2				
Pottery	5	3			1			1					
TOTAL NO.	80	31			14	2		22	5		5		1
%	100.0	38.8			17.5	2.5		27.5	6.3		6.3		1.2

WS = within settlement, OS = outside settlement, OD = outside district

Source: Author's Field Survey, April 1995

I. Type of Labour

Four main types of labour were utilized by small scale industries in the district namely: own labour, family labour, apprenticeship and hired labour.

The commonest type of labour used was found to be own labour (38.8 per cent). This is the situation where the industry's owner does everything. The operations involved are simple and can be carried out by a single person. It was found to be most common in simple traditional industries namely: fish smoking, basket weaving and pottery.

The second type of labour utilized by small scale entrepreneurs in the district was apprenticeship. It constituted 33.8 per cent of the total. This was mostly associated with the more technical industries namely: carpentry, dress making and distillery.

The third type of labour used was family labour. It constituted 20 per cent. In this form of labour, family members are used in the production process. They are not usually paid but are taken care of by the proprietor who may be the mother, father, or any close relative. This form of labour was mostly associated with the gari processing, charcoal burning and milling industries.

The last type of labour used by small scale entrepreneurs was hired labour. This is the type of labour in which someone is paid for a piece of work done. This type of labour is not common in rural areas where the tradition of either working for someone without requesting payment or not working at all, is common. This is attested in the district by the fact that only six out of the 80 entrepreneurs (7.5 per cent) interviewed reported that they used hired labour. The hired labour is given a volume of work to do and is usually paid on completion. Thus One big advantage entrepreneurs would have using hired labour is target production which increase output.

II. Labour Mobility

To find out the degree of spatial integration between small scale industries in the district and their environment, the origin of labour was examined. The result of this examination is shown in Table 3.13.

The analysis revealed that 90 per cent of the labour employed in small scale industries in the district came within the settlement where the industries were located. Only one settlement. The analysis also showed that 8.8 percent of the labour came from within the district but outside the settlement.

Only one entrepreneur in the milling industry at Banda reported using hired labour coming outside the district. This can be attributed to the fact that Banda is a border town close to Gonja East district.

This showed that labour was not spatially integrated with other districts or regions. However, this concentration of labour within the district can have positive effects on:

- the establishment of more non-agricultural income generating activities;
- localization of employment; and
- reduction of rural-urban migration.

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3.5.4 Supply of Raw Material

The essence of analysing the source of raw material, was to establish whether spatial linkages exist between the small scale industries in the district and sources of raw material. The analysis is presented in Table 3.14.

TABLE 3.14: SOURCES OF RAW MATERIALS

TYPE OF INDUSTRY	NO. INTERVIEWED	RAW MATERIAL				SOURCE	
		AGRIC PRODUCTS	FOREST PRODUCTS	INDUSTRIAL PRODUCT	EARTH BASED	WD	OD
Milling	11	11	-	-		11	
Gari processing	13	13	-	-		10	3
Distillery	6	4	-	2		4	2
Pito brewing	8	8	-	-		8	-
Fish smoking	5	5	-	-		5	-
Basket weaving	3	-	3	-		3	-
Carpentry	11	-	11	-		3	8
Charcoal burning	5	-	5	-		5	-
Dress making	13	-	-	13		7	6
Pottery	5	-	-	-	5	5	-
TOTAL NO.	80	41	19	15	5	61	19
TOTAL %	100.0	51.3	23.7	18.7	6.3	76.3	23.7

WD = Within District, OD = Outside District

Source: Author's Field Survey, April 1995

(a) Backward Linkage

The analysis showed that 51.3 per cent of raw materials originally came from agriculture, 23.7 per cent from forestry, 6.3 per cent from the earth based and 18.7 per cent from other industries.

This showed a strong relationship between agriculture and small scale industries in the district. This further strengthened the fact that the district is an agricultural district. There is therefore the need to strengthen this linkage to help diverse the agricultural sector.

The other strong sectoral backward linkage observed was between forestry and small scale industries. This was found to be 23.7 per cent. This linkage was weak because wood was put under sources of energy where it was found to be the major source of energy for all the industries using energy, except the milling industry that had its source of energy from diesel driven motors. All the entrepreneurs in the dress making and two out of the six entrepreneurs in the distillery got their raw material from industrial products.

(b) **Source of Raw Material**

Two major of sources of raw material were identified. These were: within the district and outside the district.

It was shown that 76.3 per cent of the sources of raw materials were located within the district. One advantage of this was that it cut down the cost of transportation of the raw material. The industries which exhibited this pattern were:

- Agro-based industries - Pito brewing, fish smoking, milling, gari processing;
- Wood-based industries - charcoal burning;
- Clothing industries - dress making; and
- Earth-based industries - pottery.

A total of 23.7 per cent of the small scale industries had their sources of raw materials located outside the district. The carpentry, dress making, distillery, had the highest number of entrepreneurs getting raw materials outside the district. One thing that emerged out clearly was that the raw material spatial linkage was stronger internally.

c. Cost of Source of Raw Material

To further establish the fact that the spatial linkages were stronger with the internal market (within the district) than the external, the annual cost of the raw materials were computed as shown in Table 3.15 shows the analysis.

TABLE 3.15: ANNUAL COST OF RAW MATERIALS IN '000 CEDIS

LOCATION OF INDUSTRY	NO. INTERVIEWED	ORIGIN OF RAW MATERIAL			
		WITHIN DISTRICT		OUTSIDE DISTRICT	TOTAL
		WS	OS		
Milling	11	2223	492	1173	3888
Gari processing	13	3081	750	784	4615
Distillery	6	1497	277	685	2459
Pito brewing	8	1877	119		1996
Fish smoking	5	1670	202		1872
Basket weaving	3	552	93	109	754
Carpentry	11	1375	441	2786	4602
Charcoal burning	5	682	90	161	933
Dress making	13	2658	575	1587	4820
Pottery	5	518	205	157	728
TOTAL NO.	80	16133	3244	744	26819
%	100.0	60.0	12.0	28.0	100.0

WS = Within Settlement, OS = Outside Settlement

Source: Author's Field Survey, April 1995

This analysis revealed that entrepreneurs bought 72.0 per cent of their raw material within the district. Out of this 60.0 per cent was bought within the settlement. The entrepreneurs bought only 28.0 percent of their raw material from outside the district.

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This is a good sign of economic integration with the other sectors, because they too benefit by selling their raw materials direct on site. Secondly, the situation reduced the

cost of transportion for both the entrepreneurs as well as the traders or farmers.

3.5.5 Supply of Services

In this section services, refers to the supply of energy and water. The main sources of energy supply to small scale industries in the district were electricity and firewood.

The distribution of this service by kind of industry is given in Table 3.18.

TABLE 3.16: SUPPLY OF SERVICES BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO. INTERVIEWED	ENERGY			WATER
		ELECTRICITY		FIREWOOD	
		PUBLIC	PRIVATE		
Milling	11	2	9	-	-
Gari processing	13			13	-
Distillery	6			6	6
Pito brewing	8			8	8
Fish smoking	5			5	-
Basket weaving	-	-	-	-	-
Carpentry	-	-	-	-	-
Charcoal burning	5	-		5	5
Dress making	-	-		-	-
Pottery	5			5	5
TOTAL NO.	53	2	9	42	24
%	100.0	2.6	11.7	54.5	31.2

Source: Author's Field Survey, April 1995

It was observed from Table 3.16 that some industries like distillery, pito brewing, use both firewood and water. These were double counted, hence, the number using the services was 77 instead of 53. Small scale industries like basket weaving, carpentry and dress making did not use any of the services.

Only two industries located at Kete-Krachi reported using public electricity. The reason being that as at the time of carrying out this research, Kete-Krachi was the only town in the whole district with electricity. The rest in the milling industry used private diesel driven motors.

The industries which used firewood as source of energy constituted 54.5 per cent, of the sampled industries, while 31.1 per cent used water.

As discussed in section 3.5, the major problem reported by all the industries using water was its seasonality.

3.5.6 Supply of Tools and Equipments

In this section three aspects of supply of tools and equipment are discussed namely: the origin of tools used by small scale entrepreneurs in the district, the annual cost of these tools and equipments and the location of the repair services.

1. Origin of Tools and Equipment

The origin of tools and equipment used by small scale industries in the district is given in Table 3.17.

TABLE 3.17: ORIGIN OF TOOLS AND EQUIPMENT

TYPE OF INDUSTRY	NO. INTERVIEWED	ORIGIN OF TOOLS AND EQUIPMENT		
		WITHIN DISTRICT		OUTSIDE DISTRICT
		WITHIN SETTLEMENT	OUTSIDE SETTLEMENT	
Milling	11	-	-	11
Gari processing	13	4	2	7
Distillery	6	4	-	2
Pito brewing	8	5	-	3
Fish smoking	5	5	-	-
Basket weaving	3	1	1	1
Carpentry	11	-		11
Charcoal burning	5	1		3
Dress making	13	-		11
Pottery	3	3		
TOTAL NO.	80	23	3	54
TOTAL %	100.0	28.8	3.8	67.4

Source: Author's Field Survey, April 1995

The analysis revealed one major source of tools and equipment for small scale industries. namely outside the district which accounted for 67.4 per cent of respondent industries..

The major sources were Kumasi and Accra. All the industries, except the pito brewing and pottery relied on external sources for their tools and equipment.

The internal supply linkage was rather weak. Only 32.6 per cent of the tools were bought within the district. The industries which reported to had bought their tools and equipment internally were: fish smoking, pito brewing and pottery.

It should here be observed that with a heavy reliance on external supply of tools and equipment, any increases in the prices of these items or their shortages on the external markets would adversely affect the operations of small scale industrial activities in the district (Boapeah and Poppe, 1992:63). This is true of Krachi district, where its geographic position and the presence of a massive water body (Volta Lake) already poses serious problem on the transport network.

II. Annual Expenditure on Tools and Equipment

The rationale for carrying out this analysis was to determine the directions of flow of capital in the district. Table 3.19 shows the annual expenditure on tools and equipment. High expenditure was recorded in the milling industry because four

out of the eleven entrepreneurs reported that they acquired their diesel plants this year.

TABLE 3.18: ANNUAL EXPENDITURE ON TOOLS AND EQUIPMENT IN '000

TYPE OF INDUSTRY	NO. INTERVIEWED	EXPENDITURE WITHIN DISTRICT	EXPENDITURE OUTSIDE DISTRICT
Milling	11	744	6703
Gari processing	13	475	489
Distillery	6	1080	1084
Pito brewing	8	210	-
Fish smoking	5	132	70
Basket weaving	3	29	20
Carpentry	11	746	1566
Charcoal burning	5	57	54
Dress making	13	759	880
Pottery	3	15	15
TOTAL NO.	80	4247	10881
TOTAL %	100.0	28.0	72.0

Source: Author's Field Survey, April 1995

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The analysis revealed that small scale industrialists spent 72 per cent of their annual expenditure on buying tools and equipment outside the district. As stated previously, on the origin of tools and equipment, this situation is not good enough for small scale industries in the district. This situation meant that there was an outward flow of capital from the district, hence, the need to strengthen the linkages among

small scale industries in the district.

III. Location of Repair Services

The essence for examining this aspect was to find out whether the linkage between the small scale industries and repair services was internal or external.

It was reported that 21 (27.6 per cent) of the entrepreneurs repaired their own tools. It was the remaining 59 entrepreneurs that was analysed as shown in Table 3.19.

The analysis revealed that:

- 67.8 per cent of the repair services were located within the settlements where the industries are located;
- 13.6 per cent of entrepreneurs took their tools and equipment to Kumasi; and
- 13.6 per cent of entrepreneurs took their tools to Accra.

Three entrepreneurs each from Kete-Krachi took their tools and equipment to Kumasi while two each from Banda and Borae No.2 took their tools and equipment to Accra and four from Dambai took theirs to Accra.

The remaining three of the entrepreneurs reported repaired their tools within the district but outside the settlements.

TABLE 3.19: LOCATION OF REPAIR SERVICES

TYPE OF INDUSTRY	NO. INTERVIEWED	LOCATION OF REPAIR SERVICE			
		WITHIN DISTRICT			
		WS	OS	KUMASI	ACCRA
Milling	11	2	1	1	2
Gari processing	13	3	1	3	2
Distillery	6	4	-	1	-
Pito brewing	8	6	-	-	-
Fish smoking	5	-	-	-	-
Basket weaving	3	3	-	-	-
Carpentry	11	2	1	2	2
Charcoal burning	5	4		-	-
Dress making	13	9		1	2
Pottery	3	4		-	-
TOTAL NO	80	40	3	8	8
TOTAL %	100.0	67.8	5.0	13.6	13

WS = Within Settlement, OS = Outside Settlement

Source: Author's Field Survey, April 1995

3.5.7 Marketing of Products

Marketing of products or output plays an important role in the growth and development of small scale industries as efficient and effective marketing of products has implication for increased profit earnings and expansion in output (Boapeah and Poppe, 1992: 67). Additionally, it increases the spatial integration of industries in the rural areas by bringing entrepreneurs close to each other. Several other benefits can be earned, including social interaction and information flows. For the purpose of this study, the discussion focused on: the types and origin of customers and location of market outlets.

Table 3.20 shows the type and origin of customers who patronised small scale industries in the district.

TABLE 3.20: TYPE AND ORIGIN OF CUSTOMERS

TYPE OF INDUSTRY	NO. INTER-VIEWED	TYPE AND ORIGIN OF CUSTOMERS											
		A			B			C			D		
		WS	OS	OD	WS	OS	OD	WS	OS	OD	WS	OS	OD
Milling	11	1	1	1	5	3							
Gari processing	13		4								3	1	5
Distillery	6	2	1						3				
Pito brewing	8	8											
Fish smoking	5	2							2			1	
Basket weaving	3	1			2								
Carpentry	11	2	1		3	1		2			2		
Charcoal burning	5	2			2	1							
Dress making	13	5	5		3								
Pottery	5				1	2	1						1
NO. TOTAL	80	23	12	1	16	7	1	2	5		5		6
%	100.0	28.7	15.0	1.3	20	8.7	1.3	2.5	6.5		6.5	2.5	7

A = Final Consumers, B = Other Manufacturing Industries
C = Retail shops D = Traders/Middlemen

Source: Author's Field Survey, April 1995

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The analysis revealed that 45 per cent of customers of small scale industries products were final consumers, while 30 per cent were other manufacturing industries. The analysis also showed that 16 per cent of the products were sold to traders, while eight per cent was sold to retail shops.

I. Origin of Customers

The objective of this exercise was to find out the catchment area of small scale industries products and how they were spatially integrated. Table 3.20 shows the output of this exercise.

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The analysis revealed that two main types of customers patronized small scale industries products in the district. These were those customers who came from within the district and those who came outside the district.

The study showed that 90.4 per cent of customers came from within the district. Of this, 57.5 per cent came from within the settlement where the industries were located. The other 32.8 per cent came within the district but outside the settlement where the industries are located.

The other customers (9.7%) were reported to be coming outside the district.

The level of integration varied from sector to sector. In the agro-based industries, 70 per cent of their customers came from within the settlement, while in the wood-based industries, 62.5 per cent of their customers came from outside the settlement where the industries were based.

The clothing sector was found to be more internally integrated because 76.8 per cent of the customers were reported to have come from within the settlements. These differences may be attributed to the range of influence of the various items produced.

In general the spatial linkages with outside customers were relatively weak. This showed an unintegrated market.

II. Marketing Sites

To further investigage the level of integration of small scale industries and their products, in the district, their marketing sites were analysed. Table 3.22 shows the result of this analysis.

TABLE 3.21: MARKETING SITES AND METHOD OF PAYMENT

TYPE OF INDUSTRY	NO. INTER-VIEWED	MARKETING SITES				METHOD OF PAYMENTS		
		A	B	C	D	CASH	CREDIT	BOTH
Milling	11	11				8	3	-
Gari processing	13	3	4		6	7	6	-
Distillery	6	1	2	2	1	3	1	2
Pito brewing	8	1	4		3	4	1	3
Fish smoking	5	1			4	1	2	2
Basket weaving	3	2			1	1	-	2
Carpentry	11	10			1	5	2	4
Charcoal burning	5	2			3	5		-
Dress making	13	13				11		2
Pottery	5	1	1		3	2	1	2
TOTAL NO.	80	45	11	2	22	47	16	17
%	100.0	56.3	13.7	2.5	27.5	58.8	20	21.2

A = Work Site, B = At Home, C = In a Shop,
D = In the Market

Source: Author's Field Survey, April 1995

Entrepreneurs marketed their products in four main sites. These were: at the work site, in the market, in shops and at home.

sold mostly to final consumers. These industries were charcoal burning, gari processing, pottery and pito brewing. This showed a slightly low level of interaction between market and small scale industries.

The other site where entrepreneurs disposed of their products was reported to be the home. The entrepreneurs who reported this way, were mostly those who dealt in food and drink items. For instance pito brewing distillery and gari processing.

Only the entrepreneurs of the distillery industry reported disposing of their produce in shops. This can be attributed to the fact that the containers used are breakable and the product can be stored for a long period without losing its taste. They also belong to a union that inspect the quality of their products occasionally.

III. Method of Payment

This was examined to establish the level of socio-economic linkages in a rural business atmosphere. Here, entrepreneurs are prepared to risk their capital, in the form of products, to help their customers who may not be in a position to pay cash. Table 3.22 shows the methods of payments used by customers. It was shown that 58.8 per cent of customers paid cash, 20 per cent credited and 21.2 per cent paid part and

It was revealed that 56.3 per cent of entrepreneurs reported that they disposed of their products right at the work site. This compares favourably with the origin of customers, where 57.5 per cent of customers came from within the settlement. Also looking at the sectoral distribution of marketing sites, two facts emerged namely:

i. those industries which offered mainly services to customers, disposed their products right at work site. These industries were the milling and the dress making industries. Here, the customers brought the raw materials and only pay the entrepreneurs for the services rendered.

ii. nature of the final products to a large extent dictated where they were disposed of. The case of the carpentry, industry can be cited here. The final products were bulky and difficult to move about, hence, 90.6 per cent of entrepreneurs in this industry reported that they disposed of their products at work site.

The next site where entrepreneurs reported that they disposed of their products was at the market place. Here, it was found that 27.5 per cent of entrepreneurs disposed of their product. It must be noticed here that the majority of the entrepreneurs who reported disposing of their products in the market place

credited part. The credit system is a risky form of transaction for the entrepreneur, especially in rural areas like Krachi, where avenues for working capital acquisition are limited. Entrepreneurs depend on their sales for the procurement of further raw materials. Therefore by crediting their products to customers they are locking up their capital until customers effect payments. This type of transaction is based on mutual trust, which both parties should have to respect for the business to continue its operations.

In summary, the small scale industries in the district showed a strong spatial linkage with the internal market than the external market. Even within the district, the linkages were stronger within the settlements. This showed a closed or restricted market for small scale industries' products in the district. There is therefore the need for more spatial integration with their markets within and outside the district.

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Forward Linkages

Forward linkages occur in industries which produce goods which then become inputs into other industries. For the purpose of this study, they were analysed to find out the level of interaction among industries in the district.

Forward linkages were observed in 24 (30%) of the small scale industries studied. The distribution of these industries is given in Table 3.20 and the direction of the linkage shown in Table 3.22. It is shown that 16 out of the 24 industries which bought products from other industries were located within the settlements, while seven industries were located outside the settlement but within the district. Only one industry was located outside the district. This meant that the forward linkages were stronger internally (with the district). Even though one may argue that this situation cuts down on cost of transportation, it does not help much in integration with other settlements outside the district.

TABLE 3.22: DIRECTION OF FORWARD LINKAGE

TYPE OF INDUSTRY	DIRECTION OF LINKAGE
Milling	Pito brewing, gari processing
Basket weaving	Fish smoking, gari processing, charcoal burning - all sizes of baskets
Carpentry	Pito brewing - benches and stools, dress making - chairs, tables, stools
Charcoal burning	Dress making - charcoal
Dress making	Carpentry - upholstery (only in Kete-Krachi and Dambai
Pottery	Pito brewing - big and small pots

Source: Author's Field Survey, April 1995

3.5.8 Information Linkage

Spatial linkages are much more meaningful as tools for small scale industries development, when there is an effective information flow system.

In this section an attempt was made to analyse the major sources of information available to small scale entrepreneurs in the district.

From the results of the analysis in Table 3.23 it was established that no entrepreneur got information on pricing system by reading newspapers.

TABLE 3.23: DISTRIBUTION OF SOURCES OF INFORMATION BY TYPE OF INDUSTRY

TYPE OF INDUSTRY	NO.OF RESPONSES	A	B	C	D
Milling	9	3	4		2
Gari processing	11		7	1	3
Distillery	6	3	1	1	1
Pito brewing	5		1		4
Fish smoking	4		3	1	
Basket weaving	2			1	1
Carpentry	10	2	6		3
Charcoal burning	4		2	1	1
Dress making	13	1	7	1	3
Pottery	2				2
TOTAL	66	9	31	6	20
%	100	13.6	47.0	9.0	30.4

A = Through radio, B = Through other entrepreneur
C = Through relatives living outside settlement
D = Through customers especially traders
Please note: Total number of responses is less than 80 because 14 got no information

Source: Author's Field Survey, April 1995

Fourteen (17.5 per cent) respondents reported that they got no information about prices at all.

Four major sources of information were identified in the district. These were:

- Through other entrepreneurs (38.8 per cent). The scope and the effectiveness of this source depend on the degree of interaction among the entrepreneurs, as well as the degree of exposure to the mass media and other reliable sources of information.

- The next source of information as reported by the entrepreneur was through customers especially traders or middlemen - 25 per cent. This source can be questionable because traders or middlemen are profit oriented. The chances are that they may not tell the rural entrepreneur the correct price.

- The most reliable source of information that is not currently fully utilized according to the analysis is the radio. Only 11.3 per cent reported using the radio as the medium through which they get information.

- The fourth and last source of information as reported by the respondents, was through relative living outside the settlement.

CHAPTER FOUR

SUMMARY OF FINDINGS, PROBLEMS, CONSTRAINTS, POTENTIALS POLICY IMPLICATIONS

This chapter summarizes the major findings of the analysis with respect to spatial linkages, problems, constraints and potentials and implications of these findings for policy formulation.

4.1 SUMMARY OF MAJOR FINDINGS

The major findings on the analysis of spatial linkages carried out in chapter three are summarised below:

4.11 Educational Background of Entrepreneurs

a. The study revealed that 58.7 per cent of entrepreneurs had some level of formal education. However, only 6.3 per cent had formal professional training and 61.2 per cent went through the traditional apprenticeship system of training.

b. In terms of location of training facilities three levels of spatial linkages were revealed, namely: within the settlement (42.6 per cent), outside the district (40.7 per cent) and within the district but outside the settlement (16.7 per cent).

c. A higher percentage (51.3 per cent) of the entrepreneurs were found to be women.

4.1.2 Capital

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a. It was found that 71.3 per cent of initial capital was from personal savings, 25.0 per cent from family members and 3.7 per cent from traditional money lenders. No entrepreneur reported having got starting capital from the formal institutions like banks or cooperatives.

b. Of the 27.5 per cent of entrepreneurs who reported having got additional working capital 50.2 per cent got theirs from relatives while 36.2 per cent got their working capital from customers and 13.6 per cent from personal savings. A high proportion of this was in the form of raw materials. This showed heavy reliance on relatives and customers for working capital.

c. The major source of labour (86.3 per cent) was within the settlement. This shows a strong internal linkage or a high concentration of labour mobility.

4.1.4 Raw Material

a. A strong backward linkage was found to exist between small scale industries and agriculture and forestry. These two sectors supplied 75.0 per cent of the raw materials needed by the small scale industries in the district.

b. In general, 68.8 per cent of the raw materials supplied to small scale industries came from within the settlements, while the agro-based industries got as high as 90 per cent of their raw material within the settlement. The linkage is strong internally.

c. Three industries namely, distillery, carpentry and dress making had 33.3 per cent, 90 per cent and 46 per cent respectively of their raw materia coming from outside the district. This showed a strong external linkage.

4.1.5 Technology Supply

a. A total of 67.4 per cent of the tools and equipment used by small scale industries in the district came from outside the district. Here, the spatial linkage, with respect to the supply of tools, was

stronger outside than within the district.

b. A strong linkage was identified between small scale industries and the repair service, because 72.6 per cent of small scale industrialists took their tools for repairs.

c. However, this linkage was stronger internally since outside the settlement only 13.6 per cent took their tools to Accra while 13.6 per cent took theirs to Kumasi.

d. In connection with annual expenditure on tools, entrepreneurs spent 72.0 per cent on procuring tools outside the district and only 28.0 pere cent inside. The linkage was stronger outside meaning a drain on capital.

4.1.6 Marketing of Output

a. Most of the customers (45 per cent) of small scale industries' products were final consumers. Only 30 per cent of the products were used by other manufacturing industries, showing a weak forward linkage.

b. Ninety per cent of these were from within the district and out of this percentage 63.9 per cent were from within the settlement and the rest came from outside the settlements.

c. Only the gari processing industry was seen to have strong external linkage.

d. It was found that 56.3 per cent of entrepreneurs dispose of their products on work site, 27.5 per cent in the market and the rest either in their house or shops. The linkage between small scale industries and the market was found to be weak, hence the need to strengthen this is very urgent.

e. Sixty per cent of the customers were reported to be paying in cash, while 18.8 per cent credit and 21.2 per cent pay part cash and part credit. This showed a strong social linkage and mutual trust between customers and entrepreneurs in a rural environment.

f. It was found that 41.3 per cent of entrepreneurs consulted others before determining the price of their products, while 40.3 per cent determined their own prices.

4.1.7 Information Flow Analysis

a. No entrepreneur reported getting information through the newspapers, while 38.8 per cent got information from other entrepreneurs and 25 per cent from traders. Only 11.3 per cent used radios as source of information. Entrepreneurs relied on other sources for information.

4.2 DEVELOPMENT PROBLEMS

The major areas where small scale industries entrepreneurs reported having problems were:

(a) **Acquisition of Credit**

Only six (7.5 per cent) reported that they had no problems in acquiring credit. The major problems encountered were:

- No access to formal credit facilities;
- High interest rates;
- Traditional money lenders not willing to give credit;
- Lack of collateral
- Size of business

(b) **Acquisition of Raw Material**

Many problems were reported in connection with raw material acquisition. The major ones were:

i. High transportation cost;

ii. High cost of raw material;

iii. Seasonal availability of raw material

iv. Distance to source of raw material;

v. Lack of capital

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(c) **Acquisition of Tools**

Forty-five (56.3 per cent) entrepreneurs reported using simple tools therefore had no problems. Those using more complex tools for their production reported the following problems.

- High cost of tools
- Distance to source of tools
- Lack of capital
- Unstable prices

(d) **Provision of Services**

Only two milling industries used electricity from public source as energy source. The rest used private diesel driven motors and among the problems they reported were regular shortages of fuel, lubricants and spare parts.

The major problem reported in connection with water supply was its seasonality.

(e) **Marketing Problems**

Only 26 (32.5 per cent) out of 80 entrepreneurs reported having no marketing problems. The major problems reported were:

i. Delay in making payments;

ii. Delay in collecting items;

iii. Lack of demand;

iv. High transportation cost;

v. Unstable customers.

4.3 DEVELOPMENT CONSTRAINTS

For small scale industries in the study area, the major development constraints are outlined as follows:

(a) One of the constraints to development in the study area in general and small scale industries in particular was the presence of the largest artificial lake in the world - the Volta Lake. The formation of this lake has almost spatially isolated the district from the major urban centres of the south. It also led to the abandoning or

inundation of the major roads which linked the north to the south. The result has been worsening conditions of roads since they no longer form major roads. This has consequently led to long travel times and high costs of transportation as had been shown in section 3.9.

(b) **Professional Qualification of Entrepreneurs**

From the analysis of entrepreneurial characteristics in section 3.3, it was revealed that only 6.5 per cent of the entrepreneurs interviewed had formal professional training. A large proportion of the entrepreneurs (58.8 per cent) had their training through the traditional apprenticeship system. While this is a good way of transferring knowledge practically, its major disadvantage is that the apprentice is never introduced to simple book-keeping and accounting. Therefore most rural small scale industrialists have virtually no records on production costs and marketing prices. Because of lack of basic records, there is a lack of continuity of the business in the event of changes in management.

(c) **Type of Ownership**

As was shown earlier in section 3.4.1, ownership structure of small scale industries in the Krachi district is mostly sole proprietorship or one man business. As noted by Boapeah and Poppe (1992:70), this form of ownership structure makes

capital a major constraint to the development of small scale industries since in the rural areas, one-man enterprises are limited by the entrepreneur's own resources, especially initial capital. In the study area it was revealed that 71.3 per cent of the starting capital was from own resources, 25 per cent from family members and 3.7 per cent from traditional money lenders. No one reported having got starting capital from the formal institutions - banks.

This way of acquiring capital makes expansion for small scale industries extremely difficult.

(d) **Origin of Business**

In the study area some of the industries were located at their present site not because of economic reasons but may be either historical, cultural or social reasons. Some of these factors may be birth place to take care of ageing parents. The implication is that these location decisions of small scale enterprises are devoid of any feasibility study or strong underlying economic factors such as sound raw material base, proximity to market or availability of labour (ibid:79). This is why one could find that industries are scattered all over a given settlement - under a tree, by the road annexed to a living house or open air.

(e) **Long Distance to Source of Raw Materials**

Long travel time and subsequently high transportation costs posed serious constraint on the volume of raw materials small scale entrepreneurs can buy at a given period.

As noted earlier the average income of the people in the district is relatively low. This reduces their purchasing power and then their demand for small scale industries products.

The products of small scale industries are in constant competition with better finished products from abroad and elsewhere in the country.

4.4 DISTRICT DEVELOPMENT POTENTIALS

After discussing the many problems and constraints one would almost be tempted to say that small scale industries in the district are `write offs´. However, there exist certain potentials in the district, which if judiciously managed would immensely contribute to the development of small scale industries and therefore strengthen their linkages. These potentials are discussed at two levels, namely: enterprise level and district (spatial) level.

4.4.1 Enterprise Level

(a) Age of Entrepreneurs

One of the criticisms levied against small scale industries is the lack of continuity after death of entrepreneur. In the study area, the average age of the entrepreneurs interviewed was 35.5 years. This meant high probability for continuity. If these entrepreneurs are given the needed support, logistic or otherwise, there are high hopes for small scale industries to continue to survive and contribute to the economic development of the district.

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(b) High Women Participation Rate

The study revealed that 51.3 per cent of the entrepreneurs were women. This by itself is a potential because women are known to be more devoted to duty. This was seen from the moral support they give to organisations like the 31st December Women's Movement in the gari processing industry.

(c) Local Resource Utilization

Except for industries like carpentry and dress making, the industries utilize endogenous raw materials. These are present in large quantities in the district. This study had shown that 85 per cent of these raw materials used by small scale industries come from within the district. All that is needed is to develop strategies to integrate these resources

spatially.

(d) **Availability of Labour**

The study has revealed that 95.5 per cent of the labour utilized by small scale industrialists come from within the district. This high concentration of labour within the district will help in income generation and internal spatial integration.

(e) **Level of Technology Used**

Most of the industries (80 per cent) surveyed were found to be using simple and appropriate technology. The main advantage is its less capital requirement. Secondly, this type of technology also helps in promoting local skill development through the traditional apprenticeship system. In the study area the apprenticeship system contributed 61.2 per cent of the labour force used by entrepreneurs.

(f) **The Presence of Daily and Periodic Markets**

From the field survey, it was found that the district had 17 organized daily and periodic market. These are listed in Appendix I. If the functions of these markets are well coordinated, they can be a strong forces for spatial interaction among entrepreneurs. They can also offer many options for small scale industrialists to dispose of their products. They can also serve as centres for information

dissemination especially on prices and innovations. They will serve as focal points for social interaction thus strengthening the spatial linkages in the district.

4.4.2 District Level

(a) Raw Material Potentials

From the survey carried out by the SPRING Programme (1994), it was revealed that 75 per cent of the population was engaged in farming. Secondly, there is a large expanse of arable and pastoral land in the district. These provide enough raw materials for the agro-based industries, thus strengthening the internal spatial linkages.

(a) The Presence of the Lake

The lake, which in another situation was a constraint, could here be utilized for many economic activities. The activities which concern this study are fishing for the fish smoking industry and transport to convey small scale industries products and bring in raw material. Other activities include tourism and irrigation.

(c) Provision of training facilities

There are already four institutions in the district, which could be used to offer technical training for the entrepreneurs. These are: two privately owned vocational and technical schools at Chinderi, one at Kete-Krachi and the

other at Dambai. One big advantage Chinderi has for offering this type of training facilities, is its central location in the heart of the Nchumuru sub-district. These training facilities are necessary because presently only 6.5 per cent of the entrepreneurs interviewed had formal vocational training.

(d) The district is served with a network of feeder roads. These only need rehabilitation, so as to ease movements of small scale entrepreneurs from one market to another.

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4.5 IMPLICATIONS OF FINDINGS FOR POLICY FORMULATION

Based on the findings of this study, certain implications for development policy formulation can be identified. These are outlined below:

i. The high proportion of entrepreneurs without formal vocational and technical training need to be addressed urgently, since this would affect both the quality and quantity of production. As a first step towards strengthening spatial linkages, there is the need to strengthen the human capacity by supporting training programmes in the district.

ii. The heavy reliance of entrepreneurs on the informal sector as sources of capital negates expansion efforts because of the limited amounts which can be offered at a time. It is therefore essential, that linkages are developed between small scale industries and banks.

iii. The higher percentage of women entrepreneurs suggests that any programme designed to strengthen linkages should take into account the needs and capabilities of women.

iv. The high concentration of labour within the respective settlements will help in skills acquisition and technology transfer from one settlement to another.

v. There was a strong backward linkage between small scale industries and the primary producers (agriculture, forestry). However, this linkage was strong only within sectors in the same settlements. There is therefore the need to extend this linkages beyond the boundaries of the settlement and even more important beyond the district.

vi. The heavy dependency of entrepreneurs on external sources for the supply of their tools means an outward flow of capital. To tackle this problem. there is the need to adopt appropriate technology in production rather than relying on capital intensive equipments.

viii. The restricted nature of the markets in the district limits the chances of small scale entrepreneurs making maximum profit from their products. There is the need for more spatial integration so as to widen the market and increase the threshold population of the goods produced.

viii. Sources of information in the district are limited. Therefore to help entrepreneurs in more remote settlements to be abreast with everyday happenings, the establishment of local information centres such as communally owned radio are important steps towards strengthening spatial linkages of small scale industries.

ix. In general, to tackle the problems of lack of capital, lack of credit, lack of collateral, difficulties in getting raw materials, there is the need for entrepreneurs to come together to form cooperative or unions by pulling their resource

together.

x. The physical linkages namely: roads and lake transport have been found to be weak both internally as well as between neighbouring districtS. There is therefore the urgent need for coordination and financial support between the District Assembly and the Department of Feeder Roads, the Volta River Transport Authority, the Ghana Private Road Transport Union (GPRTU), and the neighbouring districts of Sene, Gonja East, Nkwanta and Jasikan.

CHAPTER FIVE

STRATEGIES FOR STRENGTHENING SPATIAL LINKAGES

5.1 INTRODUCTION

Development does not take place in isolation. It has to be coordinated from the national to regional, district and sub-district levels. Therefore, whatever strategies are suggested for strengthening spatial linkages of small scale industries, they should be in conformity with the national goals and aspirations. At the district level, the district assembly is both the political and administrative authority. It has the right by law to establish department in accordance with provisions made by law. For the purpose of this study two main organs will be referred to most often because they have the technical knowledge on how to design and implement policies related to small scale industries. These organs are: the District Planning Coordinating Unit (DPCU) and the Department of Industry and Trade.

5.2 TYPES OF SPATIAL LINKAGES

From the analysis of spatial linkages carried out in chapter three the following types of linkages were identified, even though in some cases these were found to be very weak. The aim of this section is to suggest strategies for strengthening these linkages.

TYPE	ELEMENT
Institutional Linkages	- Structural relationship
	- Institutional interdependence
Entrepreneurial Linkage	- the entrepreneur, institution
Physical Linkages	- Road Network
	- Lake transport system
Economic Linkages	- Marketing pattern
	- Raw material and intermediate inputs
	- Capital
	- Production linkages - backward and forward
	- Sectoral commodity flow
Technological Linkages	- Tools and Equipment
Service Delivery Linkages	- Energy supply
	- Water service
	- Credit
	- Education, Training and Extension
	- Transport Service System
Social Interaction Linkage	- Social groups

5.3 STRATEGIES FOR STRENGTHENING LINKAGES

(a) Institutional Linkages

These refer to the linkages between small scale industries and the district's administrative structures and other institutions in the district. In a decentralised government, district organs play cardinal roles in the development of small scale industries. However, except for the fact that 80 per cent of entrepreneurs reported that they pay tax to the district assembly, no linkage was identified during the analysis in chapter three. Therefore to strengthen this important linkage, the following strategies are suggested.

- the district assembly should make desperate efforts to establish the District Planning Coordinating Unit (DPCU) to be at one end of the link.

- the district assembly should take immediate action to establish the Department of Industry and Trade. This department will be responsible for the coordination of the spatial linkages of small scale industries in the district

- the district assembly is encouraged to set up some rural service centres as contained in the new policy on rural development as well as in the

district development plan (SPRING Programme 1994). These centres will serve to strengthen the spatial linkages of small scale industries in the district because of the type of functions they are to perform.

The likely output of strengthened linkages between small scale industries and the district assembly institutions include award of contracts to small scale industries. For example. furniture making for schools, beds for hospital/health centres, school uniforms. Both the district as well as entrepreneur stand to benefit from these linkages.

(b) **Entrepreneurial Linkage**

Entrepreneurship as a factor of the production process as seen in the exercise of the powers in initiatives in the organization of other factors (land, labour and capital) in seeking, developing and applying new production methods and above all in bearing the risks and uncertainties associated with the performance of these functions (Boapeah, 1994:183). The entrepreneurs role in strengthening spatial linkage is crucial. Therefore strategies should be deviced so that he is capable of handling these complex linkages. Some of there strategies are discussed below.

I. Training and Educational Strategy

The rationale behind this strategy is to provide basic training and education so as to improve on the technical and managerial skills of the entrepreneurs in the district. The analysis carried out in chapter three showed that these skills were grossly inadequate because out of a total sample of 80 entrepreneurs interviewed only 5 (6.3%) had formal vocational training.

To improve on the basic skills of reading and writing, it is here suggested that the adult literacy classes currently run in most of the settlements in the district be intensified.

In connection with training of the technical and managerial skills, it suggested that for those entrepreneurs with basic middle school level education and above, the vocational and technical schools at Chinderi and Dambai be improved and expanded. The position of the towns are strategic enough to serve the district. If these schools are going to remain private, it is suggested that the district assembly makes conscious effort to support them with the necessary logistics.

For those with minimal primary level educational background, the technical training suggested is regular workshops and seminars with simple techniques. Workshops and seminars could also be organised but with different approaches for the

illiterate entrepreneurs. The approaches can include slide shows, film shows, sketches, coloured materials.

To improve on the management skills of entrepreneurs at district level, especially in simple book-keeping and accounting, the strategy suggested is supporting the Junior Secondary School curriculum that caters for these skills.

II. **Formation of Organizations/Cooperative Strategy**

As was observed in the main analysis, most of the entrepreneurs in the district, operate as individuals in the entire production process. This situation does not only slow down the process, but also limits the production capacity, capital acquisition and the marketing of products. However, 85 per cent reported that they would like to expand by forming cooperatives with others. Therefore, it is here suggested that when the department of Industry and Trade is formally established in the district, it takes up the responsibilities of registering and organizing small scale entrepreneurs into cooperatives. Whether these should be intra- or inter-industrial cooperatives or unions will have to be determined by the entrepreneurs themselves on the advice of officers of the department of Industry and Trade. This will also go for the size of membership of each union.

Also in line with the formation of unions or cooperatives, the author suggested that the district assembly sanctions the establishment of micro-industrial estates. These estates should first be given a trial at the rural service centres.

The formation of the micro-industrial estates also in conformity with the current policy on rural development as previously discussed.

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In either of the two cases, the following will be the expected benefits to be derived:

i. it will facilitate the free flow of information on issues like prices, new technology, availability of raw materials, and market.

ii. in the case of cooperatives or unions, it will ease the mobilization of credit from more formal lending institutions like banks, because they (banks) normally prefer dealing with groups rather than individuals.

iii. it will facilitate the flow of material inputs. The industries will enjoy among other privileges, the economies of agglomeration.

iv. it will ease the marketing of products because cooperatives can better explore wider markets.

(c) **Physical Linkages**

These linkages are considered in terms of the role they play in the development of small scale industries in the district. For the purpose of this study, only roads and water transport system are considered.

As stated in chapter 4.2, the district is almost physically cut off from the south by the formation of the lake. Though most of the settlements are accessible by road, these roads are in deplorable conditions. This study has proved this because transportation cost was reported as the commonest problem in the district.

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To help combat this physical linkage problem, the following strategies are suggested:

- the District Feeder Road Department should be given the necessary logistic support in cash or equipment to carry out either spot maintenance or general surface grading or graveling of feeder roads. The roads to be given priority are between Borae No.2. (the second largest district weekly market) and Chinderi - a proposed future service centre and

that between Ntewuase and Ehiamankyene.

- improve on the lake transport system so that the products of small scale industries can compete in the wider market outside the district.

This study has revealed that only 6.3 per cent of the products of small scale industries reach markets outside the district.

To improve on the lake transport system for the benefit of small scale industries products, an Inter-District Development Cooperation is suggested as a strategy. This is because a project like this will involve heavy capital investment on equipments and manpower organization.

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The districts to cooperate with Krachi district should be Sene and Gonja East. The investments areas should include repairs or acquisition of more efficient ferries, improvement on landing bays and establishment of regular lake routes between Grubi (Krachi district) and Gonja East district

(d) **Economic Linkages**

These are the linkages which deal with the economic aspects of small scale industries. They include market pattern, raw materials and intermediate inputs, capital flow. These linkages are very important and need to be strengthened. The

following strategies are suggested:

i. **Market Linkage Strategies**

One of the potentials, small scale entrepreneurs can tap to their advantage, is the presence of many periodic markets in the district. However, this study has revealed that these markets are spatially not well integrated. Strategies suggested include:

- a coordinated roster of market days to be prepared by officers of the industry and trade department of the district assembly. One advantage of this strategy is that it will facilitate the collection of market dues and taxes by the revenue department.

- these market days, it is suggested, should also be synchronized with market days of neighbouring district. This will allow more spatial integration with other markets outside the district.

- provision of market sheds, stalls and stores, so that small scale industries products can be protected from the sun and rain, properly displayed and unsold products could be kept at market sites. This will cut down on transportation costs and so maximise profit.

A well integrated market will facilitate the flow of raw materials from their primary producers to small scale industries, as well as the outward flow of intermediate inputs from one industry to another or from industry to final consumer.

II. Capital Flow Linkage

At present small scale entrepreneurs depend on either personal savings, family members or traditional money lenders for their capital. The scope of these sources to finance small scale industries in the district are limited considering their annual incomes. In order to get more capital and then expand their businesses beyond their present sizes, the author suggests small scale entrepreneurs should establish linkage with financial institutions in the district.

Unfortunately, at present, there is only one bank that is functioning, the Ghana Commercial Bank at Kete-Krachi. The Rural Agricultural Bank also at Kete-Krachi, up to the time of collecting the field data, was closed to the public. Since as stated earlier, banks are more willing to give loans to groups rather than individuals, the formation of small scale industrial cooperatives or unions, should be encouraged.

(e) **Technological Linkage**

The study has revealed that 64.4 per cent of tools and equipment used by small scale industrialists in the district come from outside the district.

While it is unthinkable, at this time, to resort completely to traditional forms of production, it is suggested that a combination of modern and traditional technologies be used in some of the industries. This will reduce the outward movements of capital. For instance, the gari industry can use simple cassava 'crater'.

Secondly, profits from mills, are presently marginal, because the mills are underutilised, because one of the problems reported was that there were to many mills. Therefore the use of appropriate technology is suggested as a strategy to check capital outflow as well as strengthen the linkage between carpentry or blacksmithing who produce the tools for the gari processing industry and the gari processing industry itself.

(f) **Service Delivery Linkage**

This refers to the linkage that avails services to small scale industries. For the purpose of this study the services include electricity, firewood, water, credit facilities, education, training and extension, transport system. Some of these like credit, education training and extension have

already been discussed. Therefore only the following are discussed in this section: energy supply linkage. water supply linkage and transport system linkage.

i. **Energy Supply Linkage**

There are two aspects to energy supply namely electricity and firewood.

The use of electricity by small scale industries in the district is limited. Out of the eleven milling industries surveyed, only 2 used public electricity in Kete-Krachi. The rest used private diesel driven motors.

The current Self-Help Rural Electrification Project (SHEP) is expected to supply electricity to most settlements in the district staring January 1996. The author suggests that the proposed rural centres of Chinderi, Osramani, Dormabin be given top priority it is from these centres that industrialization is expected to start.

II. **Water Service**

Most of the industries which use water, except for those in Kete-Krachi and Dambai, reported having seasonal problems with water supply. However, the Kete-Krachi District Assembly, has awarded a contract for the rehabilitation of water supply systems in the district. Four submersible pumps and pipelines

have been procured for the project in Kete township, Doramani, Chinderi and Dormabin. It is suggested that other large settlements like Banda, Borae 2 with many small scale industries, be included in this project. (Daily Graphic, Monday, January 16 p.8).

III. Transport Service Linkage

It has been shown that one of the reasons why transport costs were high was the limited number of vehicles plying the roads in the district, as well as between the district and neighbouring districts. In addition to the strategies already suggested under physical linkages, it is suggested that a link be established between small scale entrepreneur and the Ghana Private Road Transport Union (GPRTU) by holding regular meetings on prices determination. This will help standardize transport costs so that entrepreneurs can take their finished products to other markets inside as well as outside the district.

5.4 CONCLUSION

The study has sought to identify the spatial linkages existing between small scale industries in the district. The problems, constraints and potentials of small scale industries were also identified. The methodology used to carry out this investigation was mainly qualitative.

The study has shown that spatial linkages are stronger internally (within the district), especially within the settlements. This showed a weak outside district spatial linkage. However, to establish the strength of any linkage one has to be clear with the variable to be tested. For instance, in connection with supply of labour and raw material, the linkage identified was internal. In the case of marketing of final products, all except the product of the gari processing industry, marketed their products within the settlements. This again showed that the market for small scale industries was restricted. However, in terms of supply of tools, the linkage was stronger outside, implying an outward flow of capital.

Many different types of problems were reported. The commonest ones were acquisition of credit, acquisition of raw materials, acquisition of tools, provision of services and marketing.

Different types of constraints in relation to spatial linkages were identified. These included the presence of the lake, lack of qualified entrepreneurs, the one-man business nature of the industries that restricted capital acquisition, and long distance from source of raw materials.

High potentials were, however, identified and these included the youthful nature of the entrepreneurs, the high participation of women, availability of labour and the presence of many feeder roads.

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Strategies to strengthen the spatial linkages of small scale industries in the district have been suggested. These strategies are based mainly on the decentralized form of administration in the district. At the apex of these spatial linkage two district assembly departments are suggested. These are the district planning coordinating unit (DPCU) and the Industry and Trade department. It is suggested that when these departments are operationalised, they should offer the technical aspect of how to strengthen the spatial linkages of small scale industries.

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APPENDIX I.I

DEPARTMENT OF PLANNING
FACULTY OF ENVIRONMENTAL AND DEVELOPMENT STUDIES
University of Science and Technology, Kumasi

SPRING II

Interview Schedule

TOPIC: Strategies for Strengthening Spatial Linkages of Small Scale Industries for District Development The Case of Krachi District.

Introduction:

The researcher wishes to inform all his respondents that the information solicited is purely an academic exercise. They are therefore assured that their responses will be used for that purpose only and will be treated with maximum confidentiality.

Many thanks for sparing your time in respond.

Name of Interviewer:.....

Date:.....Time Started:.....Time Ended.....

Name of Settlement:.....

Kind of Industry:.....

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A. Entrepreneural Data (Only business owners)

1. Sex: 1 Male 2 Female

2. Age: .....

3. Educational background

0 None

1. Primary School Level only

2. Middle School level only

3. Secondary School level only

5. University Level

4. Job Training

0 None

1. Vocational Training

2. Apprenticeship

3. Others (Specify).....

5. Where did you do your training?

0 Not applicable

1. Same Settlement

2. Within district outside settlement

3. Outside district within region

4. Outside Region

B. Location of Industry

6. Why did you locate your business here?

1. Personal reasons (specify.....

.....)

2. Nearness to raw materials and or inputs

3. Nearness to market

4. Others (specify).....

C. Capital

7. How did you get your starting capital?

1. From personal savings

2. From family members

3. From traditional money lenders

5. From Cooperative

6. Others (specify.....)

8. Do you have any other source of getting credit to continue your business?

1. Yes ..... 2. No .....

If yes from whom? .....

9. What form does it take?

1. Cash 2. Raw materials

10. What are your major problems in obtaining credit?

1. ..... 2. .....

3. ..... 4. .....

5. .....

D. Labour

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11. What type of labour do you use?

1. Family labour 2. Own labour

3. Apprentices 4. Hired labour

12. Where do most of your labour come from?

1. Within settlement

2. Outside settlement within district

3. Outside district within region

4. Outside region

13. What are your problems in obtaining labour?

1. .....

2. .....

3. .....

4. .....

E. Inputs

14. What raw materials or semi-finished products do you use?

1. ..... 2. .....

3. ..... 4. .....

5. .....

15. What is the origin of?

16. Where do you obtain these raw materials from?

1. Within settlement

2. Within district

3. Outside the district

17. What is the average cost of these materials?

¢.....

18. What are your problems relating to supply of raw materials?

1. .....

2. .....

3. .....

4. .....

F. Technology and Production

19. What type of machinery or tools do you use?

1. ..... 2. .....

3. ..... 4. .....

5. ..... 6. .....

20. What is the source of the tools or machines you use in your production?

1. Locally made within settlement

2. Locally made but outside settlement within district

3. Locally made outside the district

4. Imported from outside the country.

21. Who repairs or services your tools or machines?

1. I do it myself

2. Take them to repair shop

3. Others (Specify.....)

22. Where is the repair shop located?

1. Not applicable
2. Within settlement
3. Within district
4. Kumasi
5. Accra
6. Other region

23. How much do you spend either monthly or yearly on tools or machines?

¢.....

24. What is the estimated cost of tools or machines or materials got outside the settlement (interviewer try to solicit an amount) ¢.....

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25. What are you main products?

Product	Price per unit
1.	.....
2.	.....
3.	.....
4.	.....

26. What are your main problems in obtaining tools/machine?

1. .....

2. .....

3. .....

4. .....

G. Marketing

27. Who are your main customers

1. local consumers
2. other manufacturing industries (specify.....)
3. Retailshop
4. traders or middlemen
5. Schools
6. Others (specify) .....

28. Where do the customer come from?

1. Within settlement
2. Within district outside settlement
3. Outside district within region
4. Outside region within country

29. Where do you sell your products

1. at work side
2. at home
3. in a shop
4. at market
5. others (specify.....)

30. How do your customers pay?

1. in cash
2. Credit
3. barter
4. Others (specify).....

31. What are the main problems you face with respect to your customers?

0 No problem

1 Lack of enough customers

2 Customers do not pay in time

3 High transportation cost

4 Customers do not collect their articles in time

5 Customers are not stable.

H. Information

32. How do you get information on the changes of the prices of inputs?

0 I get no information

1 through the radio

2 reading newspaper

3 through other entrepreneurs

4 through relatives living outside settlement

5 through customers especially traders/middlemen.

33. How often do you and other business owners meet to discuss either prices of goods or problems relating to production?

0 we do not meet

1 frequently

2 Occasionally.

34. What problems do you encounter in obtaining information about market prices?

1 .....

2 .....

4. we can also bid for district contracts.

39. Do you oat tax for your business?

1. Yes 2. No

If yes to whom? .....

If no why? .....

Thank you for your kind attention

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3 .....

4 .....

I. General Questions

35. Would you like to expand your business?

1. Yes 2. No

36. If yes, what do you think will be three main problems you would face?

1. Do not have the skills to manage a big business
2. No capital or credit facilities available within the district
3. Too much competition from other entrepreneurs
4. Not enough customers or market
5. Lack of raw materials/tools/machines.

37. Is your business a member of any organisation or Union?

1. Yes 2. No

If yes name of union

If no why?

38. Do you think merging with other enterprise of the same business to form cooperatives or partners can help you?

1. Yes 2. No

If yes how?

1. would make it easy to unify cost of production per unit.
2. would make it easy to buy raw materials in large quantities outside the district.
3. would make it easier for our products to reach the wider market.

MARKET DISTRICT

LOCATION OF MARKET	TYPE OF MARKETS	MARKET DAYS
DENTE SUB-DISTRICT		
1. Kete-Krachi *	Daily and Periodic	Thursdays
2. Osramani	Periodic	Wednesday
3. Ehamankyene *	Periodic	Once a week
4. Nkewuase *	Periodic	Tuesday
5. Monkra	Periodic	Saturday
NCHUMURU SUB-DISTRICT		
6. Banda *	Daily	everyday
7. Chindeni	Daily	everyday
8. Borae No.2 *	Periodic	Friday
9. Bejawse	Periodic	Saturday
10. Anyonamae/Boafri*	Periodic	Friday
11. Zongo Mancheu	Periodic	Monday
OTI SUB-DISTRICT		
12. Dambai *	Daily and Periodic	Monday
13. Asukawkaw *	Daily and periodic	Thursday
14. Katanga	Periodic	Monday
15. Dormabin *	Periodic	Sunday
16. Kparekpare	Periodic	Friday
17. Tokuroano	Periodic	Wednesday

* - Settlements where study was carried out Source Author's Field Survey, April, 1995.

APPENDIX 3.1 DAILY AND PERIODIC MARKETS IN KRACHI DISTRICT

LOCATION OF MARKET	TYPE OF MARKETS	MARKET DAYS
DENTE SUB-DISTRICT		
1. Kete-Krachi *	Daily and Periodic	Thursdays
2. Osramani	Periodic	Wednesday
3. Ehamankyene *	Periodic	Once a week
4. Nkewuase *	Periodic	Tuesday
5. Monkra	Periodic	Saturday
NCHUMURU SUB-DISTRICT		
6. Banda *	Daily	everyday
7. Chindeni	Daily	everyday
8. Borae No.2 *	Periodic	Friday
9. Bejawse	Periodic	Saturday
10. Anyonamae/Boafri*	Periodic	Friday
11. Zongo Mancheu	Periodic	Monday
OTI SUB-DISTRICT		
12. Dambai *	Daily and Periodic	Monday
13. Asukawkaw *	Daily and periodic	Thursday
14. Katanga	Periodic	Monday
15. Dormabin *	Periodic	Sunday
16. Kparekpare	Periodic	Friday
17. Tokraono	Periodic	Wednesday

* - Settlements where study was carried out.

Source: Author's Field Survey, April, 1995.