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RURAL DEVELOPMENT THROUGH AGRICULTURAL MODERNISATION IN GHANA: A CASE STUDY OF THE TONGU DISTRICT OF THE VOLTA REGION

A Thesis Presented to the Faculty of Agriculture of the University of Science and Technology, Kumasi, in partial fulfilment of the requirements for the Award of the Master of Science Degree in Regional Planning.

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VITA

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CHAPTER 1

INTRODUCTION

In recent years, rural development has received a great deal of attention in development literature, in national plans, on political platforms and in the lending programmes of most donor countries. This is because it has now been realised, that an improvement in the working and living conditions of the rural people is the first step towards the achievement of a balanced urban-rural development, which has come to be regarded as indispensable in any worthwhile development programme. However, the need for rural development is more pressing in the developing countries, where the rural sector is appreciably larger than the urban sector.

There is no doubt much has been done in Ghana by way of attempts to identify and to prescribe solutions to some of the thorny problems facing the economy. "One problem area that has been identified as critical and echoed in virtually every development plan since 1953 has been the condition of poverty that characterises the rural sector".[1] The problem of rural poverty has been seen as directly related to the rather "backward" subsistence nature of agriculture in the rural sector. The theoretical formulations was embodied in the vicious circle of poverty thesis made famous by Ragnar Nurkse; according to this thesis:

> the poverty of the mass of the rural population was a consequence of the very low productivity of the farming population. The low productivity led to low incomes. Little or nothing was left for savings or investment after consumption.[2]

The suspended 7-year development plan (1963/64-1969/70) emphasised the crucial role of agriculture in general economic development in Ghana in the following terms:

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[1] C.C.T. Blankson; "Rural Development through agricultural Modernisation in Ghana", Economic and Social Affairs Journal, Vol.2, No. 2, April (1976), P. 13.

[2] Ibid., p. 14.

> It is nonetheless obvious that however much progress is made in the non-agricultural sectors of the economy the general level of prosperity in Ghana cannot increase significantly unless agriculture which employs nearly 2/3 of the labour force also undergoes a revolutionary change.[3]

Although the importance of agriculture has been recognised yet it was allocated £G68m which was about 14.3% of the total budgetary expenditure while mining and industry had £109.3m (23%) of the total budgetary expenditure during the plan (ie. the seven year plan) period.[4] It can, however, be argued that the amount voted for agriculture was not meant to undermine the place of agriculture in economic development but perhaps the absorptive capacity of this sector was not very strong in the initial stages of our economic development. In addition the machinery needed for the mining sector are expensive and high salaries and wages are demanded by workers of the mining sector because of the risky nature of the work. Thus in the 1975-80 five-year development plan, agriculture was voted ₡999.065,876 which was 25% of the total budgetary expenditure while mining and industry had 12.8%.[5]

Economic development is characterised by a substantial increase in demand for agricultural products and failure to expand food supplies in pace with growth in demand can seriously impede economic growth. There is no doubt that agriculture is the mainstay of the economy of Ghana. Agriculture plays an important role in the lives of the rural population. For example in 1970 the percentage ratio of agriculture to the rural population was 80.5%, whereas 73.3% of all persons employed in the rural sector were engaged in agriculture. Furthermore, of all the people employed in agriculture in 1970, 90.1% lived in the rural areas.[6]

The first role of agriculture may seem obvious but on close examination we can see that its importance goes beyond the need to keep a growing

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[3]Planning Commission: Seven Year Development Plan (1963/64-1969/70) Government Printing Department, Accra, p. 45.

[4]Ibid., p. 50.

[5]Ghana Government; Five-Year Development Plan (1975-1980), Ghana Publishing Corporation, Tema, p. 68.

[6]C.K. Bnown; "A Package deal for Rural Development in Ghana", in Greenhill Journal of Administration, Vol.3, Nos. 1 and 2 (April-Sept. 1976) p.8.

population alive. If the food supply is increasing more slowly than the population, nutritional standards will either be lowered or will be maintained by increasing food imports. Spending scarce foreign exchange on food means that less is available to import capital, technology, skilled labour and management - the factors of production that tend to be in short supply in the country. Poor agricultural performance, hinders the growth of the rest of the economy and limits the resources available to promote development. Another important aspect of food production is its contribution to the formation of human capital. Malnutrition causes both mental and physical retardation and poor diets also affect general health. As a result worker absteeism is higher and on-the-job productivity lower than would be the case with a well nourished labour force. A slowly growing agricultural sector can also result in inflationary pressures. If domestic food production is not growing rapidly - and particularly if food imports are limited by foreign exchange constraints - both the absolute and the relative price of food will tend to rise. These inflationary effects will be particularly burdensome for the very poor, who spend 50% or more of their income on food.

The second major role of agriculture in the process of development is to provide a market for the products of the industrial sector. The speed of the industrialisation process itself will depend on how rapidly agricultural incomes are rising. If economic growth is confined to urban areas, the domestic market for manufactured goods will be very restricted and import substitution possibilities thus will be limited. In the early periods of economic growth, rising incomes in the agricultural sector can expand the market not only for light consumer goods (radios, bicycles, kitchen utensils) but also for agricultural implements.

The agricultural sector is important as a source of savings. That is if sufficient domestic food requirement can be provided then the scarce foreign exchange that may be used in importing food could be saved to build up foreign capital. In the same vein, increased food crop production by

the small scale farmer could lead to increased income for him to meet his basic needs, domestic capital can then be mobilised from their surplus earnings of these small-scale farmers. Agriculture and its closely related activities provide about 62% of the foreign exchange earnings for the country. Nevertheless, tapping the agricultural potential is not an easy task, even if the agricultural sector is growing rapidly. The task is even more difficult if agricultural output is increasing only enough to keep up with population growth. Poor agricultural performance hinders the growth of the rest of the economy and limits the resources available to promote development. Agriculture should also supply substantial amounts of foreign exchange and domestic revenue or capital for financing governmental activities, servicing of foreign debt and actual non farm investment.

Finally, agriculture employs the bulk of the labour force in the initial stages of development. In the long run, as this sector becomes developed it would then release labour for employment in the other sectors of the economy.

1.2 THE PROBLEM

Agriculture is the mainstay of the Ghanaian economy; its contribution to the gross national product (GNP) has been around 40% during recent years. The country abounds in arable land and about 70% of the population live in rural areas with cultivable and fertile land. About 23 million hectares of land are suitable for agricultural purposes but presently only about 3 million hectares are under cultivation.[7] The production of food crops is not at present adequate for the population hence the domestic production is now being supplemented by imports. Though the optimum utilization of the available land resources can provide ample food for the growing population and also adequate raw materials for some industries there are serious financial and other constraints which impede the development of the agricultural

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[7] Op.cit., p. 20.

sector. Farming is largely done by peasant farmers with holdings averaging about 3 hectares per farmer; they use mainly hoes and cutlasses.

The important role of agriculture in the economy makes it mandatory that its development should receive the highest attention in the planning strategy. Agriculture in 1974 contributed about 35.7% of the Gross Domestic Product (GDP) and employs about 65% of the labour force. Its contribution to the foreign exchange earnings of the country is about 62%. Agriculture also produces 60% of the industrial raw materials for the country's agro-based industries. The sector, however, is dominated by small-scale farmers who constitute about 95% of the farming population. Although agriculture has hitherto played a vital role in the development of the country and remains the mainstay of the economy of Ghana its organisation and development still remains a difficult task. Although about 50% or more of the land surface of Ghana is suitable for the production of all types of tropical agricultural produce, in 1970, only 60% of the total area was under food crops and the remainder under tree crops. As already indicated, the major operators in this sector are small scale farmers whose holdings scattered all over any given agricultural area, do not often exceed two hectares per farm family. A small portion of the operations in the sector is in the hands of medium and large scale private, commercial firms, public corporations and co-operatives. In 1974, most of the large scale farms accounted for less than 5% of total production in the sector.[8]

Maize and cassava are the main staple food for majority of Ghanaians; national annual production of maize from 1976 to 1980 reached an average of 440,000 tons but it is now on the decline. Production has averaged 10,000 tons in recent years and national yields have been about .10 ton per hectare.

Maize is the most important cereal in Ghana. It occupied 44% of the total land area sown to cereals in 1980, and accounted for an estimated 52% of the total cereal production. Estimated maize production in 1982 was

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[8]Op.cit., p. 22.

346,000 tons, but when allowances for seed losses, were made domestic availability fell to 221,500 tons. Since total demand is estimated to be around 475,000 tons this suggests a deficit of 253,500 tons.[9] It is this deficit which drove maize prices to record levels of ₵6,000/100 kilograms or more throughout 1983.

TABLE I

PRODUCTION OF MAIZE AND CASSAVA : FIGURES IN '000 METRIC TONS (1973)

REGION	MAIZE PRODUCTION	AREA IN HA.	CASSAVA PRODUCTION	AREA IN HA.
Western	1,001	103	1,508	642
Central	960	140	1,090	514
Eastern - G. Accra	1,050	196	2,024	708
Volta	2,228	997	3,549	960
Ashanti	2,441	883	3,028	840
Brong-Ahafo	2,820	866	2,930	880
Northern	242	109	1,008	601
Upper	100	131	1,000	554

Source: Ghana Grains Development Project 1st Annual Report (1975) p.13

As shown in table one above, the Volta Region ranked first in 1973 in the production of cassava and in terms of total hectarage it ranked first in maize production. Again according to the regional production targets for 1980, it was expected to produce 77,490 tons of maize and 797,754 tons of cassava (see Table II)

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[9] G. O. Edmeados and S. Twumasi-Afriyie; Ghana Grains Development Project, 4th Annual Report (1982), p. 3.

TABLE II

REGIONAL PRODUCTION TARGETS FOR MAIZE AND CASSAVA (1980) ('000 Metric tons)

REGION	MAIZE	CASSAVA
Western	54180	548992
Central	75600	531836
Eastern & G. Accra	45990	540414
Volta	77490	797754
Ashanti	147420	806332
Brong-Ahafo	135450	754864
Northern	49140	216629
Upper	44730	47179

Source: Five-Year Development Plan (1975-1980), p. 23

The Tongu district which is in the Volta Region is known for the cultivation of cassava, the production of which is carried out mainly in the followin towns: Adidome, Mafi-Kumase, Mafi-Sasekpe, Tefle, Aveyime and Battor (See figure 4). The district accounts for about 30% of the regional cassava production. Traders from other parts of the country patronise these products on market days in the various towns.

Though cultivation is carried on by peasant farmers whose farm sizes are small and methods of farming simple, yields are quite abundant in major farming seasons (March-August) - about five hundred kilograms that is five tons of maize per hectare are harvested and cassava about seven kilograms per hectare. Apart from farming, individuals have taken advantage of the relatively flat topography and the availability of pasture, especially, in the rainy season to rear cattle. This potential was recognised during the first republic hence, the setting up of state owned cattle ranch at Tsawla near Adidome in the early 1960s. Another cattle ranch was also established in 1975 at Aveyime by the Volta Regional Development Corporation to feed the Aveyime Tannery with hid and skins.

Fishing is another economic activity which is undertaken in the district by the local people since most of the settlements are found along the lower section of the Volta river. The traditional methods of fishing are used, these include cast-nets thrown from little dug-out canoes, hook and line, basket traps; the dominant species is tilapia (sprat). It is also in this district that the clam industry is carried on.

Notwithstanding the above potentials, agricultural production is on the decline in the district. According to the District Agricultural officer, maize production fell from about 1,075 metric tons to about 185 metric tons a year; while cassava production also fell from about 2,550 metric tons to about 275 from 1977 to the time of the survey (1983). This according to the agricultural officer, is partly due to inadequate financial support, migration of the youth of the population to urban areas and poor transportation network to link farming areas to market centres. Under such circumstances, the aged farmers can at best practise subsistence farming which slows down rapid economic and rural development.

1.3 OBJECTIVES OF THE STUDY

On the basis of the stated problems, the study will aim at providing acceptable recommendations which when adopted, will provide an efficient and effective agricultural policy for development of the district. The specific objectives that the study seeks to achieve are:

(i) to study the problems that face farmers in the district and to come out with recommendations to help improve the situation;

(ii) to examine how the Tongu district can be developed through increased agricultural production.

1.4 METHODOLOGY

Information for the study was gathered from primary and socondary sources. The primary source involved interviewing farmers; a sample of thirty farmers from five farming villages/towns in the district were interviewed using interview guide. The settlements were randomly chosen but the

farmers were chosen by the stratified sampling method so as to avoid the error of selecting only large/medium scale farmers only. Questions were asked on income level, educational standard of farmers, types of crops grown and methods of farming. Departments and institutions concerned with economic and agricultural development in the district were also consulted for the needed data.

Secondly, information which could not be gathered in the field was collected ffom both published and unpublished works. These pieces of information were carefully analysed and supported by relevant maps and charts to produce this work.

1.5 SIGNIFICANCE OF THE STUDY

It is hoped that the findings of this study will go a long way to improve agricultural production in the district. This will in turn, help to improve the development of the district. With increase in agricultural production, agro-based industries will be established to process excess output. This will create employment avenues for the increasing unemployed labour force in the district.

1.6 SELECTION OF STUDY AREA

The Tongu District as shown in Figure I, in the Volta Region, has been chosen for this study because of the following reasons:

(a) The district's potential for food production and livestock rearing as discussed in 1.2.

(b) The author is familiar with the district hence access to information in the field will not be difficult.

1.7 LIMITATIONS OF THE STUDY

The major constraints of the study were inadequate funds and time; which limited the number of places visited in the region to collect data. Lack of records and the unco-operative attitude of some officials were some of the limitations encountered in this study.

Farmers were also suspicious hence some of them were unwilling to declare accurate yields from their farms, as they thought they might be asked to pay more tax. Most of the farmers are illiterates and have no records of their farming activities.

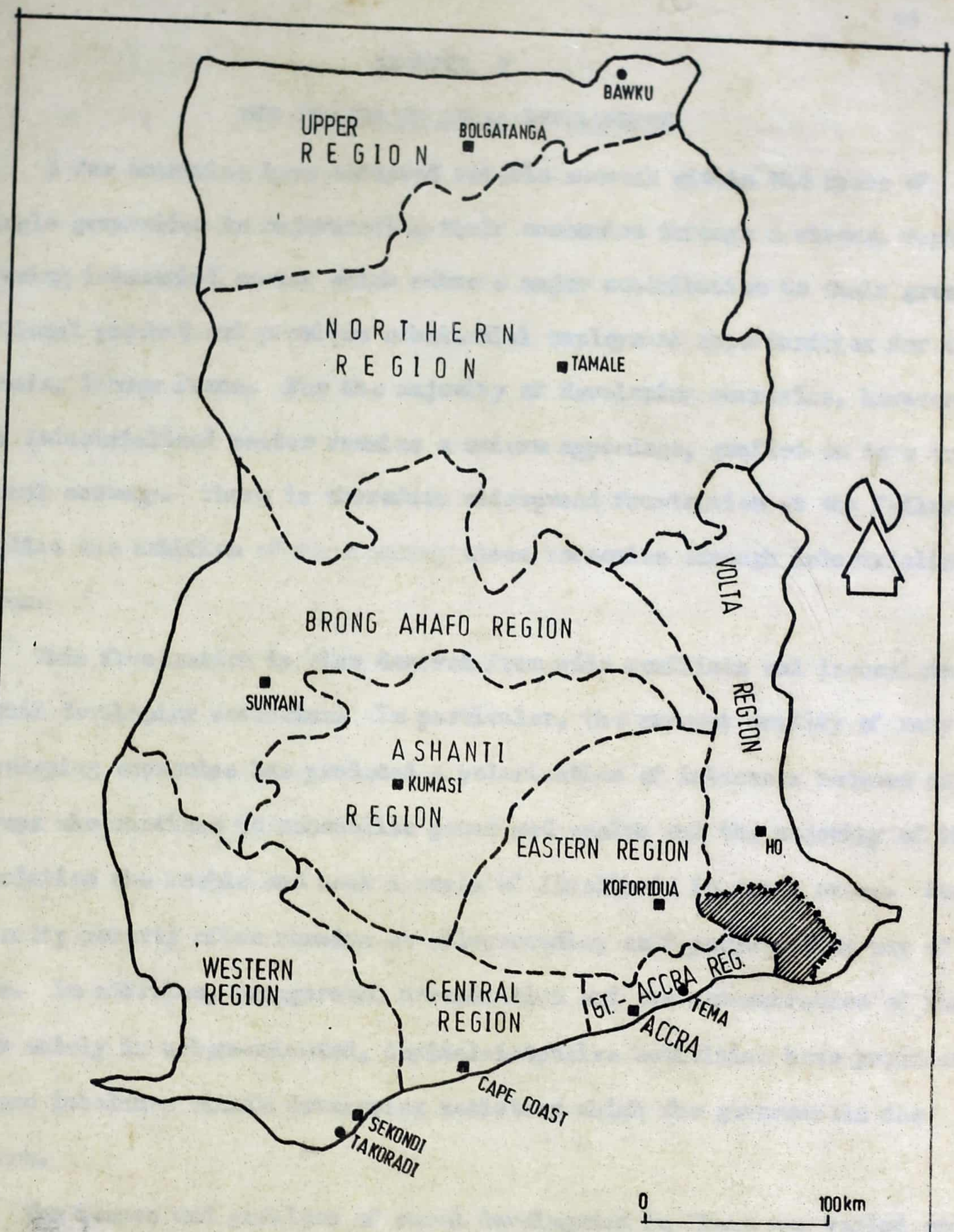
The problem of lack of data compelled the researcher to work with outdated information. For instance, most of the data collected were those between 1970 to 1980. But is is to be noted that the trends in these figures have not changed much. The only caution is that these figures will have to be revised as and when new data are obtained.

1.8 ORGANISATION OF REST OF THE STUDY

The second chapter discussed the concept of rural development and the role of agriculture in rural development. The experience of Kenya and Tanzania in adopting agriculture as a tool for rural development have been examined.

The past is the key to the present and the future. Therefore, the third chapter examined the various approaches to rural development, that has been attempted in Ghana. The weaknesses and effectiveness of these approaches have been noted. Chapter four, takes a close look at the geography of the study area (in terms of economic and social resources, population and settlement pattern).

Based on the case studies in chapter two, and the various approaches to rural development that have been attempted in Ghana. Guidelines for increased agricultural production in the Tongu District have been proposed in the final chapter.



LEGEND

■ REGIONAL CAPITAL

STUDY AREA (Tongu District)

——— INTERNATIONAL BOUNDARY

– – – REGIONAL BOUNDARIES

TONGU DISTRICT IN THE NATIONAL CONTEXT

CHAPTER 2

THE CONCEPT OF RURAL DEVELOPMENT

A few countries have achieved notable success within the space of single generation in rejuvenating their economics through a strong, rapidly growing industrial sector which makes a major contribution to their gross national product and provides substantial employment opportunities for their growing labour force. For the majority of developing countries, however, the industrialised sector remains a modern appendage, grafted on to a traditional economy. There is therefore widespread frustration at the failure to realise the ambition of transforming these economies through industrialisation.

This frustration is also derived from wide conflicts and inconsistencies within developing societies. In particular, the present duality of many developing economies has produced a polarisation of interests between elite groups who continue to monopolize power and wealth and the majority of the population who reside and seek a means of livelihodd in rural areas. For the majority poverty often remains an all-pervading self-perpetuating way of life. In addition, exaggerated urbanisation and the concentration of investment mainly in urban-oriented, capital-intensive activities have produced a severe imbalance within developing societies which few governments can ignore.

The issues and problems of rural development in Ghana are varied and complex. The diverse ecological, political, economic and socio-cultural conditions of these rural societies to present significant constraints to rapid and sustained development. Nevertheless the recognition of the crucial effects of these factors and conditions on development efforts, has led to greater emphasis being laid on these conditions as an essential aspect of national development and rural development planning.

2.1 CRITERIA FOR DISTINGUISHING A RURAL AREA

The core problems of widespread poverty, growing inequality, rapid population growth and rising unemployment all find their origins in the stagnation and often retrogression of economic life in rural areas.

A variety of indices are employed to distinguish rural areas tend to be characterised by predominance of primary economic actitity especially agriculture. Primary economic activity can be described as the first stage in the production process, for instance hunting and mining. The 1960 population census of Ghana (special report A) describes as a town and locality or settlement with a total population of 5,000 or more, hence any settlement whose population is less than 5,000 may be described as a village, hamlet or rural settlement. The rural areas also tend to be characterised by lower volumes of movement or spatial interaction; better presentation of natural or physical environment as compared to the artificial environment in the urban areas. There is low level of technology application and incomes are low in rural areas. There is lack of employment avenues other than agriculture as contrasted to the urban areas where there are a lot of employment opportunities. Again the rural areas are characterised by high illiteracy rate, poor social and infrastructural facilities. By contrast urban areas tend to be characterised by predominance of tertiary and secondary activities.

The above indices are applicable to our study area, for instance, the main occupation of the people is mainly primary activities which involve farming, fishing and animal rearing. Simple tools are used in the farming operations - hoes and cutlasses - and traditional methods of fishing are relied upon, these are setting of traps and casting nets from small dug-out canoes. The infrastructural base and other social amenities are either lacking or weak for rural development. The district also suffers from migration of its active population to the urban areas due to lack of employment avenues. These factors therefore combine to qualify the Tongu district a rural area hence the choice for this study.

In relative terms the rural areas remain poorly developed hence migration of the youth to the urban centres and the need for rural development or greater attention to rural communities.

2.2 DEFINITIONS OF RURAL DEVELOPMENT

There is no country in the world where the rural sector is as well developed as the urban. But the contention here is that national development should spread urbanization evenly so as to create a continuum or rural-urban standards of living but not a dramatic perceptible or polar conditions.

Rural development as either a concept or policy perscription has been variously conceived, interpreted and applied. It is therefore becoming increasingly difficult to adopt any single definition which satisfies the various suggested meanings of the term. Some see rural development as essentially an economic notion concerned with the economic development of the poor. Others consider an improvement in the real income of the rural population as the essence of rural development. Still other believe that the provision of some basic modern amenities such as decent housing, health facilities, potable water, electricity and telephone facilities - constitutes the meaning of rural development. It is as a result of the different interpretations that diverse attempts have been made to define rural development. Uma Lele, defines it as "improving living standards of the mass of the low income population residing in rural areas and making the process of their development self-sustaining".[1] The important features of her definition are: the mobilisation and allocation of resources so as to reach a desirable balance over-time between the welfare and productive services available to the subsistence rural sector; the allocation of resources to low income regions and classes; and the development of the appropriate skills and implementing capacity and the presence of institutions at the local, regional and national levels to

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[1]Uma Lele; The Design of Rural Development; Lessons from Africa, The John Hopkins Unitersity Press, Baltimore and London (1975), p. 20.

ensure the effective use of existing resources and to foster the mobilization of additional financial and human resources for continued development of the subsistence. sector.

A definition provided by the World Bank suggests that rural development is "A strategy designed to improve the economic and social life of a specific group of people - the rural peer. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas".[2] The rationale behind this definition is that most of the poorer and most disadvantaged people are found in rural areas. These people are often malnourished, least in contact with the modern world, least influential politically, least likely to possess adequate land and capital for a decent life, least able to help themselves and hardest for governments to help. Similarly Ominde, Ligale and Cahusac view rural development as "A series of quantitative and qualitative changes occurring among a living rural population and whose converging effects indicate in time in the standard of living and favourable changes in the way of life".[3] These qualitative changes will be discussed in chapter five.

The common denominator in all these conceptions is that they are all concerned with the improvement in one aspect or the life of the rural dweller. It is generally agreed that rural development is in one way or the other concerned with improving the well-being of the rural population. Rural development then may be defined as a strategy or a set of strategies or measures designed for the judicious utilisation and development of resources in order to improve the welfare of especially those residing in areas classified as rural.

Development can be used in a variety of ways, it is however, commonly used to describe those attributes and processes or action which have desirable effect of improving the welfare or well-being of man. It means a pro-

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[2]The World Bank; The Assault on World Poverty: Problems of Rural Development, Education and Health, Johns Hopkins University Press, London, (1975), p.

[3]Ominde, S.H., A.N. Ligale, Cahusac; "Urbanisation and Environment, in Kenya", A Paper presented at U.N. Conference on the Human Environment, Addis Ababa, (July 1971), p. 9.

cess of change through which a society involves the values of political leadership and other forms of social organisation necessary to mobilise and utilise resources in such a way as to maximise the opportunities available to the majority of his members for realisation to the fullest possible extent of their potentials as human beings. Development must serve the interest of the majority, no society is perfectly homogeneous, all are composed of competing interests and social change must benefit some and harm other but on balance it must be the interests of the majority that are advanced.

Development in the context of the rural milieu, must encompass more than just the economic sphere, it must include peoples well-being, freedom, changes and advancement in institutional, social and administrative structures from oppressive to liberal forms. Within this context programmes of rural development must be directed to the entire peasantry, to the totality of the rural population to enable them to move qualitatively and quantitatively from low level of material and spiritual endowment to a higher more abundant level. In this regard, the role of agriculture in rural development is discussed below.

2.3 AGRICULTURE AND RURAL DEVELOPMENT

The place of agriculture in economic development has been emphasised in the previous chapter and it has been noted that rural development has emerged to become an important concern for both donor agencies and national governments all over the world, particularly in the developing countries. The various approaches that have been used to tackle the rural problem suggest various weaknesses hence the need for a more effective way in solving the rural problem. The concept of Integrated Rural Development (IRD) has been widely acclaimed to offer greater scope for more effective programme design.

The concept derives from the need to concert sectoral policies and programmes established by various agencies and institutions and directed towards solving the broad problems of rural development. This involves tailoring a policy or programme not only to the particular requirements of a target group, but also taking into account other policies or programme attempting simultaneously to reach that same target group. As such, integration involves an awareness and a seeking of mutually compatible and reinforcing policies

or programmes that may well run counter to the established pattern of government administration, which is usually organised on sectoral lines with specialisation of function and careful division of responsibilities. Furthermore, the process of integration should apply within organisations, between their policy-making and operational divisions, as well as between different organisations when there is an overlap of interests.[4] In brief, the concept of IRD goes beyond individual projects designed to redress the poverty of certain target groups, and requires extended policies with the aims of reducing the disparity between urban and rural incomes and of increasing self-reliance in rural areas.

Uma Lele's studies of approaches to rural development in some African countries points out that, the design of the requisite institutional framework should emerge from consideration of the interaction of a variety of specific issues, which have profound impact on the design and performance of the whole programme.

(i) National policies, that is land tenure system, commodity pricing and marketing system, wages.

(ii) Administrative system; that is, the degree of centralisation and decentralisation of the governmental administrative set up.

(iii) Scope for institutional pluralism, that is, the distribution of development responsibility among the normal government structure; private commercial and traditional institutions and elective bodies.[5]

The above issues are discussed in the case study of rural development planning in Tanxania compared to Kenya's approach which are reviewed below.

2.4 AGRICULTURAL DEVELOPMENT (THE EAST AFRICAN EXPERIENCE)

In both Kenya and Tanzania there has been very strong concern for developing the rural areas through increased agricultural productivity since

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4 United Nations Industrial Development Organisation; Industrialisation and Rural Development, United Nationsl Publication, New York (1978), pp. 23-24.

5 Uma Lele; The Design of Rural Development; Lessons from Africa, The John Hopkins University Press, Baltimore and London (1975), p. 20.

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independence. As in Ghana, agriculture in both countries was mainly extensive subsistence cultivation. The farmer cultivated a variety of crops on the same piece of land so as to meet his family's requirements. There was no form of modernisation, irrigation nor crop rotation. No attempts were made to introduce new crops or new methods of farming. This reliance on subsistence agriculture resulted in the prevalent low standard of living. Realising the need for developing the rural areas, the governments of Tanzania and Kenya made vigorous efforts to modernise and commercialise the agricultural sector and to make it the cornerstone of economic development. The similarities between the problems and objectives of the two East African countries and Ghana's agricultural development makes the two countries a suitable choice as a case for study. There are experiences which can be drawn from this relative success of Tanzania and Kenya in their agricultural development. While these lessons can be adapted in our study area, it is borne in mind that there is quite some diversity in human and natural conditions so that the experiences cannot be adopted wholesale. But the experiences can still provide much valuable guidance in the techniques and organisation of agricultural development schemes, programmes and policies. In this example an attempt is made to identify the factors which were the most important causes of success of increase in agricultural production in Tanzania and Kenya. The criterion for success used is the extent to which stated or implied objectives were achieved. In view of this we shall look at the villagisation[6] and the Ujamaas in Tanzania and the general need for African agricultural development in Kenya, with particular reference to the Nyeri District.

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[6]Villagisation is the moving of scattered farmers into a central location which may allow economies of scale in the provision of services such as extension, marketing credit, imput supplies, health and transport facilities. Ujamaa involves villagisation but has broader political and organisational objectives including eventual collectivisation of farming.

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2.4.1 THE AGRICULTURAL SYSTEM IN TANZANIA PRIOR TO UJAMAA

Tanzania is predominantly a rural country. Less than 10% of the population is resident in cities and towns of 20,000 or more inhabitants. In 1967 out of a total of two and half million households about 350-400,000 were dependent on non-agricultural wage employment, 125-150,000 on agricultural wage employment and 1.8-2 million on agricultural self-employment. Almost one-third of monetised and over two-fifth of total G.D.P. in 1967 were derived from agriculture. Similarly over four-fifth of exports consisted of either raw or processed agricultural commodities. Tanzania is a relatively land abundant country. The population density was estimated to be 17 persons per square kilometre in 1976 and only 5% of the total land area was under cultivation in that year. It has been estimated that migration and flood control could increase the present cultivated area by 40% and thus a substantial land frontier exists. The land to man ratio (total cultivated area divided by rural population) was estimated to be 0.31 hectares in 1972 and the average farm size was 1.76 hectares. The agricultural sector was however dualistic and the overall average conceals huge differences in farm size between the peasant and the estate sector. It would appear therefore that even after allowing for the decline in the size of this sector since 1961, the average farm size in peasant agriculture was somewhat lower than 1.76 hectares.

In the early 1960s, Tanzanian agriculture consisted of about 2000 large farms and plantations and nearly 2 million peasant holdings. The former comprised sisal, tea, and coffee grown on large farms or plantations, small sugar estates and mixed farms largely centred on grain, pyrethrum and cattle. In terms of ownership patterns, about 20% were company owned, 50-60% European individual holdings, 10-15% Asian family ventures and a handful belonged to emergent African capitalist businesses. In the years immediately preceding independence, the large farm sector was estimated to account for 35% marketed output and 45% of agricultural exports. In addition it provided about half of the total African wage employment.

The dual system did not give rise to large numbers of landless peasants or sub-marginal peasants whose survival depended on working for large landholders. Inequality of landholding among Tanzanians was relatively low. In 1967 the typical small peasant family probably cultivated about 0.5-2 hectares, the typical middle peasant 2-7 hectares and perhaps the 50,000 proto kulaks 5-25 heatares. However, between 1961-67 there were signs of growing inequality. The proto-kulak group had become stronger largely through its control over co-operatives and links with government officials, and was perceived by many party leaders as poised to secure adoption of a rural capitalist strategy similar to that practised in Kenya.

While lack of access to some land was not a problem in Tanzania, the level of agricultural productivity and incomes was very low. Less than 3% of the total cultivated area was irrigated, rainfall was erratic and insufficient in many parts of the country and soil fertility was generally low. Peasant agriculture was charactersed by extensive and shifting cultivation with almost exclusive reliance on manual labour working with simple tools. Moreover, apart from regions where cash crop production has become well established peasant production was dominantly subsistence level and used no modern inputs.

It is estimated that by 1967 only some 15% of the rural population lived in villages or small towns. The majority lived in scattered homesteads or hamlets of 2 to 5 families. Tnother 15% were pastoralists with seasonal residential rotation patterns; this pattern of settlement meant, that purely from the standpoint of the conditions of agricultural production, the various villagisation programmes might be regarded as attempts to change to an extensive non-shifting mode of cultivation.[3]

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3 [3]Dharam Ghai and Reginald Herbold Gree; "Ujamaa and Villagisation in Tanzania" in Agrarian Systems and Rural Development (eds) Dharam Chai, Azizur Rahman Kham, Eddy Lee, Samir Radwan, Macmillan Press, London (1977), p. 230.

2.4.2 UJAMAA AND VILLAGISATION IN TANZANIA

The strategy for rural development pursued in Tanzania since 1967 has evoked widespread interest. The centre piece of this strategy is the attempt to transform the rural sector through the creation of Ujamaa villages. The Ujamaa villages are to serve as the key institution of an agrarian system designed to achieve simultaneously the objectives of political democracy, economic growth and egalitarian distribution of income and wealth. It is now more than a decade since the initiation of the Tanzanian experience and its study may be of interest to other African countries. Furthermore this experience is of interest because it constitutes a rare, if not a unique instance of an attempt to bring about a far-reaching structural change in a social context characterised by the relative absence of sharp inequalities in the rural sector and to achieve these changes rapidly without either violent revolution or a high level of coercion.

2.4.3 THE EVOLUTION OF AGRICULTURAL ORGANISATION AND POLICY

The agricultural system as it had evolved in Tanzania during the colonial era and in the early years of independence was generally recognised to suffer from a number of weaknesses. These included the existence of dualism, growing economic differentiation among small holders and regions, low productivity and low level of labour utilisation in the small holder sector and the pattern of rural settlement with a preponderance of isolated homesteads spread over a vast country. It was mainly to overcome these weaknesses that the concept of an agrarian system based on Ujamaa villages was first put forward by President Nyerere. Despite experiments in communal farming and village settlement which had been pursued in years preceding and following independence, it was the Arusha Declaration issued in February 1967, which worked a decisive turning point in the search for institutions and policies aimed at building rural socialism.

Its central themes were self-reliance, rural development, public control over the economy and social equity. While these have now become familiar themes in the literature on development policy, in 1967 they represented a

sharp break from the established priorities in most post-independent societies. In a Presidential paper "Socialism and Rural Development" published in (September 1967)[8], Nyerere argued that organisation of collective agricultural production at the village level would also make it possible to benefit from modern techniques of production. He envisaged three distinct stages, in the first stage the scattered small holders would move into villages to facilitate the distribution of services and to organise production more efficiently. Secondly, each village would initiate communal activities in an embryonic form. Thirdly the villagers would be persuaded that communal activity was the superior form of organisation and as a result would convert themselves into predominantly communal farmers with some provision for private plots.[9]

In the case of Kenya, the Swynnerton Plan was adopted to speed up the pace of agricultural development. The plan stressed the intensification of agriculture through the planting of each crops and mixed farming. The principal cash crops were coffee, pyretenun and sugar cane - these previously grown almost exclusively by white settler farmers. Apart from these crops, increased attention was to be given also to the production for the market of cotton, maize, rice, tobacco, fruits and vegetables. Mixed farming and dairying were also to be developed by introducing fodder crops and adequate disease control.

The objective was that the Africans should take up commercial farming at the same time the subsistence practice should be maintained to a certain extent, that is basic food self-sufficiency. The danger of excessive specialisation was to be avoided so that the farmers would be protected against the consequences of market depression, pests and diseases or their

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[8]Julius Nyerere; "Socialism and Rural Development", Presidential Paper, Government Printers Office, Dar es Salaam (1967).

[9]This is based on work done by Dharam Ghai and Reginald Herbold Green: "Ujamaa and Villagisation in Tanzania" in Agrarian Systems and Rural Development (eds) Dharam Ghai, Azizur Rahman Kham, Eddy Lee, Samire Radwan, Macmillan Press, London (1977), pp. 232-254.

own failure to cope with difficult crops. Development was to be carefully controlled with proper insistence on good cultural practices and planting of crops suited to pedologically suitable zones. These co-operative societies were able to plan, finance and execute cottage industries like processing excess farm products, the agencies responsible for price regulating came out with prices for agricultural products that tend to encourage farmers to produce more. Since marketing is a very complex process - it involves transporting, warehousing and retailing - the farmers were relieved of this burden by the co-operative societies and the various marketing agencies.

2.4.4 AGRICULTURE IN THE NYERI DISTRICT OF KENYA

The Nyeri district has an area of 312 square miles and the 1962 census gave a total population of 254,566. Ecologically the district is among the most favourable in Kenya. Rainfall is generally adequate and fairly reliable ranging between 35 and 40 inches per annum. The district is also well supplied with streams and rivers and is suitable for a wide variety of crops and livestock. The principal foodcrops grown are maize, Irish potatoes and sweet potatoes. Most of the commercial farming activity is devoted to coffee and tea cultivation in addition to dairying.

Coffee Production

For a long time the government prevented African farmers from cultivating coffee as a result of fear that pests and other diseases will spread from African farms to European farms. However, this fear was later on dispelled and Africans took up coffee cultivation. All coffee growers were required to join co-operatives and planting was regulated by the Department of Agriculture which initially also supplied seedlings.

The more "progressive" farmers sprayed their coffee and applied fertilizers. Spraying used to be done by teams employed by the co-operative societies but it was later realised that individual spraying was more effective. Some farmers however did not spray their plants until there was outbreak of pests and diseases. Yields accordingly varied from farmer to farmer. Farmers during the early stages appeared to find it difficult to

maintain high standards of cultivation consistently. In part this was due to the fact that output did not always fall immediately as a result of neglect. Many farmers also seemed to consider their income for coffee quite adequate even though yields were well below what could be obtained with better husbandry entailing more effort and expenditure. Other commercial crops or livestock rearing have had much less success. The increased prevalence of disease and the discouragement created by sharp fluctuation in market prices have inhibited the commercial production of Irish potatoes for which the district is favourable. Production and marketing of vegetables have also failed to develop on a large scale. The principal difficulties have been lack of specialised advice to growers and the complex problems of organizing, marketing and processing on an adequate scale.

2.4.5 FACTORS RESPONSIBLE FOR COMMERCIAL AGRICULTURAL DEVELOPMENT IN THE NYERI DISTRICT

Some of the factors that have contributed to commercial agricultural development in the district are favourable ecology and the general acceptability of the new ideas by African farmers. Other factors are land tenure changes, agricultural credit, co-operative and government agricultural services.

The impact of land consolidation and registration on the progress of agricultural development in the Nyeri district has been great. Many people bought large portions of fragmented land which were consolidated into single holdings. In this way one farmer owned large acreages of land instead of a number of small holdings at different places. Before the consolidation the average holding consisted of six to eight fragments, some of which were about nine to ten kilometres from the owners homes. Some fragments were often inadequately tilled or neglected and left in the bush. After consolidation the entire acreage was generally used. Moreover, the greater attention paid to their consolidated holdings seems to have had a favourable effect on yields.

Agriculture credit to farmers has played a prominent role in the

district. This was due to three reasons: Firstly, the readiness of government to provide funds for agriculture credit once land reform had been completed. Secondly, the entry of commercial banks into the business of extending financial assistance to small scale farmers. Finally the large investment requirement of dairying created a considerable demand for capital which the farmers themselves could not meet. Marketing co-operatives have played an important role in assisting the transition to a more commercial or market oriented agriculture. They provide the marketing link between individual farmers and large national marketing organizations, do a certain amount of processing and supply requisites of production and certain other services. The co-operatives have managed to finance most of their own plants and equipment. This was done with money acquired through savings and loans. This particularly striking in the case of the coffee societies which have managed to finance twenty-six (26) coffee factories out of their own resources.

Co-operatives, however, have failed to operate successfully in the organisation of production and marketing of vegetables and fruits. A number of farmers societies were formed to handle such produce but these failed to operate effectively. This was due partly to lack of organizational and managerial skill not only to organise production on an adequate scale but also the inability to cope with market risks.

Finally, government field staff helped farmers by emphasising on mechanical means of controlling soil erosion. The agricultural service provided the planting material and guidance necessary to the introduction of cash crops. Agricultural extension work in the field has been usefully supplemented with short courses of instructions given in crop and animal husbandry.10

10This is based on the work by John G. de Wilde: Experience with Agricultural Development in the Tropics, Vol. II, Johns Hopkins Press, Baltimore (1977) pp. 33-83.

2.4.6 PATTERNS OF VILLAGISATION IN TANZANIA

After a relatively slow start in 1967-68, following a call by Nyerere to 'go Ujamaa' there was a big spurt in the growth of villages over the period 1969-71, raising the total village population from 58,000 in 1968 to over 1.5m in 1971. (See Table II below).

TABLE III

GROWTH, IN NUMBER, AVERAGE AND TOTAL POPULATION OF VILLAGES

Year	Number	Ave. Population	Total Population ('000)	Percentage of National Population
1967	48	104	5	0.04
1968	180	322	58	0.5
1969	809	371	300	2.5
1970	1956	272	531	4.3
1971	4484	345	1545	12.3
1972	5556	357	1981	15.3
1973	5628	360	2028	15.3
1974	5008	511	2560	17.6
1975	6994	1260	9140	61.6
1976	7684	1703	13061	85.0

Source: Dharam Ghai and Reginald H. Green, Op.cit., p. 238.

The lull from 1972 to early 1974 was again followed by massive regional and national 'operations' under which vast numbers were moved to villages raising the proportion of village population from less than 18% in March 1974 to over 60% in March 1975. Nearly 90% of the rural population was reposted to be living in villages at the end of 1976. Thus a little over two years nearly 10 to 11 million people were incorporated into villages.

Typically the establishement of an Ujamaa village involved settlement on new lands. In early years the greatest progress in villagisation had been made in areas of low potential with sparse population depending largely on subsistence farming. Impatience with slow progress in villagisation led to

the adoption of a frontal approach in 1969. The government and the party came to play the dominant role in planning and implementing village settlements. At the same time, the emphasis shifted away from the creation of Ujamaa villages with communal production to mass villagisation based on block farming (in which peasants cultivate individual holdings within an overall block of land allocated to the village).

The villages and Ujamaa Villages Act of 1975 provides the legal institutional framework of the villages. It provides for registration of villages by a registrar thereby conforming legal status and certain rights and obligations. Under the Act, the village is deemed to be a multi-purpose co-operative society. There is provision for the construction of a village assembly consisting of all persons aged eighteen (10) years and above and for the election of village council by the village assembly. The village council is empowered to do all such acts and things as are necessary or expedient for the economic and social development of the village. It can plan and co-ordinate the work of villagers engaged in agriculture or other activities namely finance and planning, production and marketing, education, culture and social welfare, works and transport, security and defence.

These changes in policy relating to organisation of agricultural production were accompanied by equally far reaching changes in other aspects of rural policy. In 1972/73 there was a major attempt at decentralisation of rural development programmes. The regional and district administration were strenghened and invested with additional powers, responsibilities and resources. The role of the parent ministries was reduced to preparing broad policies and guidelines. There were also significant shifts in agriculture pricing policy. The price of maize was raised more than three-fold between 1972/73 and 1976/77, that of wheat more than doubled between 1973/74 and 1976/77 and that of pyrethrum and fire cured tobacco nearly doubled over the same period. (see Table III).

TABLE IV

PRODUCER PRICES FOR SELECTED AGRICULTURAL CROPS (SHS. PER KILO)

	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
Maize	.28	.26	.24	.26	.33	.50	.75	.80	.85
Rice (Paddy)	.52	-	.52	.56	.57	.53	1.00	1.00	1.20
Groundnuts (ton)				1028	1150	1500	2000	2500	-
Tea			5.80	5.85	5.85	5.85	7.00	.65	.65
Cassava (Grade I)				x85	.36	.36	.40	.50	.55

Source: Ibid., p. 241

2.4.7 IMPACT OF UJAMAA ON DEVELOPMENT

The main source of wealth in the economy of Tanzania is agriculture. In land ownership, disparities arose primarily from the existence of a few plantations and large mixed farms.

The majority of these were nationalised in the wake of the Arusha Declaration and became known as state farms. The distribution of land in the small holding sector which accounts for over 90% of the rural population was relatively egalitarian. Ujamaa villages tended to attract poor peasants and landless persons and to that extent they undoubtedly made a contribution to better land distribution. (See Table IV below).

TABLE V

SIZE, DISTRIBUTION OF LAND 1972

Farm Size (HA)	Number of Holdings	Percentage of Total Holdings
0.5	771954	31.5
0.5 - 1.0	651386	26.6
1.0 - 2.0	605291	24.7
2.0 - 3.0	218375	8.9
3.0 - 4.0	88696	3.6
4.0 - 5.0	49985	2.0
5.0 - 10.0	53252	2.2
10.0	11625	0.5

Source: Ibid., p. 244

But this contribution consisted more in opening up and settlement of new area than in redistribution of the already cultivated land especially in high potential land scarce areas. The mass cillagisation of 1974-76 has been quantitatively more important in promoting better land distribution. Although in these villages there is insignificant collective farming, each family is allocated an equal amount of personall plot whose size, however may vary from one village to another depending upon soil and climatic factors. Apart from

land the other main form of rural asset is livestock. There is considerable disparity in livestock ownership in areas where livestock accounts for a major population of economic activity.

One of the reasons for the move towards Ujamaa was its alleged superiority in efficiency over small-holder agriculture. It was argued that collective cultivation would lead to improved yields and higher productity through specialization and division of labour, adoption of more advanced technology, fuller utilisation of labour and more effective and lower cost provision of services such as extension advice, marketing, credit and supply of inputs like fertilizers and seeds. On the whole, the attempt to transform agricultural production on communal farms through heavy machinery did not prove economical.

Production often suffered because of machinery breakdown and delays in repairs or in receipt of spare parts. Gradually there was a shift of emphasis in favour of intermediate types of technology such as ox-ploughs. Labour mobilisation on non-farming projects has been far more important in generating higher level of labour utilisation. The establishment of new villages is associated with a massive amount of construction work involving houses, new classrooms, health centres, day-care centres, water-supplies etc. Villagisation has also made it profitable to establish a wide range of manufacturing, processing and servicing activities such as furniture-making, manufacture and repair of farm implements and handicrafts.

Another major argument in favour of villagisation has been the possibility of provision of social and economic services to the rural areas in a more effective and economical manner. This argument has been used for example in respect to health services, including family planning, education especially adult literacy and universal primary education, water supply, transportation, irrigation and electricity. Indeed one of the main criteria used in the siting of villages was the existence of proximity of certain core services such as schools, medical services and transport network. There has been a rapid expansion of many of these services. (See table V).

TABLE VI

PROVISION OF SOCIAL AMENITIES

		Population For Rural Health Centre	Access to Water Supply	Illiteracy	Enrolement Rate. Primary Education
National	1970	187901	13%	67.7%	34.7%
Level	1975	98650	25%	38.7%	54.4%
Co-Efficient of Regional	1970	0.58	.53	-	.22
Variation	1975	.30	.25	.26	.23

Source: Ibid., p. 251

2.5 LESSONS FROM THE CASE STUDIES

From the discussion of our two cases a number of factors emerge as being responsible for rural development programmes. These are (i) Project Conception (ii) Leadership and Project authority (iii) Local participation and (iv) Socio-political environment and national commitment. These are discussed in detail below.

(i) Project Conception

Planners must invariably grapple with the issue of how best to approach the rural development problem and it makes a lot of difference how carefully this essentially conceptual problem is resolved. The rural society that is typical of developing nations such as Kenya, Tanzania and Ghana, may be described by the word "decay" where there is a general picture of degeneration relative to the urban environment, where most of the basic amenities of living are lacking and productivity in the economy is declining. This situation may tempt planners to draw up a programme which would provide all the needed amenities while at the same time seeking to raise peasant productivity. This was the temptation to which Kenya and Tanzania and in fact most developing countries, succumbed until after independence when the conceptual weakness of the strategy was realised. This led to a shift in emphasis to

make the programme more production oriented instead of the largely welfare programme that it had become - agriculture offered the shortest alternative to realising any significant impact upon the rural economy.

The Tanzanian experience brought to the fore a crucial issue in planning for rural development - long term objectives versus short term development objectives. The Ujamaa and Nyeri programmes in Tanzania and Kenya avoided the error of pre-independence planners in giving greater emphasis to promoting agricultural development. However in the Kenyan case emphasis was laid on cash crops and plantation agriculture unlike the Tanzanian situation which emphasised foodcrop as well as cash crop cultivation, attention was also focussed on the small holder farmer. Our studies show clearly that the issues of economic development are often decided by political factors which operate at both local and national levels. In both Kenya and India* the composite structure of the rural population and the forces generated in the interaction accounted significantly for the distribution of the benefits of the development issues as well as their participation. The main issues were determined by the tenural system. In Tanzania the Peasant farmers were mainly nomads hence they controlled vast hectares of land with a sparse but homogeneous population. However, the Kenyan Peasant farmer was rendered landless by land consolidation and introduction of large scale plantation by white settlers. As discussed in chapter three, the tenural system in the Tongu District differs from both that of Kenya and Tanzania. The land belongs to groups of families and clans, however the population is homogeneous and nucleated.

Thus the success of rural development effort will depend on the structure of the target population and the extent to which the project conception

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*Official (and national) concern with rural development has been very strong since 1947 when India gained her Independence. The population was overwhelmingly rural, as recently as 1967 roughly 80% of the total population still lived in the rural area, inhabited mainly by peasants and their families who were poor, illiterate and outside the mainstream of modern life. A community development programme was launched which had as one of its major objectives as the involvement of the rural people in planning, organising and excuting people's programmes for all-sided village development, particularly social, economic and political.

and strategy reflects and manages the dynamics of social and political interaction within the group. It is in this view that there was a regrouping of the scattered villages in the Tanzanian situation to achieve the objective of the programme. However there will be no relocation of the population in our study area.

(ii) Leadership and Project Authority

The vital role of leadership and project authority in an integrated rural development programme is strongly supported by the Ujamaa and Villagisation Programme. In this regard the Ujamaa programme was given legal backing by the Villages and Ujamaa Villages Act of 1975 as discussed earlier. This legal backing was accompanied by the necessary policy changes relating to organisation of agricultural production and equally far reaching changes in rural development policy. The importance of bringing the project authority close to the grassroot level - decentralisation - was recognised in the Tanzanian case. This was not the case in the Nyeri programme of Kenya and also compared with our own experience the various approaches to rural development failed to have effective decentralisation of the administrative structures. Thus the designers of the plan left the vital issue of policy needed to guide the efforts at state and local levels to chance.

(iii) Local Participation

The raison d'etre of the importance given to local participation in rural development programmes is that it is only by getting villagers involved in the process of improving their lot through their own efforts that we can develop their capacity and self-reliance; a co-operative way of life in them. It is they who have to both accept and execute the programme for their own improvement. This is the true significance of people's participation. Thus it involves raising their aspirations and to get them committed to the processes of development and cultural change.

In our case studies we saw that the local people were relegated to the periphery in the Nyeri programme of Kenya as a result of the project conception - land consolidation and extensive plantation agriculture. This

has resulted in the decrease in foodcrops production for instance maize, the creation of landless group in the rural areas who were compelled to work on these plantations for a meagre monthly salary which could not keep them above the poverty line. However in the Tanzanian situation co-operative societies were formed in all villages. These societies undertook the planning and execution of development projects, the financing of cottage industries which absorbed the unemployed in the rural areas and consequently slowing down the exodus to the urban centres.

(iv) Socio-Political Environment

If there is no positive commitment of the political authority to clear and articulate objectives of rural development involving substantial reforms in rural areas very little can be achieved in that direction. The point being emphasized here is that rural development is a social change process which has implications for the dynamics of social and political forces within the society. It follows that the change agency itself must either be invested with political authority or have access to it. Obviously national commitment to a policy of rural development means much more than its constitutional provision. It means more than pronouncements on political platforms. It involves the attitudes of political leaders, a clear sense of direction and the actual integration of civil and public service institutions with development as its goal. These qualities have been displayed in the political leadership and national commitment in Tanzania while it was absent in the Kenyan case.

The discussion of our two case studies have highlighted a number of key issues in rural development. From the failures and successes of the case studies, we would be able to offer a useful guideline for application in the Tongu District - our main interest in this study.

CHAPTER 3

APPROACHES TO RURAL DEVELOPMENT IN GHANA

Ghana's experience of some twenty-five years or so with active economic development planning has revealed certain areas of weakness in the country. One such area is the concentration of development projects in the urban centres. Rural poverty generates exodus of population from rural to urban areas; this not only intensifies rural poverty but also gives rise to urban unemployment. Of the two sides of the problem, the rural aspect appears to be the more urgent and the more acute because in Ghana, as in most other developing countries, it is in the rural areas that the greater proportion of the active labour force resides. Also for such reasons as growing attractiveness of life in urban areas, more trade union activities, unfavourable terms of exchange for the products of the rural areas; the rural areas are likely to be greatly disadvantaged in a growing economy unless special efforts are made by the central government to create conditions for more balanced development.

Rural development is the process of induced social change in the rural areas through the alignment of the central government's socio-economic and political goals with those desired by the rural people for their own benefit. The concept therefore has social, economic and political dimensions. In concrete terms, the desired development should involve such social goals as improved conditions of health and nutrition, augmented educational opportunities, expanded social welfare services and increased mobility, as well as such economic ones like higher agricultural production and increased rural employment opportunities. The political or nation-building goals include not only a grezter political integration of the rural people through grassroots participation in public decision making and through the achievement of equity in the spatial allocation of development projects, but also a stepping up of efforts by the government to make its presence felt and its goodwill and purposes understood among the rural areas. Management of rural development then almost boils down to an application of Development Administration in

rural areas, that is, management of resources, by a government of an economically poor country, with a view to optimising the government's output (in terms of quality and quantity) in the economic, social and political fields.

In the early 1960s in Ghana, there was a new and intensive post-independence interest in the need to find ways and means to ameliorate conditions of the populations in rural areas as well as to stimulate and increase agricultural production to meet rising food requirements. Furthermore, this awareness was heightened by the recognition of the increasing pressure of population on scarce and inadequate resources. In the past, classic development models and development trends themselves have stressed urban as against rural growth, large scale industralisation as against small scale. In most countries, however, this model did not achieve the desired levels of growth nor did it substantially improve the quality of life for the mass of the population. In fact, the reality of current problems and issues plaguing rural areas in Ghana in general indicate that, may be quite the opposite approach is needed in meeting our problems. It is essential that our national agricultural programme meets a substantial part of the national food requirements. It is equally necessary that a rural development programme takes into account improvements in rural conditions of health, sanitation, water supply and access to basic amenities of life which are at present missing in the rural environment.

Though the problems of rural areas have been realised and the need to solve them is generally agreed upon, policy makers have not agreed on the best approach to solving the rural problems. In fact there are as many approaches to the rural problem as there are objectives. Some of the approaches include: the social amenity approach; the increased agricultural production approach; the accelerated project implementation approach; community development and rural animation approach; the agrarian reform approach; the approach through rural crafts and small undertakings and finally what has been variously called the integrated approach or multi-sectoral or fully comprehensive approach or multi-sectoral or fully comprehensive approach to

rural development.[1]

In Ghana three different approaches have, over the years, been recognised and adopted so far by successive governments. These are:

(i) The Social Amenity Approach

(ii) The Increased Agricultural Production Approach

(iii) The Accelerated Project Implementation Approach

(iv) The Integrated Rural Development Approach.

3.1 THE SOCIAL AMENITY APPROACH

The social amenity approach to solving the rural problem lays emphasis on the provision of social services and amenities for rural communities. Exponents of this approach argue that although the rural areas have made considerable contributions to the overall development of the country's economy by the production of basic agricultural raw materials, for export and local consumption, they have been completely neglected in the distribution of the good things in life. They therefore argue that through the distribution of social amenities and services the gap in living conditions between urban and rural residents will be bridged, while at the same time rural-urban migration will be discouraged and urban residents will be attracteddto rural areas. This approach was adopted in the late colonial period. As a strategy for rural development it canbe said that the provision of the basic amenities in the rural areas might in the long run not only lead to increased productivity but also serve as a first step toward the achievement of a balanced urban-rural development.

On the other hand it can be argued that as a sole strategy for rural development the social amenity appreach is an expensive one and that the constraints of costs will limit the speed with which central government funds can be spent on the provision of these basic social services to the

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[1] I.L.O.; "Social Change and Social Progress in Affica". Report of the Director-General. Third African Regional Conference, Accra (1969), P. 10.

rural communities. This is especially the case in developing countries like Ghana where other sectors of the economy are yet to develop fully to enable funds from the productive sector to be diverted for the provision of these amenities in the rural areas. This view is endorsed by Uma Lele, who points out that in many rural areas the demand for a wide range of social services is substantial whereas the financial, manpower and organisational resources for effective delivery of social services are often extremely limited.[2]

Finally, although almost the various successive governments of Ghana have tried this approach it is doubtful whether the preferences of rural folks have been ascertained before the amenities are provided. Furthermore, it appears that the provision of amenities is not based on the economic potential and factor proportions in these areas, nor is it an integral part of a comprehensive rural development plan, instead it is based on the political influence of groups who manage to lobby for such amenities. The real problem with the single project approach is that facilities may be introduced in the wrong sequence. Some of the single projects such as potable water is definitely needed. Knowledge of the sequence in which those social amenities should be provided will have provided the proper linkages which would have led to the sustained development of the rural sector as in the Tanzanian experience.

In effect this approach hardly takes into consideration the close interrelationship among the various sectors of the economy with the result that projects tend to be sporadic, disjointed and uncoordinated and hardly make any appreciable impact on the development of the rural areas. In addition the sectoral approach to rural development does not encourage the involvement of local leadership which could actively participate in a decentralised system of planning and implementation based on local resources.

3.2 THE INCREASED AGRICULTURAL PRODUCTION APPROACH

The basic assumption underlying this approach is that increased agricul-

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[2]Uma Lele; The Design of Rural Development: Lessons from Africa, Johns Hopkins University Press, Baltimore and London (1975), p. 122.

tural production will enable the rural population to provide itself with some of the basic social amenities generally lacking in the rural areas. There are a number of ingredients to a programme of improved agricultural expansion. Some of these are; improved agricultural extension services; improved feeder road network, better organised co-operative movements availability of credit on easy terms to the farmers. This approach was adopted in 1970 as follows:

> In order to promote increased agricultural production in the rural areas, government during the 1970-1971 financial year will concentrate on the development of few critical commodities, accelerate the feeder roads construction programme throughout the coutry, expand extension service in the use of fertilisers to farmers in the rural areas, improve the quality of mechanisation services to the farmer, increase agricultural credit facilities by expanding the work of the Agricultural Development Bank and consolidate and stregthen existing agricultural co-operative organisations servicing the rural areas.[3]

In spite of these attempts to increase agricultural production by successive governments, the level of agricultural productivity failed to improve as shown in Table VI. In addition to climatic factors, which contribute to the decline in agricultural output; outdated techniques of cultivation, lack of efficient marketing, storage and processing facilities thwart the efforts of the few hardworking peasant farmers.

TABLE VII
AREA AND PRODUCTION OF SELECTED CROPS (AREA IN '000 HECTARES: PRODUCTION IN '000 TONS) - 1970-74

Crop	1970		1971		1972		1973		1974	
	Area	Prod	Area	Prod	Area	Prod	Area	Prod	Area	Prod
Maize	997	378	997	378	960	396	1001	431	1050	478
Cassava	866	2441	866	2441	940	2828	883	2820	960	3549
Groundnuts	242	100	242	100	226	89	196	120	274	146
Garden Eggs	20	10	20	10	26	21	24	20	34	28
Pepper	69	93	69	93	102	139	109	132	131	146

Source: Five-Year Development Plan (1975/76-1979/80) Part II, pp. 3-6.

[3]Ghana Government; One Year Development Plan (July 1970-1971), Ghana Publishing Corporation, Accra (1970), p. 183.

As illustrated in Table VI, it can be observed that the production of these staple crops have been on the decline except cassava which has certain advantages O it withstands poor soil conditions - over other staple crops. It is thus necessary that vigorous efforts must be made to increase agricultural production in the Tongu district as achieved in Tanzania under the Ujamaa programme. The loan schemes meant to help the prospective farmer, in the country failed because those who benefited were either economically self-sustaining or used the money for purposes other than farming and many more defaulted in payment. There is also the danger that large scale plantation farming by foreign companies and individuals would precipitate the sort of change in the land tenure system, that would result in land hunger among the rural people. The argument here is not that the large scale plantation farmers cannot produce the needed foodcrops, but rather the experience in our country during the 1960s, where substantial proportion of funds for agricultural investment to large-scale, government-operated estates which involved heavy capital outlays for mechanization proved unsuccessful. It is therefore necessary to focus attention on the small-scale farmers who account for the bulk of agricultural output in Ghana as in the case of Tanzania but whose massive potential is yet to be realised. In addition poverty in most developing countries, still remains a rural phenomenon. The basic needs of the small-scale farmers could be met if he is encouraged to increase production, which will in turn lead to an increase in his earnings. In effect the integrated or wholistic approach to the rural question as in the Tanzanian approach, which focusses attention on the small-scale farmer should be the foundation stone for rural development. (This is discussed in the next chapter)

3.3 THE ACCELERATED PROJECT IMPLEMENTATION APPROACH

This strategy of rural development was first tried in 1968. The basic assumption underlying this approach is that, since every year the government invests substantial amounts of resources in the improvement of the rural

areas through the annual development budget. It is necessary to ensure that an effective machinery exists at the regional and district levels, for the prompt and efficient implementation of various projects and programmes outlined in the annual budget. The main objective of this approach is the attempt to decentralise the decision-making process.

Regional Planning Committees were thus established in all the regions. These committees were to serve as the framework within which the execution of development projects, could be planned and effectively monitored. These committees had the basic function of identifying new opportunities for development, reporting on progress being made on the execution of government development projects, and finally forging a link between the central government and private enterprise. In 1972, a further attempt towards decentralization was made with the establishment of Regional Development Corporations.

Quite importantly, decentralization should be seen as a means of involving the grassroot groups and organisations in the development process. The regional planning Committees have had but a minimal impact on decision-making at the regional centres. An effective decentralization process with a leagal backing is needed in Ghana, like the Villages Act of 1975 in Tanzania, to facilitate decision-making and implementation at grassroot and will be binding at the national level.

3.4 INTEGRATED RURAL DEVELOPMENT APPROACH

The concept of integrated rural development derives from the need to concert sectoral policies and programmes established by various agencies and institutions and directed towards solving the broad problems of rural development. The approach is now generally accepted that only an integrated approach will help solve the problems of the rural areas. It involves a set of technical, social, cultural and institutional measures which are taken and implemented; in order to raise the whole pattern of living of the rural folks. As such, integration involves an awareness, and a seeking, of mutually compatible and reinforcing policies or programmes that may well run counter to the established pattern of government administration, which is usually

organised on sectoral lines with specialization of function and careful division of responsibilities.

The concept goes beyond individual projects designed to redress the poverty of certain target groups, and requires extended policies with the aims of reducing the disparity between urban and rural incomes and of increasing self-reliance in rural areas. There are four levels at which decisions and actions need to be integrated in order to make a major contribution to the process of rural development. These are:

(a) Setting the objectives for the programme or project (including the identification of the needs and resources of target groups)

(b) Design of the programme or project and the allocation of resources to it;

(c) Management and reappraisal of the programme or project;

(d) Participation by members of the target groups in the implementation of the programme or project.

It must be pointed out that the above approach has never been adopted as a national policy. However, it is being experimented in the Yensi Valley of the Akwapim District. The results are not yet fully known as to determine the success or otherwise of the programme.

In her short experience with the idea of rural development, Ghana has had a number of approaches with mixed results. However, a missing link in the various rural development efforts has been a satisfactory conceptual framework within which to organise rural development. This absence of a framework, coupled with the lack of a comprehensive rural development policy, has made it easy for continuity in rural development efforts to be further jeopardized by rapid changes of government. The result is that very often the rural people who are the target group of rural development effort are left out in the formulation, planning, assessment of local needs and implementation of these programmes. Thus from the beginning the programmes become out of tune with local aspirations and sentiments, local initiative and enthusiasm for self-improvement is frustrated. For instance, in the 1960s a

state-owned farm was established in the Tongu district as well as a piggery project. These two projects formulated at the national level failed, partly due to lack of involvement of the local people in the planning and implementation, however, other factors like mismanagement contributed to their failure. Similar projects established in other parts of the country suffered from the same fate partly due to the above reasons. Again, in a new drive to develop the rural areas through agricultural modernisation, in 1981, the then government launched an agricultural project at Oyarefa, near Accra. This was a settlement farm project, thus young farmers were brought in to work for monthly salaries hence the element of participation and ownership was again missing. If local initiative were to be involved, the question of ownership would have been settled and loans could have been given to these farmers instead of wages. In the end, these young farmers complained of low wages and finally abandoned the farm.

We can thus sum up that the efforts of successive governments to develop the rural areas have not had the desired impact as a result of the following factors: Firstly, serious and persistence efforts have not been made to modernise agriculture and adopt it as the basis for rural development. Agrarian reform and rural development will require both equitable access to and efficient use of resources in rural areas.

Secondly, the various national programmes/policies designed by successive governments have not been pursued to logical conclusion. One may mention here that one of the factors is the frequent changes in government. National development priorities and policies must foster flow of resources to the rural sector and must provide pricing and fiscal incentives for increased production and equitable distribution.

Thirdly, local participation in the conception, planning and implementation of rural development has been minimal. Rural development through agricultural modernisation requires decentralisation of decision making and determined efforts to organise the rural people. It is only then can people's participation, planning and implementation of development programmes be really effective at the grassroots level.

In sum, the implementation of an integrated rural development policy lies in the re-arrangement of government structures and procedures so as to modernise and adopt agriculture as the bedrock of rural development. This restructuring is discussed in the fifth chapter.

CHAPTER IV

SOCIO-ECONOMIC BASE OF THE DISTRICT

Physical conditions such as soils, climate and vegetation affect agricultural potentiality of an area, but the extent to which these factors influence agricultural production largely depends on the socio-economic and technological level of the peole.

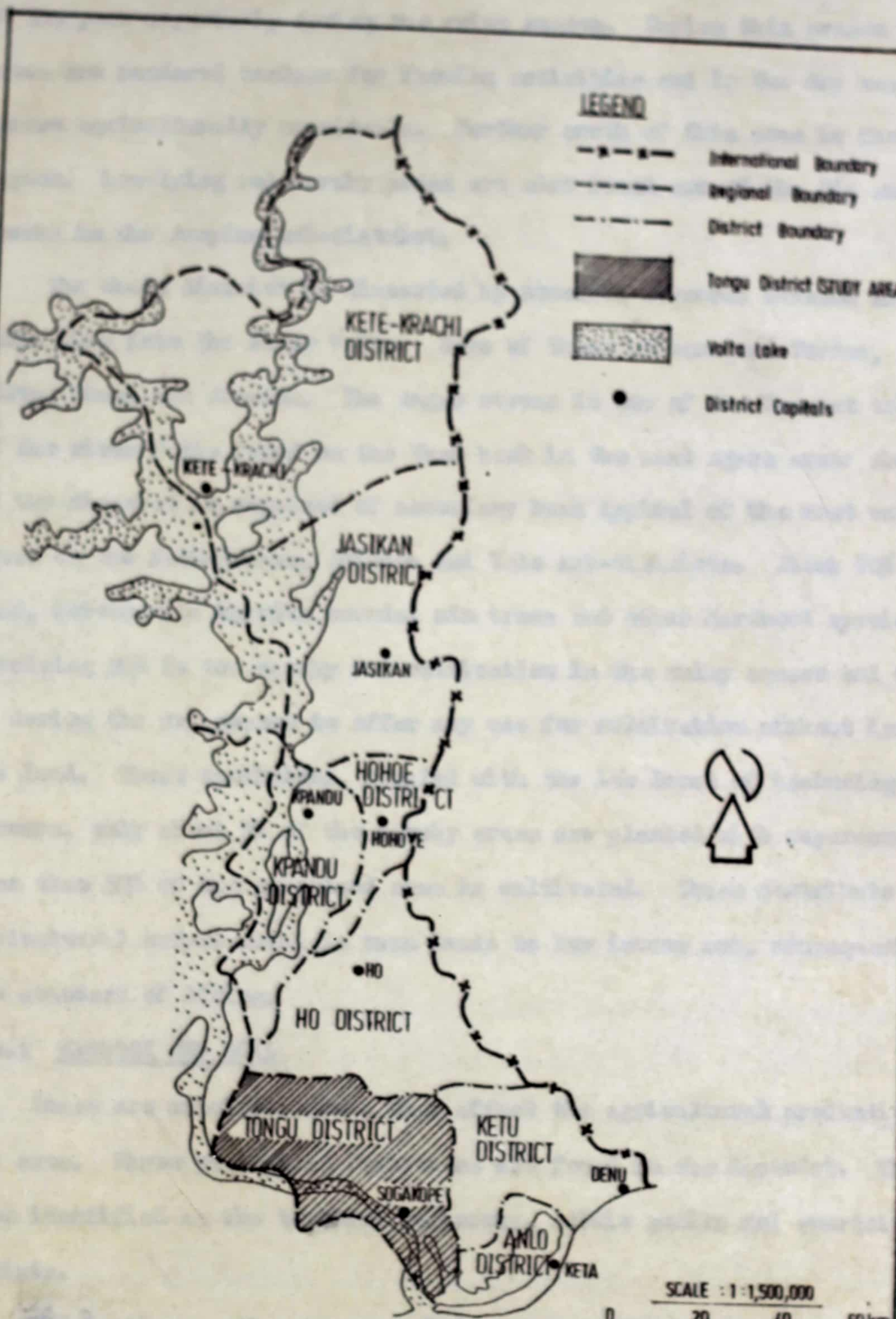
In chapter three, Ghana's approaches to rural development at the various stages of her development were discussed. It must be emphasised that the approaches discussed are not mutually exclusive and within a given period two or more of them may be adopted simultaneously. We shall now take a close look at the study area.

4.1 GEOGRAPHY OF THE TONGU DISTRICT

The Tongu District is situated in the southern section of the Volta Region. The District lies between latitudes 6° and 6°30' North of the equator and longitudes 15° 45' East. It is bounded in the north by the Ho district, in the south by the Ga-Adangbe District, on the West lies Kaoga District in the Eastern Region, the eastern boundary is shared by the Ketu and Anlo Districts respectively (See Figure 2). The lower section of the Volta river flows along the western side of the district and enters the Atlantic Ocean at Ada. The whole district covers about 1000 square kilometres.

4.1.1 PHYSICAL FEATURES

The district is an extension of the Accra Plains and is generally a low-land area and undulating. The lowest parts are found south which are well below the 17 metres contour; and the highest parts are found in the northern section. There are isolated hills in the north reaching considerable heights, some of these are the Awakpe near Awakpedome, the Adakpato with a height of about 120 metres and the Nukportoto. Others include Asiekpeto with a height of which are also found in the Aveyime sub-district. All these hills are almost weathered to very low levels, except the Shai Hills of the Osudoku area in the Eastern Region. The extensively low lying areas which are located in the Dabala-Adutor area are covered at various places by the Yorta, Tside and Aka



TONGU DISTRICT
IN THE REGIONAL CONTEXT

Creeks. These areas therefore become very marshy for a considerable period of the year especially during the rainy season. During this season these areas are rendered useless for farming activities and in the dry season they become agriculturally unsuitable. Further south of this area is the Avu lagoon. Low-lying and marshy areas are also found around the Bla and Ke creeks in the Aveyime sub-district.

The whole district is dissected by numerous seasonal streams some of which flow into the River Volta. Some of these streams are Torder, Alabo, Bletu, Gbaga and Atsatsa. The Angaw stream is one of the largest tributaries of the river Volta found on the West bank in the west Agave area: About 20% of the district is composed of secondary bush typical of the most wetter areas in the Mafi-Kumase, Adidome and Volo sub-districts. About 60% is grass-land, dotted with termite mounds, nim trees and other hardwood species. The remaining 20% is too marshy for cultivation in the rainy season and too caked up during the dry season to offer any use for cultivation without irrigating the land. These conditions, coupled with the low level of technology of farmers, only about 5% of the marshy areas are planted with sugarcane, while less than 30% of the grassland area is cultivated. These contribute to low agricultural output which in turn leads to low income and, consequently, the low standard of living.

4.1.2 <u>GEOLOGY AND SOIL</u>

These are crucial factors that affect the agricultural productivity of any area. Three geological formations are found in the district. These have been identified as the tertiary sediments, acidic gneiss and quartzites schists.

The tertiary sediments are mainly red terrestial deposits consisting of unstratified and unconsolidated sand, sandy-clay and gravel with the portion of clay varying from place to place. Soils that developed in these deposits are identified as the Toje, Sogakope, Agawtaw, Ohawu and Agbozume series.

The acidic gneiss rocks occur over the western part of the district and

are rich in hornblende and form the Agawtaw Series. Soils that developed over this series are laminated clay, panning in the dry season.

The quartzite, schists are found over the outlier of the Togo rocks and give rise mainly to ironstone concretions and iron pan soils all of which form the Nyigbenya series. These iron and clay pan do not allow for any meaningful agricultural work.[1] This is due to the fact that the soil becomes caked and difficult to till in the impermeable dry season and is flooded in the rainy season as it is impermeable.

Since the main implements of farmers are the hoes and cutlass they find it very difficult to break these soils especially when there are no rains. In times of poor rainfall, the depletion of soil moisture effects are very dramatic. Soils which are marginally fertile cause slow crop development. This means that when drought occurs vegetal cover is too small to shield the soil from the sun. Evaporation of soil moisture increases and soil temperatures rise further, stunting plant growth and laying the earth open to the onslaught of the sun. When the rains eventually come it runs off taking the top soil with it, soil erosion does not only mean the loss of soil but also loss of soluble minerals which drain away into rivers and streams rather than being retained in the soil. Since nothing has been done to effectively contain this problem in the area the cycle repeats itself year in year out and has presently rendered most parts of the land too depleted to sustain any appreciable crop yields. An associated problem is the lack of technological know-how on the part of the farmers. For instance crop litter is still burnt rather than being used as a source of soil generating organic nutrients. These practices result in soil erosion and loss of plant nutrients. The above characteristics of the various oils in the district; the clean burning of grass which could have generated organic nutrients in the soil if left to rot in the soil; the non-application of fertilisers are partly responsible for poor humus content of the soils found in the Tongu District. Consequently yields are low hence the need to modernize and organise agriculture to facilitate rural development

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[1] Azorliade W; Report on Crop Production in the Tongu District, (unpublished), 1978, p. 18.

as discussed in our study of the Tanzanian approach in chapter two.

4.1.3 TEMPERATURE AND RAINFALL

Temperature and rainfall are among the major factors explaining the low agricultural productivity in the district. The absolute maximum temperature of district is generally over 35°C (96°F) for nearly six months, that is from November to April. The mean minimum temperature usually remains at 21°C (70°F) and does not fall below this at anytime. These high temperature lead to excessive evaporation of moisture from plants and soil, this condition is experienced mainly in the lean season and contributes to the wilting of maize and other crops.

The district generally experiences very low rainfall and long periods of drought. There are two main peak periods of rainfall, the major one falls between April and July while the manor season lasts from September to November but the rainfall on the whole is not reliable. The average annual rainfall is between 75mm to 1000mm (30-40 inches) and it is not evenly distributed both spatially and seasonally.

4.1.4 VEGETATION

The vegetation type recognised in the study area are the thicket, savanna re-growth shor grassland. Areas of thicket consists of a mass of shrubs, copious shoots and occasional small trees. This vegetation type is associated with soils of the Toje and Kolcidaw series. The savanna regrowth consists of tall and medium grassland made up of mainly spear grass. This type of vegetation is generally associated with soils of the Agawtaw series. The short grassland is not used for much cultivation of crops but is frequently grazed by cattle and forms the most extensive land in the district. From general observation, the district is devoid of forest and this may be the probable reason why no tree crops are grown.

4.2 POPULATION AND SETTLEMENT PATTERN

The population of the district is concentrated in the eastern half where all the larger settlements are found. The total population for the district

in 1960 was 86,056[2], however, the population increased to 98,601[3] in 1970 an increase of 14.6% again it increased to 115,180[4] according to the 1984 population report. Thus there has been a 16.8 percentage increase in the population from 1970 to 1984. These increases are due mainly to natural birth and a relative increase in life expectancy at birth. Most of the towns in the district are found in the south and along the Volta river as shown in figure four. These are: Sogakope, Tefle, Adidome, Mepe, Battor, Aveyime and Sokpoe. The towns/villages are nucleated as compared to the dispersed settlements of Tanzania, thus there is no need for villagisation in the Tongu district.

4.3 INFRASTRUCTURE DEVELOPMENT

In terms of infrastructural development, the district is poorly served. The road network in the district is not well developed to cater for the developmental needs of the area. The first class Accra-Aflao road passes through the south-eastern section of the district. All other road networks in the district can be classified as third class; they are mostly gravel roads. Some of these roads are rendered impassable during the rainy season. For instance people from Sogakope, Adisome and surrounding villages travelling to Ho the regional capital have to make the journey through Denu. This combersome situation would have been avoided if the Adidome-Ho were to be constructed on all-weather road standard.

The river Volta which flows through the southern part of the district serves as a cheap means of transport for towns that are found along it. Some settlements in the study area not linked by any road network, thus travelling from these areas to the district headquarters or any of the bigger settlements poses a difficult problem. For instance, Juapong is not connected by any road to the district headquarters hence officials travelling to Juapong have to pass through the Eastern Region.

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[2] Ghana Government: 1960 Population Census Report.
[3] Ghana Government: 1970 Population Census Report Vol. II
[4] Ghana Government: 1984 Preliminary Population Census Report.

Production is complete if the consumer has access to the product. Due to the weak road network farming areas have no access to the bigger settlements thus farmers find it difficult to transport their produce to the periodic market centres in the district. Since marketing is an important aspect of the production process, farmers are discouraged to produce more as they cannot sell what they produce during the major farming season at reasonable prices. Thus while prices of food crops may be low in the farming areas, the bigger settlements in the district may continue to suffer from high cost of basic foodcrops like maize and cassava. There is the need therefore to link up the farming areas with the bigger settlements by feeder roads to encourage farmers to increase production. This is fully discussed in the next chapter.

4.3.1 HEALTH SERVICES

In any viable rural development effort the health needs of the people must be taken into consideration. Health affects socio-economic factors and is itself affected by these factors notably income and standard of living. A person's ability to live at a certain level is dependent upon his level of health. The knowledge of the prevailing diseases in a given area directs which health care system in a community should take. The disease pattern found in the Tongu district for instance is typical of any rural area in the country. The two commonest diseases are malaria and gastro enteritis. It has been observed that the health services in the district are inadequate to cater for the people. Table VII show the state of health facilities in the district.

Table VIII

HEALTH SERVICES IN THE TONGU DISTRICT

TYPE	LOCATION	OWNERSHIP
General Hospital (Mission)	Adisome	E.P. Church
General Hospital	Battor	Catholic Church
Health Post	Sogakope	Government
Health Post	Galo Sota	"
Health Post	Podoe	"
Health Post	Dabala	"
Health Post	Mafi-Kumasi	"
Health Post	Adutor	"
Health Post	Juapong	"
Health Post	Tefle	"
Health Post	Volo	"
Health Post	Juapong	"

Source: Author's Field Survey, March 1983.

Healthy people contribute to the economic growth of a country hence the importance of health in any economic development programme. An effort at developing the district must recognise the link between the levels of health and lack of health facilities and agricultural production.

From Table VII it can be seen that there are two general hospitals in the district, these two hospitals are normally crowded becasue their capacities are rather inadequate for the cases reported daily. The Adidome Hospital has a catchment area covering the surrounding areas and extending to Sogakope, Tefle, Dabala and outside the district. For instance, according to the returns of the Ministry of Health, as at December, 1984, there were only 27 doctors in the Volta Region and in the Tongu District we had three doctors. In the case of Nurses there were one hundred and one (101) in the Tongu District, while the region had eight hundred and eighty-four (884). The doctor/population ratio for the district is 28,795 people to a doctor while that of the region is 44,485 people to a doctor. On the other hand, the Nurse/population ratio for the district is 1,140 people to a nurse while the regional ratio is 1,433 people to a nurse. These high ratios clearly point out to the low level of medical personnel available in the district and the region as a whole. *The majority of the rural people simply do not have access to modern medical care. There is thus the need to expand the present health facilities in the district and open new clinics. This we shall discuss in our proposals.

4.3.2 <u>WATER SUPPLY</u>

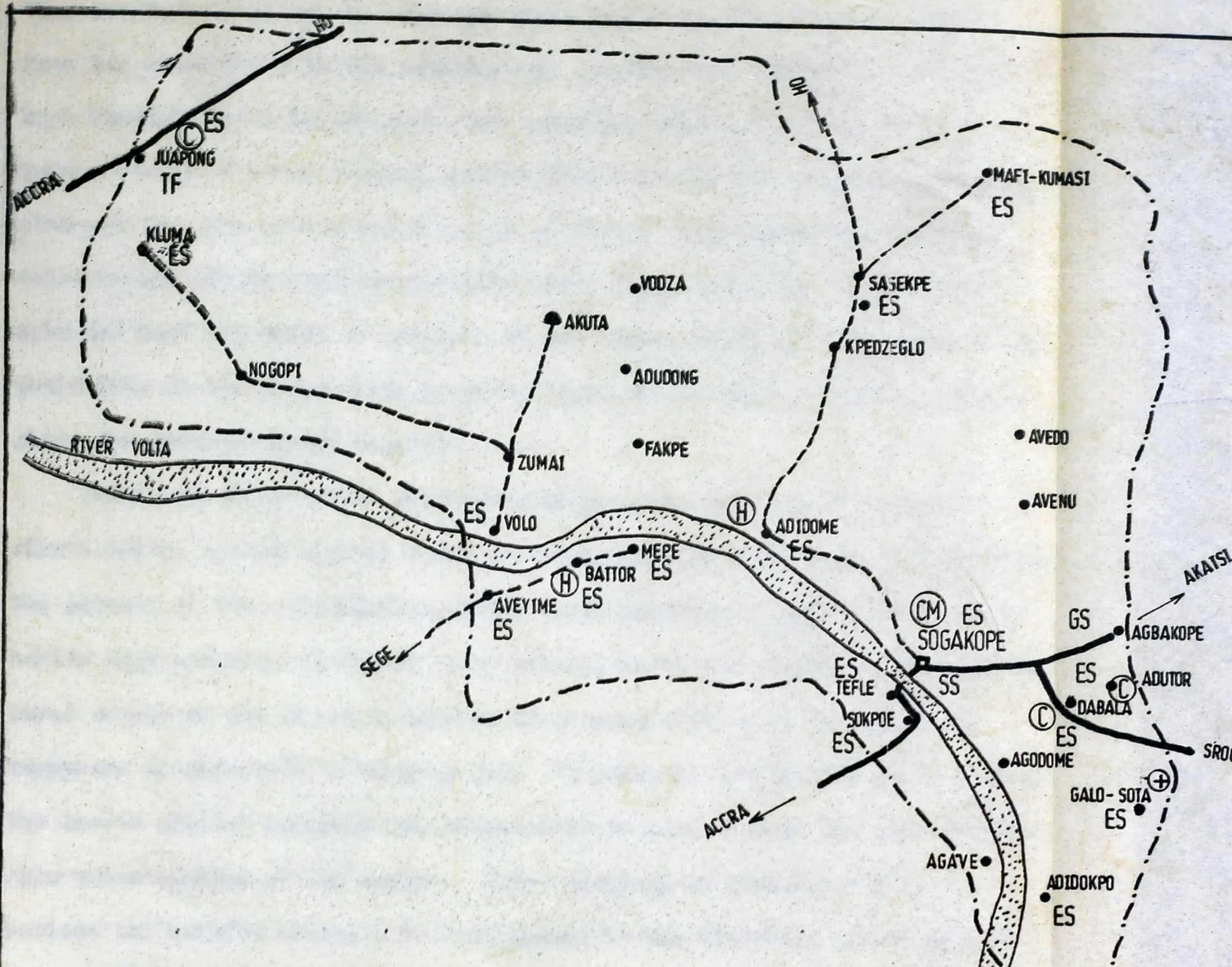
The supply of good drinking water is another critical problem facing the district. Pipe-borne water is not available. Safe drinking water is necessary for good health because water is the common vehicle for transmitting germs especially those responsible for gastro intestinal disorders.

Over 80% of the settlements in the district face the problem of domestic water supply. The main source of domestic water supply is the river Volta.

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*The computation of the above ratios were based on the 1984 census result.

TONGU DISTRICT: EDUCATIONAL AND HEALTH FACILITIE



Thus settlements along and near the river depend on the untreated water from the river for domestic consumption. At the time of the survey, Sogakope township which is not more than a hundred metres from the river buys a barrel of water ranging between ¢20.00 to ¢25.00. People at Adidome also pay the same amount for a barrel of water. Throughout the whole day children and adults continue fetching water from the river. People also swim and wash all kinds of articles in the river, above all they have to dip their feet in the river while fetching hence the incidence of bilharaziasis since the water is never treated.

There are other social facilities (pipe-borne water or from wells, cinema halls, sports stadia) which are conspicuously lacking in the district. The absence of these facilities, which could engender change in the social habits when properly developed, also contribute to the low level of agricultural output of the district despite its potentialities in agricultural resources as discussed in chapter one. It makes it more difficult to induce the needed skilled manppwer and investments to move in from the more favourable urban centres of the region. Water shortage is probably the most serious and painful obstacle to development in the district, on account of its significance for both human and animal consumption and for cultivation.

4.3.3 EDUCATION

Facilities for elementary education exist in almost any sizeable village in the district. Primary schools are widespread. Middle schools are limited to the bigger settlements. The value of education cannot be overemphasized; it is believed that increased and specialised schooling contributes markedly to economic growth and provides a substantial return on investment for the individual.[4] The educational facilities are far from adequate in meeting the middle level manpower requirements of the district. There is one secondary school in the district headquarters, taking the number of elementary schools into consideration, it cannot meet the demands of those

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[4] T.W. Schultz; The Economic Value of Education, Columbia University Press (1963), pp. 44-53.

who may pass the Common Entrance Examination. Recently one Junior Secondary school has been opened at the district headquarters. Apart from the two post primary educational institutions there is an agricultural training institute at Adidome.

This institute was established in 1963 with the main aim of training elementary school graduates to take up farming after a year's training. The training covers handling machines for ploughing, fertiliser usage, spacing, intercropping, animal rearing and poultry. However, graduates from the school prefer working with the Ministry of Agriculture, others work in secondary schools that have poultry or farms as farm attenddants. Those who may have the interest to take up serious farming face the thorny problem of acquiring land and also capital in the form of farm equipment and financial assistance.

TABLE IX

EDUCATIONAL FACILITIES AVAILABLE IN THE DISTRICT

Type of Educational Facility	No. Available	Ownership
Sogakope Secondary School	1	Government
Junior Secondary School	1	"
Primary Schools	167	"
Middle Schools	89	"
Christ International School	1	Private
Adidome Farm Institute	1	"

Source: District Education Office, Sogakope, March 1983.

Table IX above shows the various educational institutions in the study area. The total number of elementary (primary and middle) schools is 256. According to the Planning Division of the Ghana Education Service, the Pupil-teacher ration is 46 pupil to a teacher and in secondary schools it is 17 students to a teacher. However during the survey it was discovered that the above ratios have been exceeded, in some of the elementary schools a class contains as many as 50 pupils, while in some of the villages two classes are combined and the number of pupils may range between 54 and 75. At the only secondary school in the study area the student-teacher ration has been found

to be between 34 and 45. It must be pointed out that this large number of pupils and students in a class does not encourage efficiency as the teacher may not have the energy to pay attention to such a large number of pupil/ students. This no doubt will go a long way to affect the quality of graduates from these schools, not to mention the inadequate textbooks and other teaching materials.

4.4 LAND TENURE

In agrarian societies land is the primary productive asset, the tangible expression of economic and hence political power. While rural land tenure and social patterns vary greatly from place to place it is generally true that where a few individuals own a large share of the land these same individuals dominate local politics and economic lives of their neighbours through their roles as lenders, landlords and employers. The land is the most important element in the process of agricultural development. It is the common denominator and the most fundamental basis of the social and economic existence of man. Land tenure simply put means the rights held in land.

In the Tongu district, land belongs to the head of the family who is also the founder of the community and who had defended the land against intruders in the past. The land however is held in trust for the people who have equal right to it. The people owing allegiance to one central authority settle at places so distantly placed as to offer scope for the traditional shifting cultivation and yet close to offer protection for each other. Anyone who could clear a piece of virgin land had the first claim over that piece of land. This right was handed down to the younger generation through inheritance. This system began to change with increased population pressure on land, simple communal ownership of land became untenable but this does not allow for total individual ownership of land. The new change effected the evolution of heads of families and clans who first settled in a particular locality assuming the proper roles as landlords.

Land acquisition in most parts of the district by farmers is by transfer of rights, clearing of virgin land, inheritance and grants from the heads of landed families and clans. Land is owned so long as a member of the family has crops on it but when abondoned for two or three years it returns into the communal pool. Strangers (those who do not belong to the land owning clan) in a locality are permitted to hold land on similar terms as the natives but in all cases they haye to seek permission to hold land for farming purposes from their landlords. Large organisations and government agencies acquiring large tracts of land for farming may give a ram, a number of bottles of assorted drinks and pay an initial sum of money for the land so acquired.

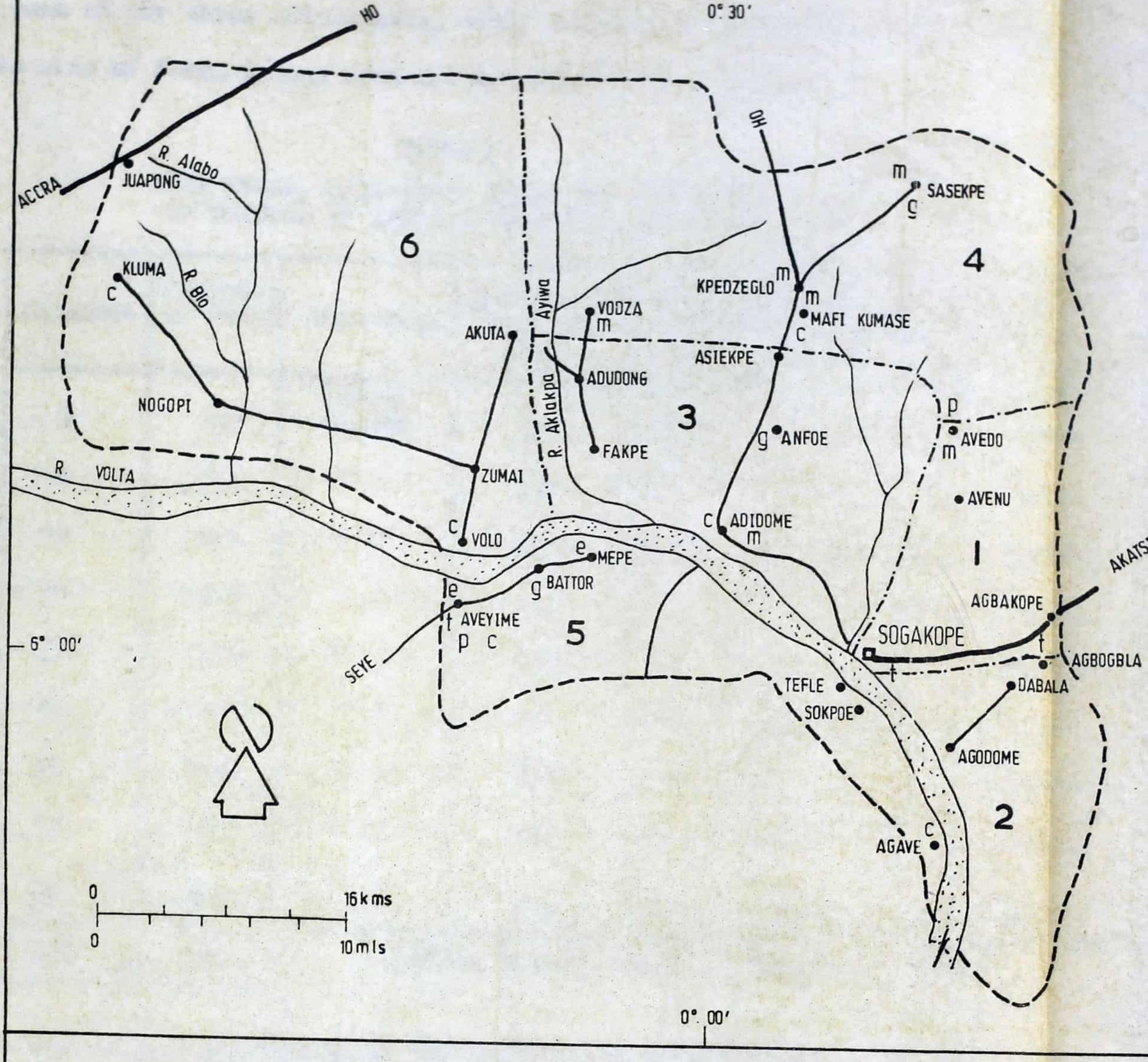
However, in our two case studies, we found out that the nomads control vast stretches of land, hence the redistribution while in Kenya a landless rural class was created as a result of the white settlers taking up the fertile areas. In our study area there will be no redistribution of land so also no one is landless.

4.5 PRESENT AGRICULTURAL PATTERN AND TYPES OF CROPS GROWN

For agricultural and administrative purposes, the district is divided into six sub-districts as shown in figure 4. These sub-districts are: Adidome, Mafi-Kumase, Dabala, Aveyime, Volo. Sogakope is the district headquarters. Each of these sub-districts is manned by an agricultural officer. As in other areas of rural Ghana, majority of the people in the Tongu district are engaged in farming especially foodcrop cultivation. The principal tools used for clearning and tilling the land are the hoe and cutlass, however, some large scale farmers like Adidome Farms Limited and Esinam Farms rely on tractor for ploughing and harrowing.

Table XX shows the age-group of farmers interviewed during the survey, the main crops that they cultivate, their approximate farm size and estimated income per hectare. It must be emphasized here that cassava and maize have been considered, because from the interview these are the only two crops cultivated on commercial basis. The farmers interviewed were chosen by the stratified sample method. This is to avoid the tendency of concentrating

TONGU DISTRICT: AGRICULTURAL ZONES AND MAIN CROP PRODU



on large and medium-scale farmers only. The sample size is thirty farmers from each of the three settlements, which were randomly selected. The approximate size of farms ranges from 0.8 hectares to 12.1 hectares.

TABLE X

FARM SIZES, MAIN CROPS GROWN AND ESTIMATED INCOME OF FARMERS AT ADIDOME, SOGAKOPE AND MAFI-KUMASE

Age-Group	Absolute	Percenta of Total	Main Crops	Approximate Farm size (HA)	Estimated product per HA		Estimated Income in Cedis (Per HA)
					Maize	Cassava	
25-29	3	1.7	Maize, Cassava	3.6	.4tons	2 tons	16,000
30-34	5	2.5	" "	2.8	.4 "	1 tonne	13,000
35-29	12	4.2	" "	12.1	1.0 "	4 tons	54,000
40-44	10	12.5	" "	8.0	.5 "	2 "	37,800
45-49	20	8.2	" "	4.0	.5 "	2 "	18,500
50-54	15	16.7	" "	3.6	.4 "	1.5 "	18,400
55-59	20	12.5	" "	8.0	.5 "	3 "	37,800
60-64	15	16.7	" "	0.8	.1 "	.1 "	2,800
65 & over	20	25.0	" "	1.2	1.2 "	3 "	4,700
Total	120	100					

Source: Authors Field Survey, March 1983.

It can be seen that 54.2% of the farmers are concentrated in the age group of 55 to 65 years and above. Farm sizes range from 0.8 to 12.1 hectares. It is also clear from the table that the youth are not seriously involved in the farming business. Some of the farmers interviewed are retired civil servants and retired army personnel. Apart from the small scale farmers there are two large scale farms - Adidome Farms Limited owned by Mr. Okudzeto and Esinam Farms owned by Madam Esinam Ganyo.

The soil and climatic conditions in the Tongu district are suited to the cultivation of a variety of crops and a host of crops are therefore found cultivated in the area. Among the crops which farmers cultivate are maize, cassava, sweet potatoes, groundnuts, pepper, tomatoes and garden eggs. The most important crops currently cultivated in the district are maize and

cassava which are cultivated by all the farmers interviewed. Mixed cropping, a characteristic feature of subsistence farming is widely practised in the district. Two crops which are invariably found grown together are maize and cassava.

Majority of farmers in the district do not use chemical fertilizer or natural forms of manure such as decayed refuse or animal dung on their farms. Only about 5% of the farmers interviewed indicated that they apply fertilizers to their crops. Some of the reasons they gave include the fact that the fertilizer is not available and even if available it comes at the wrong time and very costly as they do not buy from the agricultural ministry's district office. In addition to the farmer's own labour, family and hired labour are used extensively on farms in the district.

Marketing of farm and non-farm produce is an integral part of the monetary economic system in the district. Almost all the farmers store part of their producedfor home consumption and for seed for the next planting season. The most popular storage structure in the district is the barn. The barns are mostly erected on the farm or located somewhere on or around the compound of a farmer's house. Other less important storage structures identified in the study area include sheds, a few farmers also store maize in the ceiling of their house. These traditional methods of storing maize are not efficient and effective in preventing insects from destroying the crop. Thus for instance relying on this method could lead to greater proportion of maize being destroyed by weevils, leading in turn to a loss in seeds and low return from the produce. On the average the hectare of unfertilised farm yields two to four maxi bags of maize. Farm produce are hauled by two main modes, head leading and by truck. However, the most popular mode of haulage is head leading. The importance of head leading as a means of hauling farm produce suggests among other things that the quantity of produce available to be hauled by individuals is small. This also reflects the size of farm holdings as noted earlier on. It also confirms the inaccessibility of certain parts of the district.

Farmers in the district sell their produce in local markets which are organised on specific days of the week. Other less important areas where farmers sell their produce are by the roadside, at the farm or in a farmer's home in the village. They sell their produce to three categories of buyers - wholesalers, retailers and directly to consumers. Most farmers sell to a combination of these three outlets. However, in general the most important buyers of farm produce in the district are retailers followed by consumers and wholesalers. Retailers mostly come from outside the district as well as the few wholesalers. At the time of the survey a 100 kilograms (.1 ton) of maize was selling at ₵4,000 while 2.5 kilograms of gari was selling at ₵120.000 Paradoxically this was the time the government pegged the price of maize at ₵600.00 and gari at ₵20.00.

4.6 LIVESTOCK RAISING

The term livestock is used here for lack of a single more comprehensive word to cover all animals that give us protein food, clothing and other miscellaneous by-products. The scope thus covers cattle, sheep, goats, pigs, rabbits and poultry. This broad scope is important because in order to formulate a realistic policy for the livestock industry, one should know the local characteristic of the different animals - from the point of view of production, distribution, processing, marketing, relative availability and prices, to the consumer's taste, the size and power of the market both actual and potential. For purposes of this work attention will be focussed on cattle rearing and piggery.

The Volta Region ranks second in the rearing of cattle after Northern and Upper Regions. The cattle are reared on a large scale in the Tongu district. Cattle are kept in herds varying in number from 30-300 and are managed in kraals kept by herdsmen usually Fulani or Hausa. Herds contain cattle owned by a number of people sometimes up to twenty or thirty individuals. The level of husbandry is very low. Blair, reporting in 1963 (F.A.O. report No. 1627, 1963) stated that "most of the herds are confined to the kraal until

4.7 FISHING AND THE CLAM INDUSTRY

River fishing is the second major occupation of the people in the Tongu district. This is carried out exclusively by men. Prior to the formation of the Volta Lake the rivers fisheries fell into four groups, estuarine grounds, tidal, upper and creek fisheries. The latter three groups were almost entirely undertaken by Tongu fishermen who can be found fishing in inland water ways throughout West Africa. The Volta River Authority (V.R.A.) located 20,000 Tongu fishermen in 1962-63 during its census of the population of those who would be affected by the rising of the Volta Lake.[6] Tilapia is the main catch of the fisherfolks, others include mudfish, crabs and lobsters.

The clam industry is the third most important industry in the district and is located between Targorme and Tefle. Between 1954 and 1963 some decline in the industry had taken place in preference to farming. In 1964-1965 the industry was temporarily revitalised by the change in the flow of the river and an exceptional yield was obtained. In 1964 the industry provided the main occupation for about between 1000-2000 women and subsidiary occupation for a further 100 women who fish for subsistence.

The principal beds lay in shallow water close to the river's banks. A few sandbanks and shallow stretches mid-stream also provided further beds though these shifted slightly from year to year. The most important beds are those upstream near Akuse, Asutsuare, Alaboke, Volivo and Duffor where clams have been transplanted in 'farms'. The clams (Egeira radiata) are gathered at an average depth of about two metres. Prior to the construction of the dam, the gathering of clams commenced usually from December as soon as the flood had subsided and the water became clear, and continued until the river rose again in July. Clams are collected by hand from the bed of the river by women, who dive from narrow dug-out canoes, working continuously for three to four hours a day at low tide. Part of the catch is then transplanted in shallower

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[6]Rovena M. Lawson; The Changing Economy of the Lower Volta 1954-67. A Study in the Dynamics of Rural Economic Growth, Oxford University Press, London (1972), p. 45.

[7]Ibid., p. 46.

areas near the banks of the river in "farms" marked out on the river by sticks where clams grow rapidly. They are finally collected from 'farms' just as the flood rises in June and July.

The clam serves as a source of fish, it is used in preparing soup when fresh, it is also fried or dried for consumption. The shell of the clam is of great economic importance; it is grounded and used in the building industry for decorative purposes. It is also crashed and mixed with poultry feed thus providing a source of calcium for the birds. When ground into fine powder it serves as one of the ingredients in the production of vim. Both the fishing and the clam industry have lost their importance in the district. This is due to the construction of the Volta dam which has regulated the flow of the river downstream. Fishermen, have thus migrated to settle along the Volta lake where they now carry on their fishing activities. We shall therefore not discuss those two economic activities in our recommendations.

4.8 AGRO-BASED INDUSTRIES:

The only industrial establishment in the district is the Juapong Textiles Limited. It was established in 1968, with the objective of manufacturing textile fabrics. According to the factory representative at the Swanmill Office in Accra, the factory is partially in production at a capacity of about 10%. The main reason being lack of raw material, mainly cotton.

In 1979, considerable difficulties were experienced over the establishment of letters of credit which unfortunately resulted in the reduction of working days to five-day production week throughout greater part of 1979. The year 1980 was one of the most difficult years in the history of the company in terms of production and cash to meet administrative and operating expenses. The factory was shut down twice during the year resulting in heavy financial losses. During the same year only ¢4 million import licence was granted for both raw materials and spare parts. Production was thus around 23% capacity, grey-cloth produced for the year was 5.078 million metres as against a capacity of twenty-two (22) million metres.[8]

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[8]The United African Company Ghana Ltd.: The Unicorn vol. 25 nos. 1 & 4 (1979) Ghana Publishing Corporation; Accra.

At the time of the survey there were plans to feed the factory with cotton cultivated in Ghana have not materialised, the factory thus will continue to rely on imported cotton.

4.9 CONSTRAINTS ON AGRICULTURAL DEVELOPMENT IN THE TONGU DISTRICT

If development is to take place and become self-sustaining it will have to start in the rural areas in general and in the agricultural sector in particular. To increase agricultural growth requires a multifaceted attack on a number of interrelated problems raning from subsistence production to government price policies.

4.9.1 The Subsistence Nature of Agriculture

An important feature of agriculture in the study area, and for that matter Ghana as a whole, is the continued dominance of foodcrop production by the subsistence method of farming. The main crops as noted earlier are maize and cassava, however sweet potatoes, groundnuts, pepper and beans are cultivated on minor scales. Cash crops are not cultivated in the district. In spite of the existence of potentially fertile land, only small area could be cultivated by the farming family at a time using simple tools such as the hoe and cutlass. Traditionally, the inability to produce food for one's family and to help one's kith and kin is regarded as a source of shame. The aim is only to provide something more than needed so that basic food requirements can at times be met. This means that the supply of marketable foodstuff fluctuates from year to year. The remoteness of the farming areas from the market centres, poor transportation network and discouraging price policies make farmers less dependent on the markets.

4.9.2 The Land Tenure

The land tenure structure is a major abstacle to agricultural development in the Tongu district and in Ghana as a whole. There are two important dimensions of this problem:

(a) land arrangements per se (that is the form in which agricultural land is held - freehold, leasehold, and

(b) the distribution of agricultural land.

If small scale farmers had access to more productive technology, many of them could appreciably increase their income, as has been demonstrated on farms of only a few hectares in Japan and Taiwan. But in the Tongu district, even though most small scale farmers own their own land, few have access to credit or to supporting services such extension and financial assistance, which are necessary for significant productivity gains to be achieved. The reasons are both economic (e.g. administrative costs on small loans cannot usually be covered by normal interest rate charges) and political (larger farmers use their political power to claim most of these services).

If small scale farmers cannot obtain credit or other needed services, a logical alternative means of increasing their incomes, is to give them more of another factor of production: land. Thus the confiscation of large landholdings and their distribution in 'economic size' units to small scale farmers, is sometimes advocated. Farmers in the study area, who lease their land from private landowners, paying rents in cash or surrendering a share of their produce, usually do so under terms that give them little encouragement to produce more. Rental agreements are verbal and of short-term duration. The lack of tenure security thus discourages long term investment; since most production gains are appropriated by landowners in the form of higher cash rents or crop shares. Large scale farmers, too, sometimes have little incentive to increase productivity.

In its present form where only tillage rights are enjoyed, the sense of possession, which can make a farmer undertake long-term investment is absent. In this study there would be no proposals towards a change in the land tenure system since such a social institution cannot be changed without taking into consideration the social and political repercussions and this cannot be done in the short-term.

4.9.3 The Harsh Physical Environment

Natural environmental conditions determine what has been and can be done with land. The type of soil, the length of the rainy season, distribution and total amount of rainfall set limits to crops that can be grown and the

periods within which they can be cultivated. These factors greatly influence crop production in the study area.

Out of the several elements which constitute climate, rainfall is the most important one which affects crop farming in the study area. It must be pointed out that like most areas in Ghana, the farmers in the district depend on rainfall for yield thus in the event of failure of the rains there is also crop failure. Rainfall in the district is not reliable, it is mostly torrential and of short duration in the major rainy season. Like the rainfall, the soil places great limitations on techniques that could be used as well as crops that could be cultivated. During the lean season, and in cases of rain failure, the soil is very difficult to till and without the application of fertilizers, yields are bound to be meagre.

4.9.4 Production Credit

In order that the farmer should produce more he must spend moremoney on improved seeds, fertilizers, pesticides and implements. Such expenditures must be financed either out of savings or by borrowing for the period between the date when the supplies must be purchased and the time when the harvest can be sold. During the sample survey it was learnt that, most of the farmers in the study areas depend on the local money lenders for financial assistance. This situation is due to the fact that until the opening of the Mafi Rural Bank, the only commercial bank of Sogakope and borrowing for farming purposes requires a host of conditions which are cumbersome and confusing to the rural peasant farmer. However, with the opening of the Rural Bank at Adidome and a subsidiary branch at Mafi-Kumase, the situation is improving gradually.

The initial capital for investment in small-scale farming may be easy to generate where environmental conditions are favourable. The farmer only needs a modest assistance of family labour to start, he can then use his first earnings to further expand the cash crops cultivated with the help of paid labour. There are however, many subsistence farmers in the district who can produce nothing above the barest subsistence income to re-invest. Many of the farmers

have land just enough for the subsistence cropping and cannot set anything aside for cash cropping and are accordingly poor. They can only escape this poverty if they receive credit or subsidy to live on and to cultivate other crops.

4.9.5 EXTENSION SERVICES

The rural development agencies which run extension operations - in our situation the ministry of agriculture (mechanisation unit) suffer from the organisational weaknesses characteristic of almost all public organisations. Distance from the urban centres hampers recruitment of capable middle-level personnel and this tends to affect the quality of the advice offered to farmers. The extension work programme is usually of an ad hoc nature, defined by the sector chief. Little guidance is available on its content, presentation or means of execution. Genrally, in developing countries the extention officer/farmer ratio is about 200 farmers to an officer.[9] In our study area, the ratio is between 400 and 500 farmers to an officer according to the District agricultural officer. This high ratio does not encourage frequent contact by the extension officers which in turn affects efficienty.

The extension agent in the study area is regarded as a 'general agricultural agent' with tasks that range from promoting new technology, organizing credit schemes and supply of imputs, to general administrative duties. The wide ranging responsibility normally results in little organised work being done, it is not surprising that in general extension results are negligible.
To promote increased agricultural output, there is the need to review the extention work programme. Due to the low standard of education of most farmers in the district, the 'best farmer' system of extention is recommended. This approach will be able to achieve greater contact and efficienty. We shall discuss this approach in the next chapter.

4.9.6 Marketing Organisation

If marketing and storage problems are neglected in commodity production programmes, farmers (rationally) may not respond to market incentives for inreasing production, and if output does increase, the pressures on the

distribution network may result in higher spoilage rates. Marketing limitations undoubtedly have contributed to the low level of agricultural development in the district.

The lack of storage facilities in the district not only results in crop damage but also contributes to extreme seasonal price fluctuations, as farm produce glut the market after harvest time but are in short supply several months later. For crops like maize which can be stored for long priods of time, the lack of storage facilities, also aggravates annual price fluctuations. Price uncertainties discourage production, though the importance of this disincentive is sometimes exaggerated.

The lack of a nationwide market price information system leads farmers to make incorrect dicisions regarding which crops to plant, when to sell, and the desirability of on-farm or community-level storage facilities. The marketing process is complex and costly thus it is imperative to obtain the confidence of the producer and to convince him that he will be able to sell within a reasonable distance from his farm all that he can produce and at reasonable prices.

4.9.7 EXISTING ADMINISTRATIVE STRUCTURE OF THE TONGU DISTRICT

Rural development implies an integrated function, it is at the district level that cross-fertilization of development ideas, vertical and horizontal, thrives best. Ghana has for many years sought to plan and develop its resources sectorally. This has not proved very successful partly because rural development considerations have not often featured prominently in the national planning decisions and/or their implementation. It is now becoming increasingly recognised that rural development planning is a necessary factor in national development. But the inadequacy of government administrative structure at the district level inhibits effective planning and implementation of rural development programmes. The present administrative structure, as shown, in figure V, is rather ineffective and serves more political than rural development functions. It mainly handles such matters as chieftaincy, district security, local government, district emergency relief services;

rural development is only of a marginal concern.

At the apex of the administrative hierarchy is the District Chief Executive who is the head of the District Council. He takes instructions from the Regional Administrative Officer. However decisions concerning development projects are at times deliberated upon by members of the council. The composition of the council is as follows - two-thirds government nominees and one-third traditional representatives chosen on the basis of social experience. The status of district heads of departments is not clear because the suspended 1979 constitution was silent on this, unlike at Regional level where the Regional heads of departments are to be ex-officio members of Regional Council. The departmental heads are therefore not compelled to attend council meetings except on invitation by the District Chief Executive.[8]

The departmental heads at the district level are supposed to offer technical advice to the council in connection with projects which fall under their outfit. This is rarely done as their status is ambiguous and more so they are responsible to their heads in Accra. Thus their primary responsibility is to implement projects prepared from their head offices leading to the adoption of lukewarm attitude towards council projects. Development activities in the district, therefore, lack unity of approach, in addition projects submitted to the District Council for approval and implementation do not reflect the wishes and aspirations of the ordinary people since the elected representatives; Town/Village Development Committee members and their traditional rulers ignore them when it comes to matters of that nature.

In our case study of Tanzania it was noticed that rural development efforts were backed by effective decentralisation; this is not the case in

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[8]The administrative set up described here refers to the one in existence before 31st December 1981. Since the change of government, District Councils have been dissolved and replaced by Interim Management Committees. A new Local Council administrative set up was also announced by Co-ordinating Secretary of the ruling government Mr. P.V. Obeng on the 3rd of December 1982. According to this new structure there shall be five committees under the District Council. These are the Planning and Development Committee; the Economic Committee; the Social Service Committee, the Utility Service Committee and finally the Administration and Budgetary Committee.

FIG. 5

EXISTING ADMINISTRATIVE STRUCTURE OF THE TONGU DISTRICT

Legend:

<---- ----> Weak Relationships

<----------> Strong links/ties

Source : Compiled from author's interview with the District Administrative Officer of Sogakope District Council March 30, 1983.

Ghana, the excessive centralisation prevent district officers from taking decisions affecting prompt execution of development programmes. Almost all major development decisions relating to local issues continue to be taken in the national capital. Centralization involves loss of time due to ineffective communication system and this in some cases throws many programme whose execution depend on the season out of gear. But the most serious deficiency is that such decisions taken far away from the "scene of the drama" are invariably divorced from the local realities. Felt needs of the people are relegated to the background and as such the programmes are out of tune with local aspirations and sentiments are often foisted. Thus both local initiative and enthusiasm for self-improvement could be killed this way. Rural development planning cannot proceed given the present administrative structure and functioning of government institutions at the district level. The solution to our rural development problems, at the district level, therefore lies in the creation of a more meaningful development authority charged with a comprehensive planning at the grassroots as in Tanzania. This new structure will be discussed in the next chapter.

CHAPTER V

GUIDELINES FOR INCREASED AGRICULTURAL PRODUCTION IN THE TONGU DISTRICT

INTRODUCTION

A large number of policies are possible to promote the expansion of agricultural output, but specific measures can only be formulated after it is determined what the particular causes of low agricultural productivity in the area being considered are. To raise agricultural output it is necessary to increase the yield per acre or the effective area of arable land. Greater yields require technical improvements in the methods of cultivation and increased efficiency of farmers. These requirements may be fulfilled through technical education, new tools and equipment and land reform.

The need to adopt agriculture as the bedrock of rural development has been emphasized in earlier chapters and has been exemplified by the Tanzanian experience. It is also evident that industrial nations grow faster than purely agricultural ones due to the faster rate of increase in industrial productivity in most industries than in agriculture. Nevertheless, agricultural development very often received prior attention in the economic development of many nations. This is not for strategic reason alone (for it is not safe for a country to depend heavily on imported foodstuffs) but because it is an accepted fact that increased agricultural productivity is a pre-requisite for industralisation. Agricultural development must come first because industrialisation itself pre-supposes a productive agriculture. Industrialisation does not take place overnight, it must be preceded by an indigenous supply of food to feed the growing urban industrial population and thus preserve internal capital which would have been spent on foodstuffs and used as an investment capital.

The Seven-Year Development Plan (1963/64-1969/70) rightly stressed that the small peasant farmer "representing by far the bulk of the working population must prosper before the country can be truly said to be making progress. He represents a store of farming experience, managerial talent and sheer

physical work which must be utilised to the full for economic development".[1] However, the history of agricultural development in Ghana shows that right after independence the emphasis was put on large scale mechanised agricultural projects. All agricultural programmes put much faith in large scale farming in order to increase food production. Thus the small scale farmer, the primary food producer, was neglected. What he got was mostly lip-service and sometimes he was forgotten altogether. We shall not delve into the failure of state farms especially in the production of foodcrops.

Any attempt at raising the standard of living in the Tongu district, and for that matter other rural areas of the country, cannot succeed unless rural agricultural productivity is increased. The small scale farmers must be the focus of increased agricultural productivity for the following reasons. First, although they account for the bulk of agricultural output in the country, their massive potential have yet to be realised; use of off-farm inputs is still quite limited, yields are very low and specialisation is uncommon. Second, recent studies confirm what most of the literature on African economies suggests - that poverty on this continent is still predominantly a rural phenomenon. Thus raising the output and income of smallholders is the best way to meet basic needs. Finally, focussing attention on smallholders is a more cost-effective way to raise output than other alternatives currently allow - at least for most crops and areas. In this regard it will be imperative that the rich agricultural resources of the district must be tapped in an integrated manner. Development of the agricultural base of the district can be achieved through a programme such as the one discussed in this chapter.

The study area is part of a larger region and any development proposals within the district must fall in line with the larger region as well as national objectives. Rural develcpment planning should begin to relieve the immense burden of the cities and towns, as well as stimulate both industry

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[1] Planning Commission: Seven-Year Development Plan (1963/64-1969/70), Government Printer, Accra, p. 53.

and agriculture. In these circumstances the individual should be better provided with the incentives to learn, earn and contribute to his society.

In view of the onstraints to development noted in the study area, it is the opinion of the writer that there is the need for a re-orientation of development strategies. Development theories and public policy must be revamped so as to create an atmosphere that is creative and forward looking. Such social action must be people-oriented, problemcentred, situation-specific and scrupulously objective with special focus on rural areas. The emphasis on rural areas is necessary not only because the majority of Ghanaians live in rural communities but also because all the development strategies in Ghana have been urban biased, unfavourable and unresponsive to the needs and aspirations of village peasants.

The guidelines for development of the district are discussed under three main broad headings.

5.1 DEVELOPMENT OF AGRICULTURE

Crop production in the district would be based on zonal specilisation. This would eliminate waste which might result from allocating an area to wrong use. It might be possible to grow any crop anywhere but the economic gain must be considered. The zonal specialisation is based on the agricultural zones already in existence. The crops that would be involved are maize and cassava. The major foodcrops grown in the district are maize and cassava, sweet potatoes. Others are groundnuts, garden eggs, and pepper. Considering present production, future possibilities and the need of the people, it is being proposed that attention should be focussed on the cultivation of cassava and maize.

The two crops have been chosen because, as shown in table one, in 1980 the target production of cassava for the Volta Region was 797,754 tons out of which the Tongu district alone accounts for about 30%. Again, the target production for maize in 1980 was 77,490 long tons out of which the district accounts for about 15% and in 1973 the Volta Region came first in the production of maize for the nation. In the Tongu District itself about 8,000 hectares

of land is under cassava cultivation scattered throughout the district. Apart from this cassava is also very tolerant of low soil fertility. It continues to produce financially adequate yields when the fertility has fallen when other crops cannot be grown without heavy expenditure on fertilisers. In addition cassava has proved to be an ideal crop for the southern sector of the district because of its ability to withstand drought and to grow whenever conditions are favourable, regardless of season, remove much of the risk from crop production. Cassava has labour requirements and these could be adjusted to avoid conflict with other farming activities such as animal rearring. Above all, returns to the farmer are attractive - ₵2,000 per hectare per farming season and it stays in the ground for up to twenty four months until required for consumption.

Maize and cassava are the basic foodcrops that are consumed by people all year round. The high demand for these crops in the country is a sufficient indication that its cultivation must be intensified to meet everyday requirement. Production of these two crops would be increased through the use of improved methods of cultivation like the control of disease and pests in the field, storage facilities and the use of fertilizers. Regardless of the advantages and other favourable characteristics mentioned earlier on, the average yield of cassava in the district has been low - half a tonne per hectare compared with a potential of six tonnes per hectare. This low average yield is due primarily of cassava mosaic disease, cassava bacterial blight and, more recently to cassava mealy bug and the green spider mite complex.

The sub-districts of Adidome, Mafi-Kumase, Sogakope and Volo would be devoted to cassava production. With the introduction of improved varieties of cassava and control of diseases the yield per hectare would increase to between two and four tonnes. Cassava cultivation is not foreign to the above sub-districts, especially Adidome and Mafi-Kumase, where the processing of cassava into gari is mainly carried on by local women using traditional methods. It is expected that 1,000 hectares of land in each of the sub-districts mentioned would be devoted to the cultivation of cassava. The

planting would be done at six months interval among the sub-districts so that harvesting would be throughout the year for processing into gari as discussed later on in this chapter. Thus the overall production from each sub-district would be between 2,000 and 4,000 metric tonnes.

Maize cultivation would be concentrated in the remaining sub-districts of Dabala, Juapong and Aveyime. Maize production is low in the whole district, about three maxi bags per hectare, due to the fact that the same piece of land has been tilled for a long period of time without conscious efforts to improve fertility. A high yielding maize seed sown and fertilised yields between ten and fifteen bags per hectare. In order to step up maize production in the sub-districts there is the need to propagate the use of both chemical and organic fertilizers. It is envisaged that about 1,500 hectares of land would be brought under maize cultivation in each of the sub-districts mentioned. Thus allowing for seed destruction by birds and insects on the farm a hectare of farm would be expected to yield eight maxi bags resulting in an overall production of 120,000 kilograms from each sub-district under maize cultivation.

5.1.1 Livestock Production

In 3.6 we have discussed the cattle population in the Tongu District and also pointed out that the District ranks after Northern and Upper Regions in cattle production. Cattle owners in the study area, like others in other parts of the country, practise the free range system whereby the animals are left to feed on the available grassland in the district. If the present cattle population is to be increased and eliminate the diseases that have been responsible for the death of cattle in the district then veterinary services must be stepped up. Because of the expense and time involved in training veterinary doctors, an initial accelerated recruitment and training programme for a large number of Veterinary Assistants and stock superintendents, improved conditions of service (hardship and bush allowances) should be introduced. The necessary drugs to work with must also be provided. Considering the present number of cattle owners as mentioned in chapter four, the veterinary staff at Sogakope and Adidome, it would be necessary to strengthen the staff position and also

open sub-offices at Aveyime and Dabala to help combat any out-break of cattle disease.

In order to make any headway in cattle rearing there would be the need to educate the owners to seek advise from the Veterinary Officers in the event of any outbreak of cattle disease. It is also being proposed that a community grazing ground be established and maintained. This grazing area should be rid off of unwanted grasses like thistles which could be harmful to the animals. The grazing ground should be provided with earth-dams to store water for the animals throughout. This system of grazing has the advantage of reducing loss of cattle and theft which has over the years characterised the free range system. A matured bull may cost between ₵15,000 to ₵20,000; nevertheless it is not easy for an individual to start a cattle project. In addition, cattle rearing is a long term investment and fecundity is not high as a heifer can only breed once a year.

In view of the low fecundity and the large capital involved people cannot readily enter this industry without teaming up with friends or relying on old animal owners. We would thus propose the rearing of pigs in the district. Pigs have high fecundity and breed twice a year. Table XI shows a profile of piggery project for a beginner on a small scale.

TABLE XI

PROFILE OF A SMALL SCALE PIGGERY PROJECT

INPUTS	COST IN ₵
One Young Boar	2,500
Three gilts at ₵2,000 each	6,000
Sty construction	6,000
<u>Drugs</u>	
Dewormers	1,500
Acracide	1,000
Antibiotics	1,000
<u>Feed</u>	
4 bags of maize (100 kg. weight)	4,000
1 bag fish meal	1,500
Total	23,500

ESTIMATED REVENUE

(i) Revenue from the project is based on the assumption that initial breeding per matured sow will be ten piglets.

(ii) That each sow breeds twice a year.

(iii) That the cost of drugs and feed remain constant throughout the year.

(iv) That the cost of eight months old pigs (fattners) will be ¢6,000.

TABLE XIb

No. of pigs marketed	Half yearly income
Thirty (30)	180,000

Based on the above estimates, a profit of ¢156,500 would be realised. This amount does not however, exclude transportation and labour costs.

5.1.2 FINANCING THE SMALL SCALE FARMER

Although there are many ways of increasing productivity in small scale agriculture without injecting large amounts of capital, there are few innovations which do require some capital investment. The farmers own resources are seldom sufficient to meet these expenditures. To finance recurrent inputs, such as fertiliser, insecticides, tractor hire and labour for weeding, harvesting, production credit is needed. The problem of agricultural credit is that of providing capital for the various requirements. The complexity of the structure demands greater flexibility in any financial organisation that provides credit to farmers. The current traditional farm enterprise in the Tongu district is more of a social and economic unity than a business. This fact is ignored by the financial institutions especially the established financial houses. Private money lenders remain the most attractive source of credit to the farmer because they understand better the social needs of the farmer for credit. Even though the private money-lender may demand interest rates of up to 200% per crop year the peasant farmer prefers to borrow from him because of flexibility.

The cardinal objective of rural development is increased agricultural productivity - which is also the thrust of this study - can take place only if proper inputs and improved technology are provided and utilised. In the study area, prior to the opening of the Mafi Rural Bank at Aditome in 1980, the only commercial bank in the district at Sogakope did not easily extend credit facilities to the small scale farmer. The problem is that these traditional banks have their own rules and regulations for extending credit facilities which is too complex and confusing to the rural farmer. In addition the current loan of about ₵5,000 to the small-scale farmer is too meagre. To be able to convince the financial houses for a sizeable financial assistant it is important for the farmer to plan his finances. This is illustrated by the farmer to plan his finances. This is illustrated by the cash flow in Table XII for a two hectare farm during the first fourteen months. The beginning of the farming season here is taken as January, all expenses, and all revenues are estimated as accurately as possible nevertheless, official prices have been quoted where available. The two hectare farm is planted with maize, intercropped with cassava. It is assumed that land is currently under fallow covered with elephant bush and must be cleared. From the cash flow example, it could be seen that if things go as planned the farmer would have almost paid off all the initial investment by the following July (An initial investment capital which is more than the ₵5,000 at the time of collecting the data). The cash flow also shows the monthly expenditure and that from this example the farmer needs an initial capital of ₵8,100 to start a two hectare farm. The farmer would be making profits by July because most of the initial costs to start the farm would not be repeated. In this regard the author would want to agree with the government directive that banking institutions should increase their financial assistance to farmers from ₵5,000 to between ₵20,000 and ₵30,000.[5]

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[5]People's Daily Graphic: Graphic Corporation, (March 28, 1983), p. 8.

TABLE XII

ESTIMATED CASH FLOW OF A TWO HECTARE FARM DURING THE FIRST FOURTEEN MONTHS

	Jan	Feb	Mar	Apr	May	J	J	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March
Initial clearing of Wooded Savanna by Tractor	-500														
Ploughing	-400														
Harrowing	-200														
Casual labour at ¢80/day including all allowances, 10 Mondays	-800				-300	-300	-400	-400							
2 Cutlasses at ¢45 each	-90														
Wellinghton boots at ¢300 a pair	-300														
Six bags of Fertiliser at ¢570	-3470														
Two bags of ammonia at ¢380	-760														
Other Expenses	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780	-780
Contingency															
Transport Expenses	-500	-300	-300	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
Revenue @ ¢1200 per 100 Kilogram of maize stored from harvest (6 bags / hectare)							1440								
Cassava 2 tonnes / hectare selling fro ¢1/kg at farm gate									2000	2000					
NET CASH FLOW	-8100	-1380	-1380	-1580	-1580	-1180	+1280	-1680	+820	+820	-1180	-1180	-1180	-1180	-1180
CUMULATIVE CASH FLOW	-8100	-9480	-13800	-12440	-13980	-15160	-2340	-4020	-3200	-2380	-3560	-4740	-5920	-7100	-8360

As a result of the opening of the Mafi Rural Bank at Adidome, the complex regulations concerning the granting of financial assistance to farmers have been minimised. A rural bank has its headquarters in the area of operation thus the Mafi Rural Bank has its head office at Adidome. Applications for loans are considered by the Board of Directors and when approved, the applicants are given the necessary financial help. The only condition that the bank lays emphasis on is that the farmers must be in groups with a leader in applying for loans, this is to enable easy contact in case of default. According to the manager of the bank patronage has been very encouraging and that the farmers have gradually cultivated the habit of saving with the bank. He however lamented that this habit is on the decline due to the current financial vetting of people. With regards to repayment the bank does not seem to be facing any difficulties at the time of the interview. There is no limit on the amount of loan that is granted to a customer, it depends on the report submitted by the project officer on the applicant.

Despite the relatively smooth operations of the Mafi Rural Bank, it must be pointed out that to forestall any future failure of the banks operations and to improve upon its efficiency credit provision must be co-ordinated through effective supervision. Loans must be made available to large numbers of small foodcrop farmers and must be co-ordinated with the Ministry of Agriculture's efforts to promote the use of new materials and equipment. The credit must cover the total financial needs of the farmer. This is vital because the average farmer needs working capital for maintaining subsistence level and also to start the actual agricultural production which is mostly of a seasonal nature.

Another important consideration should be the timing of the loans, farmers interviewed complained of receiving their loans when the farming season is far advanced. This practice often leads to a delay in the whole farm business and a total failure which may lead to default in repayment of loan. It is thus being proposed that loans should be made available well

before the preparation of land begins to enable the farmer to budget to cover various stages of the farm-clearing, planting, weeding, harvesting and marketing of his produce. The government should pay more attention to the supervision of the financial institutions to ensure their efficient operations. There should be periodic checks on their operations to obviate reports of favouritism, nepotism and various forms of discrimination sometimes levelled against the bank officials.

Apart from the established financial institutions credit unions could also play a vital role in the financial assistance to farmers. Credit unions give financial assistance to members at a rate lower than that of the financial institutions. The unions also undertake productive ventures like farming, storage and marketing of produce, they also act as advisors to prospective borrowers. In view of this it is being proposed that with proper education farmers in the district should form credit unions in all the sub-districts. However the credit unions must work hand in hand with the co-operative movement. (The role of co-operatives is duscussed in 5.3).

5.2 EDUCATING THE FARMER

The abilities of farmers in the Tongu District and the decisions they take about their farming operations are so crucial to the rate of agricultural development. In view of the importance of the decision taken, special programmes designed to facilitate farmer education are an important phase of education for development. This type of education is referred to as agricultural extension, which is defined as:

> a teaching process by which information about improved methods of farming is passed on to farmers who have knowledge about such methods or are not using such methods. The information covers all aspect of agriculture such as land preparation, soil fertility, seeds, fertiliser use, weeds, pests disease, harvesting, storage, irrigation, animal husbandry and marketing.[6]

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[6]Ghana-German Agricultural Development Project, Northern and Upper Regions: Agricultural Extension in Agricultural Extension Handbook, (1977), p. 220.

Agricultural extension programme is very vital for the modernisation of agricultural development since most farmers in the study area and the country at large are illiterates. If such farming methods cannot be introduced on a large scale then periods of severe food shortage as are increasingly being experienced in the country in recent times shall be a permanent thing to live with. It is thus being proposed that a new mode of extension service be adopted in the study area with the following objectives:

(i) to introduce improved methods of farming;

(ii) to increase agricultural production;

(iii) to help implement government agricultural policy.

For the extension service to be effective, it should have the following characteristics:

(i) It must go to where the farmers are, that is on their farms and villages, unlike formal education.

(ii) It must be specific to farmers present interests and needs, that is, how to increase crop production.

(iii) It must respect the fact that farmers are adults and must utilize special methods and be carried out in a particular way if it is to be effective.

(iv) It must be fitted into times when farmers are not too busy, that is, during off-seasons when their work load is light.

(v) The unit of instruction for teaching and learning must in most cases be a particular new or changed practice, that is changed practices in agriculture.

(vi) It must be accompanied by immediate opportunity for farmers to try out the new methods taught - this involves both the timeliness of the teaching and the availability of the supplies and equipment necessary to put each new method into practice for instance fertilizer application.

(vii) Each new or changed practice proposed must be technically sound and economically profitable - trials by nearby farmers necessary.

With regard to the extension service, it can generally be said of the staff that they are few and far between, ill-paid, ill-equipped with a technical package and substantially very poor in quality. The result is that the mass of the farming population, especially the small-scale farmers have not been reached. At Aveyime for instance there was only one technical officer at the time of the survey, who is expected to visit between 3,000 to 5,000 small-scale farmers in the town and its surrounding villages, the same officer is expected to attend to farmers of similar number at Battor. In order to reach down to the smaller scale farmers, what is needed is an extension programme which will make the small scale farmers, one of its priorities since they produce the bulk of the district's food requirements.

Since the ratio of extension agent/farmer is likely to remain low for sometime, it is being suggested that a programme of training 'best farmers' should be introduced. These 'best farmers' should be selected by the local farmers themselves throughout the farming villages in the study area. They will be expected to pass information from the extension officer trying out different innovations on their farms. This is in line with the 'trickle down theory' or the two-step flow of communication which postulates that information concerning innovation flows down from its sources to opinion leaders in the locality system and then passes from to others, with whom they associate. The utilisation of the 'best farmers' in extension services would diffuse innovations quicker than relying on the few extension officers in the study area now, who face a host of problems, prominent among which is transportation. From all indications the 'best farmer' strategy would be more effective and cheaper than training and using university-trained extension officers many of whom have little or no inclination to live and work in the district.

Finally, there is the need for a close link between extension and adaptive or action-oriented research. This link is very essential as it will take account of specific local constraints faced in apply research results to the farming system in the district. In line with this it is being proposed that farmers, extension staff and research workers must be brought together - may be once a month at the proposed service centres (this is discussed in 5.5) - in free discussion as a practical way of educating all the three groups and eventually improving the level of agricultural productivity.

5.3 CO-OPERATIVES AND RURAL DEVELOPMENT

Marketing co-operative movements have an important role to play in the development effort of the Tongu District as observed in our study of the Ujamaa programmes of Tanzania. The concept of co-operative is not new in the Tongu District, under the traditional system of co-operation known as 'Nnoboa' a group of farmers in a village work in each others farm in turn. However, a co-operative is defined as:

> A formal organisation embracing more than one agricultural production unit membership in which requires that individual production units limit their operational independence either by making use of the organisation's services in certain aspects of operation or by accepting the organisations intervention in managerial decisions concerning the conduct of their agricultural activities.7

Co-operative membership implies that contribution of equity capital to the organisation and possession of formally equal rights to participate in democratic processes of organisational decision-making, without regard to differences in the amounts of equity capital contributed by the various members.

The small scale farmer often finds himself at a disadvantage in his economic and socio-cultural relations with the urban centre and the commercial intermediaries through whom village-city economic relations are channelled. The co-operative could serve as a means for farmers to unite and strengthen their hand in economic dealings, both as buyers and as sellers.

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[7] Crawford Young, Neal P. Sherman, Tim H. Rose: Co-operatives and Development Agricultural Policies in Ghana and Uganda, Oxford University Press (1970), London, p. 13.

It may also serve to bridge the cultural gaps and improve farmers self-image and their social standing, by directing their own economic affairs and to serve broader regional or national interests. In addition, the small scale farmer has a marked disability to direct and influence change, and to compete with the urban populace for control of scarce resources. The small-scale farmer is also helpless when facing the superior market power of urban-based and urban-oriented buyers and supplies may be compounded by state intervention.

The above observations are equally applicable to the small scale farmers in the Tongu District. The farmers in the district suffer a number of disadvantages as they attempt to hold their own in these confrontations. They lack financial reserves and their income is too low to facilitate innovation. A greater part of their energy and labour resources are devoted to assuring family food supply. It is thus being advocated that the traditional system of village co-operation should be the basis of any form of co-operative movement in the Tongu District. Co-operatives could help farmers to overcome the financial barrier to innovation through the pooling of funds for mutual lending and by serving as an intermediary between the small holder farmer and the financial institutions. As noted in the case of Tanzania in chapter two, co-operatives could co-ordinate members farm operations so as to make possible sharing of equipment by a number of production units whose total extent is sufficient to justify the investment. In the market pooling of purchases and sales make it possible for typical small farmers to achieve a number of commercial gains, for example the achievement of bulk buying discounts in the purchase of supplies on the one hand and ability to submit tenders in competition for special supply contracts on the other. In the long run when well developed the co-operative would be able to help finance the construction of health posts, primary school blocks in settlements which lack these facilities in the district thereby contributing to the development of the district.

However, if the development of the co-operative movement is to make

any headway in the study area like in Tanzania, then there should be greater co-ordination between the Department of Co-operatives and the Co-operative Movement on the one hand and the other agencies concerned with rural development (especially Ministry of Youth and Rural Development) and the District Council. There is no doubt that if properly organized and given the legal backing by the Government, the co-operative movement could serve as an effective tool in transforming traditional agriculture for rural development.

5.4 INFRASTRUCTURAL DEVELOPMENT

We have discussed in chapter four the poor state of infrastructural development in the district. It has been observed that one of the basic problems of rural development is that it involves so much in terms of infrastructural development and of vast numbers of human resources that, it is often considered to be better left alone to be tackled as conditions permit. However, if successful transformation of the Tongu district is to be realised then infrastructural development should be one of the essential ingredients in the rural development programme - especially the road network and health services. Unlike in Tanzania where the settlements were dispersed over a vast area and there was a regrouping of these settlements before the provision of these basic needs, the settlement pattern in the study area is nucleated and thus would not require regrouping of villages. Medium level towns available could serve as central points.

5.4.1 ROAD NETWORK

Road transport, as shown in figure three, is the most widely used form of transport in the district, the bulk of the passenger and freight traffic within the district is by road. Table XII shows some of the feeder roads under construction which when completed would lead to the opening up of the district; it would also link the farming areas with the medium-level settlements in the district, and would facilitate easy movement of goods and services, and in the long run open up the district to the rest of the region and the country as a whole. To construct a kilometre of secondary road starting from clearing the site to the final concrete works costs ₵18 million, while it costs ₵4.5 million

to construct a kilometre of gravel road.[7] We would thus advocate the construction ofgravel roads, popularly referred to feeder roads to connect most of the farming areas in the district. However, the twenty-four kilometre road from Adidome to Sogakope should be constructed to a secondary standard. This is because it is the shortest route linking the interior part of the district to the Accra-Aflao road. In addition, it is the only road that links the rest of the district to its headquarters traffic on it is thus often heavy, construction of this will not start from the scratch.

As shown in Table XIII below, if the feeder roads under construction could be completed, a total of 129.5 kilometres of feeder roads would been constructed to link these farming villages.

TABLE XIII

ROADS UNDER CONSTRUCTION AS AT DECEMBER, 1980

Road	Distance In Km.	Cost (¢m)	Classification
Lolito - Adidokpo	32.5	146.25	Feeder
Dabala - Agorta	20	90	"
Blamezado - Agorta	32	144	"
Sogakopo - Adidome	24	432	Secondary
Adutor - Junction - Adutor	5.3	23.9	Feeder
Kodzi - Asidowui	22.2	100	"
Volo - Adidome	17.5	78.8	"

Source: Maintenance Engineer G.H.A. Ho. March, 1983.

5.4.2 HEALTH FACILITIES

Hospitals and clinics are few and many people do not have access to them as discussed in chapter four. Health as a basic human right and the universal desire to be healthy could be made the basis for rural development. Considering the number of health facilities in the district as shown in Table VII, one can say that these are too low for a current population of 115,180. In

[7] Contracts Section of Ghana Highways Authority. Accra.

this respect, expansion of the present health facilities in the district should be taken into serious consideration.. It is thus being proposed that the Health Centre at Sogakope should be gradually expanded and upgraded to a polyclinic status to handle most of the minor health problems. However, serious health problems should be referred to the two hospitals in the district.

It follows from the scarcities of financial and institutional resources, that the author is proposing the use of a variety of institutions and approaches in the health sector, notably to mobilize private as well as public energies. Productive use of individual initiative is as possible in the health sector as in others, although there are also risks and inconveniences. The current primary health care programme (P.H.C.) can lead to the speedy expansion and establishment of new health posts in the district. This programme which is community-based, stresses preventive measures against diseases and also health education of the people. We are of the view that when successfully carried out in the district it could lead to a reduction of the current ratio of 1,140 people to a nurse.

5.5 DEVELOPMENT OF AGRO-BASED INDUSTRIES

Rural or agro-based industries refer to:

> a wide range of activities by commercial enterprises, co-operative societies and individual entrepreneurs concerned with inter alia, the processing of food-crops, the production of simple farm tools and vehicles as well as local consumer goods by village technology and wide range of handicrafts, pottery, metal work and building materials.[9]

The contribution of industralisation to rural development is a multiple one. Its primary purpose should be to increase rural production and productivity. Rural industries can give direct support to agricultural advancement through the manufacture and supply of productivity-raising inputs, es-

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[9]Patrick E. Ollawa: "On a Dynamic Model for Rural Development In Africa" in Journal of Modern African Studies, Vol. 15, No. 3 (Sept. 1977), p. 15.

pecially those appropriate to small or marginal farms. In addition, they can be a means of mobilizing the rural labour force through the provision of additional employment opportunities in craft and artisan activities and manufacturing linked to other industries or urban markets. The manufacture of goods to meet basic needs for rural markets makes an important contribution to raising living standards and should proceed in step with any increase in rural incomes and with moves to bring about more equitable income distribution. Finally, rural industrialisation could also make a significant social contribution by improving the human resource base of the district.

Agro-based industries are intrinsically linked to agricultural development. It is only an industrial sector geared towards the processing of agricultural products that could offer a better start for the study area in any industrialisation programme. More agricultural oriented industries would encourage farmers to increase their output so long as these factories stand ready to buy their output without getting rotten. It has been proposed that cassava and maize should be cultivated on a large-scale in the district. In view of this the industrial establishments proposed are based on source of raw material and the status of the finished product. Thus we propose the following cottage industries:

(a) Cassava Processing Factory (to process cassava)

(b) Local Mat Weaving

(c) Agricultural service Centres.

The establishment of the above centres and industries may not require much capital if they are set up on moderate scale. (see Table XIV) We must remember that it is the small and medium-sized factories which would later grow into large modern ones after they have learnt to reduce their operating costs coupled with increased production by farmers.

TABLE XIV

PROFILE OF CASSAVA PROCESSING FACTORY

MACHINERY	COST IN CEDIS
Cassava Grater	31,625.00
Cassava Press	4,000.00
Sieving Machine	28,000.00
10 Horse Power Motor	40,000.00
Corn-mill	100,000.00
4 Horse Power Motor	10,000.00
Total	213,625.00

Source: S.I.S. Engineering Enterprises, Kumasi. June 1984.

TABLE XIVb

LABOUR REQUIREMENT

STATUS	NUMBER	MONTHLY SALARY ¢	ANNUAL SALARY ¢
Manager	1	2,500	26,000
Assistants	4	8,000	96,000
Total	5	10,500	122,000

TABLE XIVc

ESTIMATED REVENUE

INCOME FROM GRATING •15 TONS OF CASSAVA(¢)	INCOME FROM 40 TONS/DAY (¢)	MONTHLY INCOME	ANNUAL INCOME
150	40,000	800,000	8,000,000

From the estimate a monthly profit of ¢69,500 would be realised and annual profit of ¢7,878,000.

Cassava has a lot of uses among which is processing it into garri and industrial starch. Gari is a staple food in Ghana and is traditionally prepared by women. It is estimated that the local gari market is currently

under supplied. The Mafi-Kumase and Adidome areas are suitable for the location of the factories since they are major producing areas with an estimated 150,000 hectares of land under cassava. In addition the two settlements are not far from the regional capital as well as the district headquarters. At the moment processing cassava into gari is done manually mainly by women; the cassava after harvest is peeled and grated manually. Pressing of the dough to get rid of water and starch is also done by placing weight on the dough in a sack for about two days. On the third day it is roasted as gari. However, when the factory is established the peeling which will be done manually, the grating and pressing will be done mechanically on the same day and the dough roasted into gari. At maximum capacity, 4,000 kilograms (40 tons) of cassava are needed to be grated in a day while a woman with the help of two people can grate about 150 kilograms of cassava. Five people are needed to operate the factory, since the factory, since the factory will stimulate cassava production other cassava growing areas can be considered for new factories.

Market for gari is readily available in the district and the rest of the country as the two settlements mentioned above are easily accessible by road hence the product can be patronised. Nevertheless, direct supplies can also be made to educational institutions and hospitals in other parts of the country as well as woman traders who now patronise the product from the local women.

Local Mat Weaving

The production of the mat is undertaken at Dabala, Adutor and its surrounding villages. The raw material involved is a tall grass that grows widely in the lagoon in the area. The weaving is mainly undertaken by women and young girls. There are two types of the mat, the big one which is used by low income workers and in the rural areas; then the small type which is used by nursing mothers, children and Moslems in the Mosque. The local mat is now in great demand because of foreign exchange constraint to import the small one hence its non-availability in the market.

TABLE XV

ESTIMATED WORKING CAPITAL INVESTMENT IN THE MAT INDUSTRY (ONE MONTH)

INPUTS	QUANTITY	COST IN CEDIS
Straw	600 Kilograms	1,200
String	3 cards	750
Wooden Frame	1	500
Total		2,450

Source: Authors Field Survey, March 1983

Revenue from the mat industry is based on the following assumptions: -

(i) That the individual undertakes the production of the small mat.

(ii) That two mats will be produced in a day.

(iii) That the cost of one mat will remain at ₡120.

(iv) That the individual works for twenty days in a month.

TABLE XVb
ESTIMATED REVENUE

COST OF ONE MAT (₡)	MONTHLY PRODUCTION	MONTHLY INCOME ₡	ANNUAL INCOME ₡
120	240	28,800	576,000

Thus in a month a profit of 28,550 would be realised and in a year it will be ₡546,600. These amounts include transport cost and other allowances.

At the time of the survey the industry seem to be facing the problem of acquiring cord which is the only input that is imported into the country. The problem is that the cord which is used is also needed by our local fishermen and since this input is now supplied directly to fishermen the women find it difficult to come by it. It is therefore being proposed that the District Council should organise the local women into a co-operative movement and assist them in the procurement of cord to help boost production.

Agricultural Service Centres

Several types of rural service industries can be distinguished. One group involves the provision of repair and maintenance facilities and is becoming increasingly important with the introduction of new and more sophisticated equipment in agriculture storage, transport and the production of new consumer goods. Within rural areas the skills and technologies employed tend to be less sophisticated but their development is an important contribution to rural industrialisation. It is thus being proposed that service centres should be established in all the sub-district centres - Adidome, Aveyime, Dabala, Volo and Mafi-Kumase. These centres are to be designated level two service centres and must be manned by a technical officer (level one is the district headquarters). They are to serve as consulting stations for farmers where they could go for expert advise, banking services and for the supply of other agricultural inputs including repair works. Since the sphere of influenc of these centres would gradually merge it would then lead to development of the whole district, apart from providing services, employment opportunities would also become available in these centres hence minimising the escape from the rural areas.

An important step to take in altering the low productivity of agriculture in the district is to vigorously promote small scale industrialisation. By implication this entails the substantial use of a technology that is easily adaptable to the local conditions. In practice, therefore, the choice of technology in rural areas is limited, largely determined by what is immediately or most readily available. The aim should be to utilize to the maximum all the local resources and in the process to set in motion a whole set of linkage effects and mechanisms of rural development and growth.

The introduction of rural industries will maximise the utilisation of local resources and also spread the benefit derived from such a process. This is because they will create the basis for the formation of technical skills as well as the development and deployment of those rudimentary types of industrial and managerial activities that are considered necessary for

the relatively advanced organisation of modern agriculture.

One major advantage of the strategy suggested here is that it would provide work for the hitherto under and unemployed educated young people in the rural areas. A significant proportion of those now classified as the urban unemployed consist of young school leavers from the rural areas who have migrated to the towns in search of jobs thereby depleting the rural sector of that small percentage of the labour force with an invaluable level of education. What is needed is a considerable increase in the number and proportion of knowledgeable young people in the active rural labour force. The prospects for further innovation in the rural sector will be enhanced as soon as there are more educated local managers and other necessary decision-makers. Most co-operatives, rural development committees, extension services and other types of local activities have foundered or have experienced serious management and organisational difficulties because of the lack or shortage of educated manpower.

As linkages between the rural industries and agriculture become more closely established, the transfer of both human and material resources will tend to increase sharply within the rural sector as a whole. This makes it easier to create the basis for future labour absorption in the rural industries as more and more people become redundant in the wake of the increased mechanisation of agriculture. There is yet another aspect of these linkages. On the macro-level the relationship between national development and rural transformation is initially mainly a one-way affair, in favour of the latter. This is because the impetus and stimulus for the formation and implementation of the requisite programmes including the necessary financial capital and skills for rural development, must initially come from the central government and this places the rural areas in the awkward position of waiting hopefully to receive outside help. However, as rural industries, agriculture and other related activities reach certain degree of sophistication to warrant classifying them as a self-sustaining productive sector then the linkages between

rural and national development will begin to shape themselves into a satisfactory form of mutual relationship.

5.6 SUGGESTED ORGANISATIONAL STRUCTURE FOR THE TONGU DISTRICT DEVELOPMENT

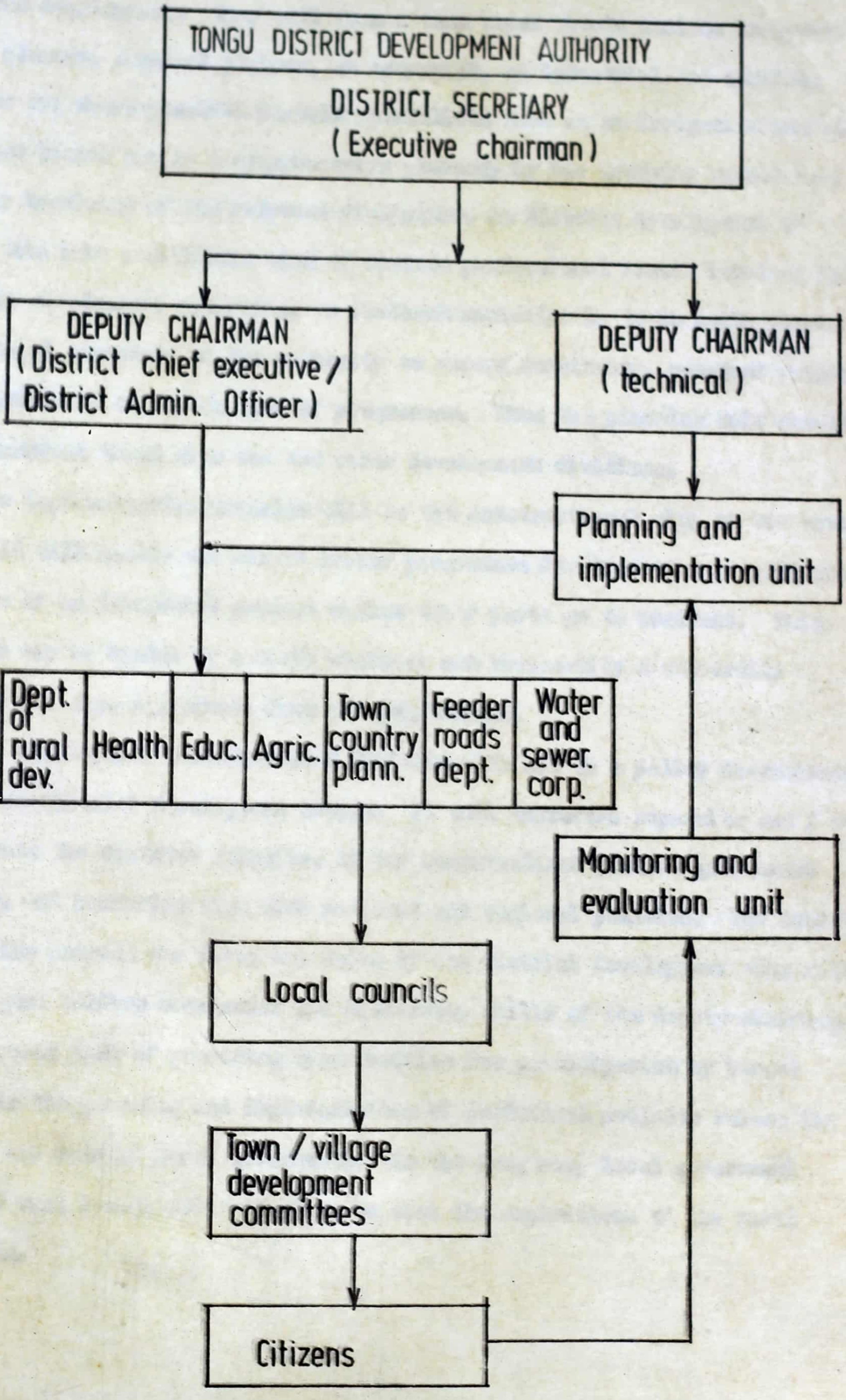
The extent to which effective policies can be devised to cope with such diverse and complex issues of the rural area will depend largely on the efficiency of the national policy-making institutions. The importance of establishing well-defined objectives for rural development cannot be overemphasised. There should also be a clear designation of responsibilities for implementation, and a well-developed system of communications down and across administrative chains. Responsibility for rural development in Ghana is commonly shared by several departments or ministries including those for industry, agriculture, planning, rural development etc. It is desirable that one agency should be charged with the responsibility for major initiatives and for co-ordination of planning and implementation, so that integration of development policies and projects is realised. Rural development requires the greatest possible decentralisation to secure the necessary adaptation of strategies to local conditions and needs.

To enhance effective co-ordination and implementation of development policies, it is being proposed that a Tongu District Development Committee be created under the chairmanship of the District Secretary. This development authority must have two main wings (i) District development and (ii) District administration (See Fig. 7). The district administration wing may continue to handle purely political and administrative matters such as district security, chieftaincy, emergency relief services. The district development unit will take over all matters relating to development - economic, social and physical - in the district. This unit must be headed by a deputy chairman, who should be a development planner or a person qualified in some other relevant profession. He must be able to mobilise both human and natural resources for development of the district.

The district development unit will have three key sub-divisions - planning,

FIG.

SUGGESTED ORGANISATIONAL STRUCTURE FOR THE TONGU DISTRICT DEVELOPMENT AUTHORITY



implementation and development administration divisions. The planning unit which will actually discharge the duty of co-ordination of the vertical and horizontal programmes should be composed of professionals qualified in planning and development. They will form a team which should include an agricultural planner, a social planner, an economist, an industrial and services planner and where possible certain specialists such as an irrigation engineer. The team leader who is a comprehensive planner, by his training should have a working knowledge of the relevant disciplines in district development to enable him take a wholistic view of diverse professional issues involved in a district development programme. A feedback mechanism is to be built within the general structure of the authority to ensure continuity, constant review and improvement on performance of programmes. Thus the planning unit should be in constant touch with the two other development divisions.

The implementation division will be the constructional wing of the authority. It will handle and direct labour programmes for execution of projects or parts of an integrated project whilst other parts go to contract. This division may be headed by a civil engineer not necessarily a university graduate but also a graduate from the polytechnic.

The development administration division will act as a policy co-ordination centre for district development issues. It will therefore supervise and / or co-ordinate the district functions of the decentralised central government agencies, and harmonise them with national and regional policies. The mutual interaction between the three key units of the district development wing will require good calibre managerial and leadership skills of the deputy chairman. The important task of providing opportunities for participation by target groups, in the planning and implementation of individual projects raises the issue of the role of local government. In the long run, local government machinery must become more effective to meet the aspirations of the rural population.

5.6.1 CONCLUSION

Throughout the study the emphasis has been on organisation and planning to create modern agriculture, which would ultimately lead to development of the Tongu district. This is to solve certain socio-economic problems. The first of which is the drift of the rural population to the towns at a rate detrimental to the district's development. Closely related to this is the rural unemployment and underemployment. Secondly, the low productivity characterising the agricultural sector, which is the largest employer of the labour force in the district. Thirdly, the deterioration of the transportation system which has greatly hindered the marketing of agricultural produce.

A modern agriculture is one in which farm inputs are of infinitely great importance. It is one in which practices of off-farm agricultural support services that previously were not needed must be developed and operated and assume major importance. It is one in which the quality of the land itself is changed to become the base for a more productive agriculture. It is one where either diversified and constantly shifting combinations of enterprises or continuous specialised production are possible in response to changing relative prices. Several of these taken together require a new overall organisation of the rural areas and new interrelationships among farms, market centres and cities and between agriculture and industry.

These major transformations involve both technological and institutional changes. Some of the needed technological changes affect methods of farm production, new crop varieties, new implements, new pest control methods, new methods of marketing, storage, transportation and processing of farm produce. The institutional changes that are involved include new ways of extending credit to farmers, new methods of supplying inputs and imparting information. A district development committee has been proposed because it

has been observed that the present administrative structure, with no central co-ordinating body at the district level leads to duplication of efforts and waste of resources.

A paradigm for rural development should be sensitive to the needs of the rural populations, and must be based on the strategy of integrated rural development. This strategy must seek ways of involving and co-ordinating the efforts of all sectors in the economy of the district. Such an approach to rural development, if anything, must be conceived to create employment opportunities in rural areas, encourage local craftsmanship and the work of rural artisans with a view to generating the incomes badly needed in rural areas, such a strategy must be based on the assumptions that:

(i) rural development is a pre-requisite to overall national development;

(ii) a harmonious relationship between rural populations, policy makers and the rest of society is indispensable to balanced development and growth;

(iii) co-ordination of development projects and their integration between the rural and urban sectors is crucial to the attainment of development objectives.

An overriding caveat of this approach is that development planners and policy makers would make special efforts to avoid being caught in the snare of "cafeteria programming" that is the kind of sandwich planning which selects for personal rather than societal ends only those projects which show promise of quick realisation. A rural development strategy must envisage the creation of more, and production-oriented jobs at low-cost to generate incomes and employment. To develop the Tongu district, the constraints in capital and manpower would be heavy. Nevertheless the outcome would be exceedingly rewarding. Without a solution to the rural problems, the effect of the continuing government investment programme would be off-set by the growing inequality and it would be difficult to discern any progress towards self-sustaining rural development.

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