

THE CONTRIBUTIONS OF TEA FACTORIES ON THE
GROWTH OF HUMAN SETTLEMENTS IN KISII DISTRICT.
A CASE STUDY OF KEROKA AND KEBIRIGO

BY

CHARLES G. MUMBO
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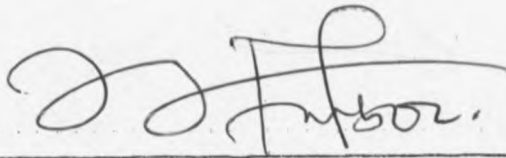
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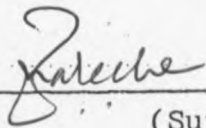
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(Supervisor)

DEDICATION

.This work is dedicated to my mother
Esther Bosibori and my father Nashon Mumbo for
their encouragement and inspiration.

and

My brother and sisters for their moral
support

and

My wife and children for their patience.

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The success of this work is through cooperation of many people and institutions.

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Mumbo, C.G.

ABSTRACT

The study examines the role of tea factories on the growth of nucleated settlements in Kisii district with Keroka and Kebirigo taken as case studies.

The study examines the relationship of population distribution and its influence on the pattern of human settlements in the district. In examining the role of tea factories, the study analysed the general factors influencing the growth of nucleated settlements and the role of tea factories in particular.

The findings reveal that physical expansion, increase of economic activities, population and provision of the infrastructural facilities in these centres is attributed to the establishment of tea factories within or near them. The findings also show that the role of tea factories has greater influence when combined with other influencing factors such as potentiality of resource hinterland and transportation network.

Finally the study recommends the various policy approaches through which the identified constraints and problems of the settlements could be solved and on which the general development of the settlements could be based.

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CHAPTER ONE

1. STATEMENT OF THE PROBLEM

Developing countries of the world face problems of regional inequalities, of which Kenya is not an exception. Such problems include inadequate employment opportunities, low incomes and low standards of living to mention a few. The unemployment situation is prevalent both in rural areas where population pressure is overcoming the available resources and urban areas where the rate of job creation does not match with demand. This kind of situation is aggravated by the increasing population growth rates. In 1962-69 period Kenya had a growth rate of 3.4% which rose to 4.0% in the 1969-1979 period.¹

The inequality is attributed to the past colonial administration, although the same trend has continued into post-colonial era. During the colonial period, development policy emphasized growth of nucleated settlements at the expense of rural areas. These nucleated settlements led to what Obudho (1976) calls "Colonial Urbanization".² This kind of spatio-structure of the colonial period mainly featured the centre-periphery model in which

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1. Kenya Government: Population census 1969 and 1979.
 2. Obudho, R.A: Periodic markets, urbanization and Regional Planning. A case study from Western Kenya, 1976.

activities such as commercial, industrial, administration and transportation network were concentrated at the centre while the peripheral areas were lagging behind in terms of development. These peripheral areas were source areas for the supply of labour and raw materials. The ILO report (1972) on employment earnings in Kenya revealed the tendency of major towns such as Nairobi and Mombasa growing and expanding at the expense of the peripheral areas. This, according to the report (ILO) will lead to regional imbalances between different regions and population groups.³ This pattern of imbalance in regional development form a source of many planning problems, which planners find difficult to solve.

Due to these imbalances developing countries have taken much interest in the way geographical space can be organised to increase the national rates of economic growth at the same time ensuring that benefits accrue to the majority of the people who happen to live in these peripheral areas.⁴ This

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3. ILO Report: Employment, earnings and Equality. A strategy for increasing productive employment in Kenya. Geneva 1972.
4. Hermansen, T: Spatial organization and Economic Development. The scope and task of spatial Planning IDS (Mysore), India 1971.

can be achieved by planning the allocation of investments in space as well as economic sectors. This then calls for the spread of industries throughout the country which can lead to higher rates of economic growth and generation of internal demand critical for regional economic development.⁵

A developing economy is usually recognised by the overwhelming share of agricultural activities in the occupational structure of the labour force. This in itself will be an argument for change due to low productivity and dependence of a large population on it. To reduce the size of population pressure on agriculture calls for the establishment of industries especially those which are agro-based and located in resource areas or within their neighbourhood such as tea processing ones.

However, judging from the above discussion and the adoption of the centre-periphery model of the colonial government, the nucleated settlements are found to be unevenly distributed in the country and their concentrations in places such as Nairobi and Mombasa has brought accumulation of planning problems.

5. Hermansen, T: Spatial organization and Economic Development. The scope and task of spatial Planning IDS (Mysore), India 1971.

With these problems at hand the government has adopted the growth and service centre strategies and programmes to reduce these regional imbalances. From these strategies policy guidelines could be made to streamline the medium and up coming nucleated settlements before the situation gets out of hand. Among the policies adopted is urban development whose main objectives are:-

- i) To achieve maximum development of rural areas in order to curb rural-urban migration.
- ii) Establish more geographical spread of urban physical infrastructure in order to promote more balanced economic growth throughout the country and manage equitable standards of social services between different regions.
- iii) To encourage the expansion of several intermediate and smaller nucleated settlements in addition to the existing ones in order to provide more alternatives for absorption of migrant population and avoid problems of

excessive concentration.⁶

he achievement of geographical distribution of services as outlined in the 1970-74 development plan will be by "directing development into a scheduled network of centres."⁷ This will enable the limited capital investment from the government and private sector to be deployed to stimulate economic expansion throughout the country. By directing investment into these centres, the small ones in the rural areas will be promoted which in future will grow and warrant to be served with public utilities such as water, electricity, telephones, sewerage disposal and banking facilities.⁸ This argument is further supported by the rural-urban strategy adopted in the sessional paper No. 1 of 1986 on Economic Management and Renewed growth which emphasize on the deconcentration of population from

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6. Kenya Government: Development Plan 1974-78.
 7. Ibid.
 8. Ibid.
 9. Kenya Government: Sessional Paper No. 1 of 1986 on Economic Management and Renewed Growth Nairobi 1986.

major towns and stresses on the growth of secondary and smaller nucleated settlements throughout the country?

This is assumed, will lead to a more diversified pattern of urban development which will include the rise of other nucleated settlements located in rural areas which can support the expansion of agriculture and facilitate further growth of related off-farm employment opportunities.

Industrial development policy has also been applied in this respect and the government has played a great role in the dispersion of industries from major concentration centres. This has been facilitated by the provision of infrastructural facilities and other concessions to encourage and attract both the public and private investors. This policy is aimed at ensuring industrial growth throughout the country and the policy follows two main measures:-

- (a) Promotion of resource based industries
- (b) Provision of infrastructural services to intermediate and smaller centres in the rural areas. 10

This further calls for the promotion of vigorous growth of secondary and smaller nucleated settlements through the development of agriculture. This can be achieved through the concentration of scarce resource on selected settlements so that a wide range of basic infrastructural facilities can be provided to support the development of agriculture and productive employment generating activities.

The dispersion of industries from main concentration centres to smaller ones spread in the rural areas is seen as a means to reduce inequality among regions. It is a deliberate government action. The outcome of this policy shows the establishment of the Pan African paper mills at Webuye, the sugar factory at Mumias, the Delmonte Cannery at Thika and Tea factories in Kisii district to mention a few. The overall aim of the policy was to utilize economically the agricultural resources of the area especially the agro-based type. This was believed could create employment opportunities, generate income and arrest the rural-urban migration. This argument is supported by Smith (1971) that:-

"Industrialization is regarded as the Key to acceleration of economic development in lagging areas.¹¹

11. Smith, D.M.: Industrial Location. An Economic Geographic analysis. New York 1971.

he above strategies are based on the assumption that once an industrial activity has been located in an area, it will stimulate economic growth, create employment opportunities and hence attract people to the place and significantly influence the growth of nucleated settlements. The growth of the settlement could therefore be in terms of population size, physical structures (buildings), transportation and communication, commercial activities and social services and amenities. Hall (1971) argues that nucleated settlements follow the Christaller view of city-country-side relations with notions of gravitation towards central places both to secure goods and services and arrest migration.¹²

In pursuing these principles the government initiated regional studies in the Mid 1970s which were aimed at examining the purpose of nucleated settlements and develop policy guidelines for directing development. These studies suggested a hierarchy of nucleated settlements. In a descending order the hierarchy consisted of the urban centre with a catchment population of 120,000, the Rural Centre with a catchment

12. Hall, P: Growth Centres in the European Urban System. Heinemann Educational Books, London 1980.

population of 40,000, market with population of 15,000, and the Local Centre with a population of 5,000.

These Centres were seen to be used as central places for the development of the surrounding rural areas. Since then the government policy has tended to guide both the growth of these Centres and their rural hinterlands. This is meant to achieve an integrated development of both areas.

The idea of urban development has been given attention in many development plans of Kenya. The 1970-74 development plan had the main strategy "to direct an increasing share of resources available to the nation towards rural areas with substantial amount spent on developing nucleated settlements."¹³ The 1979-83 Development Plan goes further and states that "rapid rate of urbanization is essential for the realization of the plan and must be distributed throughout the country".¹⁴ This is demonstrated by the expected growth of population in nucleated settlements of 9.5% and an increase of urban centres from 68 in 1978 to 108 in 1983.¹⁵

13. Kenya Government: Development Plan 1970-74

14. Ibid

15. Kenya Government: Development Plan 1979-83.

As noted above within Kisii district, the principle strategy for encouraging rural-urban development has been the production of cash crop farming particularly pyrethrum, tea and coffee which form the main industrial crops. In association with the development of these cash crops especially tea has been an active process of establishing tea processing plants in the area. This was seen as a means of creating employment opportunities and also promoting economic production of resources of the district.

In the process of siting tea processing plants (factories), there has been two principle options.

- (i) Where the tea processing plant is located within an existing settlement (growth centre).
- (ii) Located on a new site which have been selected within the tea growing zones.

In view of the introduction of industrial activities and their effects in the rural areas, the two alternatives raised the possibility of either using the establishment of tea factories to stimulate the growth of the existing centres in line with the government policy of service centres or using them to create completely new settlements.

However, from general observations, Kisii district is basically a rural agricultural economy. The level of designated service centres is very low with Kisii Town being the main urban centre while others are at the level of rural centres. Therefore the introduction of industrial activities in the district was assumed to have added significance of promoting greater urban growth. From a planning point of view, therefore it becomes significant to study the impact that the introduction of industrial plants has had on the growth of designated growth centres in the district.

The earliest tea factories in the district have been in operation for almost over twenty years which is considered as a reasonable time period for carrying out such an evaluation. The present study takes two particular designated service centres for special evaluation that is Keroka and Kebirigo. The two centres are considered to be more relevant for this study because they are designated centres which have both been associated with the growth of tea industries for the longest period. Examination of the impact of tea factories on the growth of designated growth centres is likely to give a better understanding of the validity of the basic assumption of using individual investments to promote urban development and other basic needs for further promotion of urban growth in these areas apart from industrial development.

Secondly the examination would also facilitate the evaluation of the impact of the industries at or within the centres.

So far this level of investigation has not been carried out and information on these aspects is going to be significant both for the implementation of the growth centre policy and the industrial decentralization policy as considered by the government.

1.1 Objectives of Study

In relation to the above stated problem the study mainly aims at fulfilling the following objectives:-

1. Examining the existing settlement pattern of the district focusing on the development of designated growth centres.
2. To examine the development of tea factories, their siting and distribution in relation to existing settlements in the district.
3. To examine the extent to which tea factories have influenced the growth of designated centres.

4. Examining other influences or factors on the growth of these designated service centres.
5. Identify the implications of the relationship between the development of tea factories and designated growth centres in the district.

1.2 Assumptions

The basic assumptions of the study are:-

- (a) The closeness of location of the tea factory to the existing centres have had greater impact.
- (b) Although tea factories have played a great role in the growth of these centres, there are other factors responsible.
- (c) For the future growth of the centres, a closer integration of both commercial functions of the centres with the development of resource hinterland must be maintained.

1.3. Scope of Study

The impact of tea factories is felt both within the nucleated settlement and the surrounding area. The study would consider this effect in order to establish major relationships between the development of factories and the general development of the area.

The study will examine the existing settlement pattern and the development of growth centres in the district, in historical perspective in order to determine their nature of development and forces behind their growth.

Specifically the study will examine the development of tea factories in the district, their siting and distribution in relation to existing settlements in order to establish the relationship between factory siting and the settlement and reasons for such siting of the factory. Analysis of the impact of the tea factories on the growth of these centres and the implications of these impacts on the future growth of the centres. These impacts will be in terms of physical development, socio-economic aspects such as population, employment, infrastructural facilities and commercial activities.

The study will also examine other influences or

factors on the growth of these centres inorder to show the extent of tea factories and finally the study draws some conclusions and recommendations as regards the future growth and development of these centres.

The study is organized into five chapters. Chapter one introduces the problem under study, objectives of study, scope, literature review and methodology. Chapter two examines the existing pattern of development in the district providing background information while Chapter three is devoted to the impact of tea factories on the growth centres and other varied influences, apart from tea factories. Chapter four deals with the implications of the major findings and recommendations. Chapter five will deal with summary and conclusion.

1.4 Research Methodology

A research of this nature will require several methods of data collection both primary and secondary. The first one was documentary research in the library and government offices. This was aimed at providing statistical information for the study area.

field surveys involved the physical observation of the existing land use pattern in the study areas (Kabirigo and Keroka). A physical count of some business establishments was done and photographs of some structures were taken.

Personal interviews were conducted with relevant officers in various agencies and firms such as the physical planning officer, factory managers and clerks to County Council and Urban Council respectively. Information on factory employment and services of the County Council offered to these centres was sought by means of a questionnaire survey.

Two types of questionnaires were administered. The household and business questionnaires were used. Household questionnaires were administered in order to get information such as level of income, crops grown, changes and problems experienced resulting from the establishment of the factory. In each settlement a sample of 27 households was selected at random.

Commercial questionnaires were administered to businessmen in each centre. A random sample of 30 was selected from Keroka and 22 from Kabirigo.

1. selecting this sample various business establishments were chosen, for example if there were four wholesales, two were chosen. This was done so as to have a fair representation of the business establishments. The questionnaires provided information concerning the type of business activities, level of income, number of employees and problems experienced and other related aspects of factory establishment.

1.5 Research Limitations

This study had its own limitations. Impact studies of this nature require a lot of quantitative data which was lacking especially of population for the settlements chosen. In 1969 and 1979 population census the population for these centres was combined with that of the sub/locations in which they are found.

No data was available especially before the establishment of the factories needed to offer the study a concrete base and even the secondary data available was inadequate to enable the study to be able to use analytical techniques such as input-output analysis to reveal the relationship between tea factories and growth of the centres. Given

this limitation together with inadequate finance and time, it was not possible to carry out a comprehensive study on the impacts as initially intended.

Despite the above limitations, the survey came out with some useful information that has been supplemented by secondary data to make the study a success.

1.6 Literature Review

Studies on the impact of agro-based industries on the growth of nucleated settlements in Kenya are very few. The few which have been done tend to concentrate on the major nucleated settlements neglecting the smaller ones and in particular those located in the rural areas.

The study sets out to examine nucleated settlements at a lower level which have grown due to the establishment of tea factories. Establishment of industries in rural areas is seen as one way of dispersing industries from major centres. The

idea of correcting this imbalance was derived from the growth centre theory coined by perroux in 1955.¹⁶ According to him development does not occur everywhere and at once but appears at specific points to which centripetal forces are attracted to and centrifugal forces emanate from. He was in particular referring to economic forces generated by firms and industries wherever they are established.

Myrdal (1957) following perroux's theory contented that the establishment of industries such as tea factories, sugar factories etc in an area would stimulate development due to generation of employment opportunities and the multiplier effect, felt in that area or region. Due to location of industry, the area would take advantage and attract economic activities which would in turn attract population.

According to Ronald, A. (1971), the choice of location of a factory should be made in the interest of the public because it cannot afford to ignore location as it will suffer. He summed up his argument in this connection as:-

16. Misra, R.P: Regional Development Planning in India' Vikas Publishing House New Delhi, 1974.

"The community at large suffers when congestion and pollution are concentrated at a point."¹⁷ He went further and addressed to the problems which will result from the establishment of the factory in a nucleated settlement in particular such as shortage of housing units, traffic congestion etc. and the benefits which would come there in such as increased commercial functions and creation of employment opportunities.

Smith (1971) in trying to expand more on Perroux's theory predicted the impact of establishing an industry in an area. According to him these impacts would involve employment creation with its regional multiplier. He specifically pinpoints direct impacts on incomes of farmers, wages, salaries and profits of workers and businessmen. He went further and argued that the multiplier effect could be used to study the economic impacts of the whole region and its environs.

Johnson, J. (1971) in examining the factors influencing industrial location went a head and examined among others, factors that influence the

17. Ronald, A: Spatial organization. Prentice Hall, International Editions, 1971.

growth of urban settlements and found out that the early developments in agriculture encouraged the concentration of people leading to creation of settlements. He went further and demonstrated further using examples of Mesopotamia where settlements came up due to the development of agriculture. Among the factors influencing growth, he singled out manufacturing as the main one having a major impact on the settlement area.

Morril, R.L. (1965) in his book on Migration, Spread and Growth of Urban Settlements stated that the evolution of urban settlements is a product of the complex interplay of forces of efficient location of industrial activities, transport routes and central place activities.¹⁸ He also demonstrated that the above factors would be responsible for the concentration or dispersion of these settlements. The development of a settlement, he goes further, takes place overtime with a changing economic and social setting and it is subject to spatial controls which are aimed at efficient location.

18. Morril, R.L: Migration, Spread and Growth of Urban Settlements, C.W.K. Gleep Publishers, Lund, 1965.

Taylor, D.R.F. (1979) in his study on Small Urban places in Kenya noted that urban settlements merged due to many factors such as past activities of early traders and colonial administration. In his view each settlement came up with a different function. As these settlements were separated he argues that the location of new activities like industries would be one way of ensuring integrated development. His arguments agrees with the aim of this study where integrated approach of development of the nucleated settlement and its hinterland should be encouraged.

Lean, W. (1977) in his economic approach suggests that to a large extent the size of an urban settlement would depend on the amount of goods and services provided and hence growth of these settlements is a response to industrial establishment.

He summarizes his argument as follows:-

"An increase in base activity will lead to an increase in incomes and hence more services in the area. This will further attract labour and increase in population."¹⁹

19. Lean, W: Aspects of Land Economics.
The Pritan press, Bath, 1977.

Doxiadis, C.A. (1968) in his Introduction to Human Settlements examined how cities after expansion become loose systems where under-developed areas with the urban settlement require coordination. In that way, according to him the city would bring people together requiring a high degree of accessibility between the activities and places. This then calls for a high quality of transportation system. In this argument he was putting his message across that development plans are meant to coordinate and guide development in urban systems. However, the situation in developing countries is different in that development plans are drawn but little is done when it comes to its implementation. This coincides with the case studies taken in this study where development plans have been prepared but development is taking its own course without regard to the existence of the development plan.

Agbatekwe, A. (1976) examined the impact of demographic and socio-economic factors on urban settlements. He mainly focused on land-use pattern and structure of land value in these settlements.

KHaguli, H. (1979) in examining the impact of sugar factory on Mumias town found out that the

establishment of the factory has led to the increase of population, improved infrastructure, expansion of spatial development and creation of employment opportunities. This study offers an explanation to the growth of nucleated settlements like the case of this study, as it conforms with economic base theory.

Darkoh (1975) in discussing about industrialization in Ghana argues that each project using local raw materials contributes to the growth of industrial related activities in the area and stimulation of its hinterland. Darwent (1969) in his contribution to location of an industry argued that if a major industry or enterprise is located at a point in geographic space; it would attract growth in that specific location. According to him such kind of industry induces polarized growth in the economy. The views of the two authors will be related to the present study and could be applied in order to understand how establishment of the factories leads to growth of other industrial related activities and induce further growth of the settlements.

Renner (1947) when discussing about industrial location stated that an industry tends to locate at a point which provides optimum access to its

component elements. He proceeds further to suggest that processing industries which use perishable raw materials (like tea in this case) and involve bulky weight loss should be located in raw material production areas. This is meant to maintain the quality at the minimum cost. Norcliffe (1975) supports this argument, by stating that location of processing industries should correspond with raw material production zones. These two arguments applies to the present study where tea factories are located in tea producing zones as tea is a perishable commodity when in raw form, if left for a period of more than twenty four hours, this will lead to the lowering of qality.

Arvo (1968) examined the historical geography of tea in Kenya and the consequences resulting from the rapid expansion of tea production. He however focused on the smallholder sector limiting the scope of the effects of tea expansion such as more factories, increase of inccmes and generation of employment opportunities from ventures different from such as commercial enterprises.

Stem (1972) made a study of KTDA projects. He evaluated them using a cost-benefit analysis method

and his aim was to know as to whether there are other alternative uses to be made from land, labour and incomes from tea. From his studies he concluded that KTDA projects are valuable and have a greater multiplier effects especially to the factory, farmers and surrounding settlements. These effects are in terms of higher returns to the factory, more incomes to the farmers and generation and increase of commercial activities in the nearby settlements which conforms with the issues at hand in this study when tea factories generate commercial activities and other related aspects to the nearby settlements.

Michoma (1980) examined the role of agro-based industries in rural development by using tea as a case study. He examined the spin-off effects of the industry in the region with respect to the various linkages of the industry to the rural economy. He found out that the industry had weak forward linkages because the crop does not allow any further advanced manufacturing activity and the problems of rural development which he reckons that if these problems are removed the tea industry could contribute more to the development of the rural economy. From his studies main focus was in the rural economy especially in

terms of income earnings and job creation while this present study will assess the contributions of tea factories on the growth of nucleated settlements found closeby or within which they are located.

Odada, J.E.O. (1979) examined the economic impact of the sugar industry in a national context such as its contribution to employment and foreign exchange earning and paid little attention to its impact on the growth of settlements in the region. This study intends to go further and examine the impact of an industry on the growth of specific settlements Kebirigo and Keroka.

The related literature reviewed above provides useful lessons which this study intends to borrow in order to understand the problem to be investigated and seek possible solutions. Although the lessons drawn from the literature review form a small fraction of the impact studies examples have shown some parameters used in assessment such as physical developments, changes in the level of services population and employment creation opportunities to mention a few which will be used in the present study.

CHAPTER TWO

2.0 REVIEW OF EXISTING PATTERN OF DEVELOPMENT

2.1 INTRODUCTION

The Chapter provides the background information on physical characteristics, population, development of human settlement patterns and the development of tea factories in the District.

2.1.1. Location

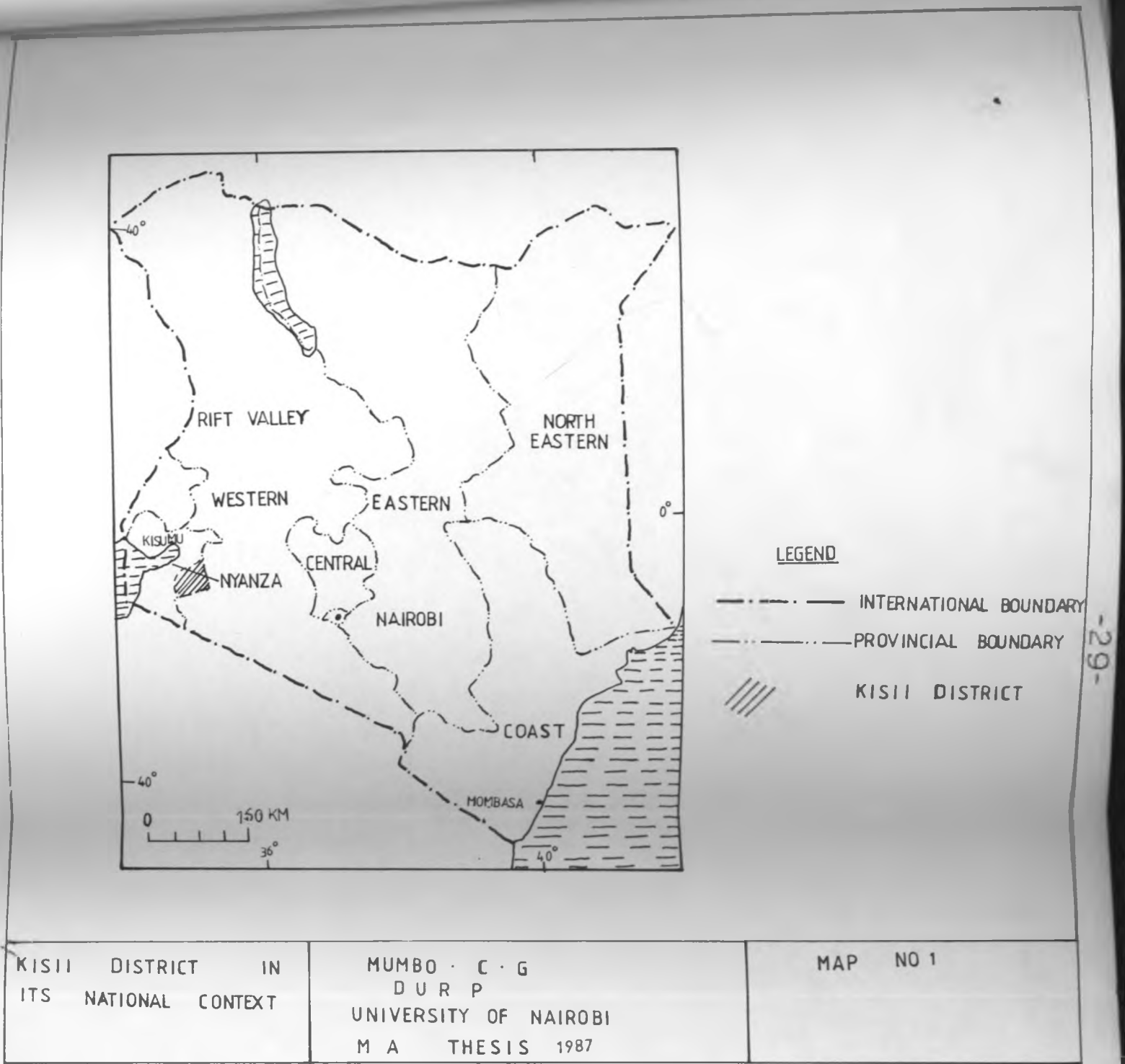
Kisii District is one of the southern most districts in Nyanza Province. The District is bordered by Narok District to the south, South Nyanza to the west and Kericho District to the east. It is found within the Lake Victoria basin.

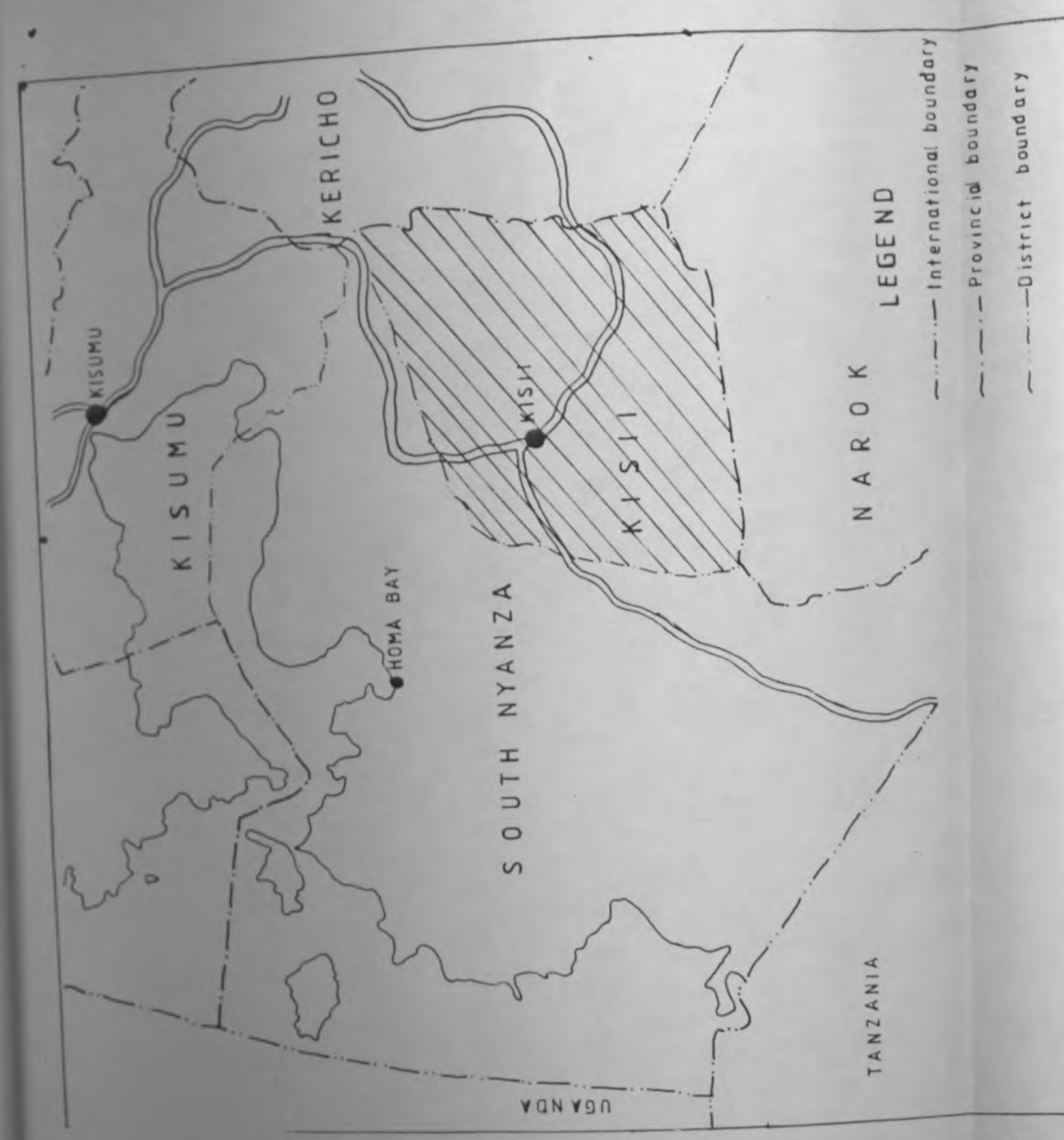
The District covers an area of 2,196 square kilometres and had a population of 367,348 people in 1979. It is estimated to be over one million by 1988 with an estimated density of over 450 persons per square kilometre. Administratively the District is divided into five divisions namely Nyamira, Irianyi, Bosongo, Manga and Ogembo, with twenty four locations and seventy nine sub-locations. See map No.3 showing administrative divisions.

westwards. It is characterised by plains dissected with small streams which dry up during the dry season.

2.1.3. Drainage

The drainage pattern of the district runs from east





KISII DISTRICT LOCATION IN THE REGIONAL CONTEXT	MUMBO . C . G	MAP No
	D U R P	2
	UNIVERSITY OF NAIROBI	
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- URBAN CENTRES
- ▲ RURAL CENTRES
- MARKET CENTRES
- LOCAL CENTRES

- DISTRICT BOUNDARY
- DIVISION BOUNDARY
- LOCATION BOUNDARY

KILOMETRES 5 4 3 2 1 0 5 10

KISII DISTRICT

TITLE
ADMINISTRATIVE
BOUNDARIES



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MAP REF. No. 3

2.1.2 . Relief

The District is divided into three physical divisions corresponding to the height above level.

- (a) Division over 1,800 metres above sea level covers parts of Nyamira, Manga and Irianyi divisions. It is characterised by deeply dissected peneplain with steep ridges separated by deep flat-bottomed valleys. These valleys are occasionally choked with swampy grass.
- (b) Division between 1,500 - 1,800 metres above sea level. It covers parts of Manga, and Bosongo divisions. It is characterised by gentle and undulating topography comprised of peneplains with occasional outcrop of rocks.
- (c) Division below 1,500 metres above sea level is found mainly on the western parts of the district covering western parts of Bosongo division. It forms part of the lake Victoria basin and is comprised of generally gentle topography tilting westwards. It is characterised by plains dissected with small streams which dry up during the dry season.

2.1.3. Drainage

The drainage pattern of the district runs from east

to west direction flowing into Lake Victoria¹. The landscape is generally tilted towards the west. The main river systems are Mogusii which drains parts of Manga and Bosongo divisions. Kuja, the main river in the district together with its tributaries drains parts of Manga, Nyamira, Irianyi and Bosongo divisions. Lastly there is the Sondu river found on the eastern fringe of the district and drains parts of Nyamira division. See Map No. 4 showing the drainage pattern of the district.

2.1.4. Geology

Geologically Kisii district is made up of three main rock systems. These are the Bukoban system, the Nyanzian and the Kavirondian systems. The Bukoban system covers almost the whole of the district area and is also known as the Kisii series. It is a three fold series with upper and lower divisions of lava separated by quartzites. They are of pre-cambrian age although younger than the Nyanzian system. This system mainly covers parts of Manga, Nyamira, Irianyi and Bosongo divisions.

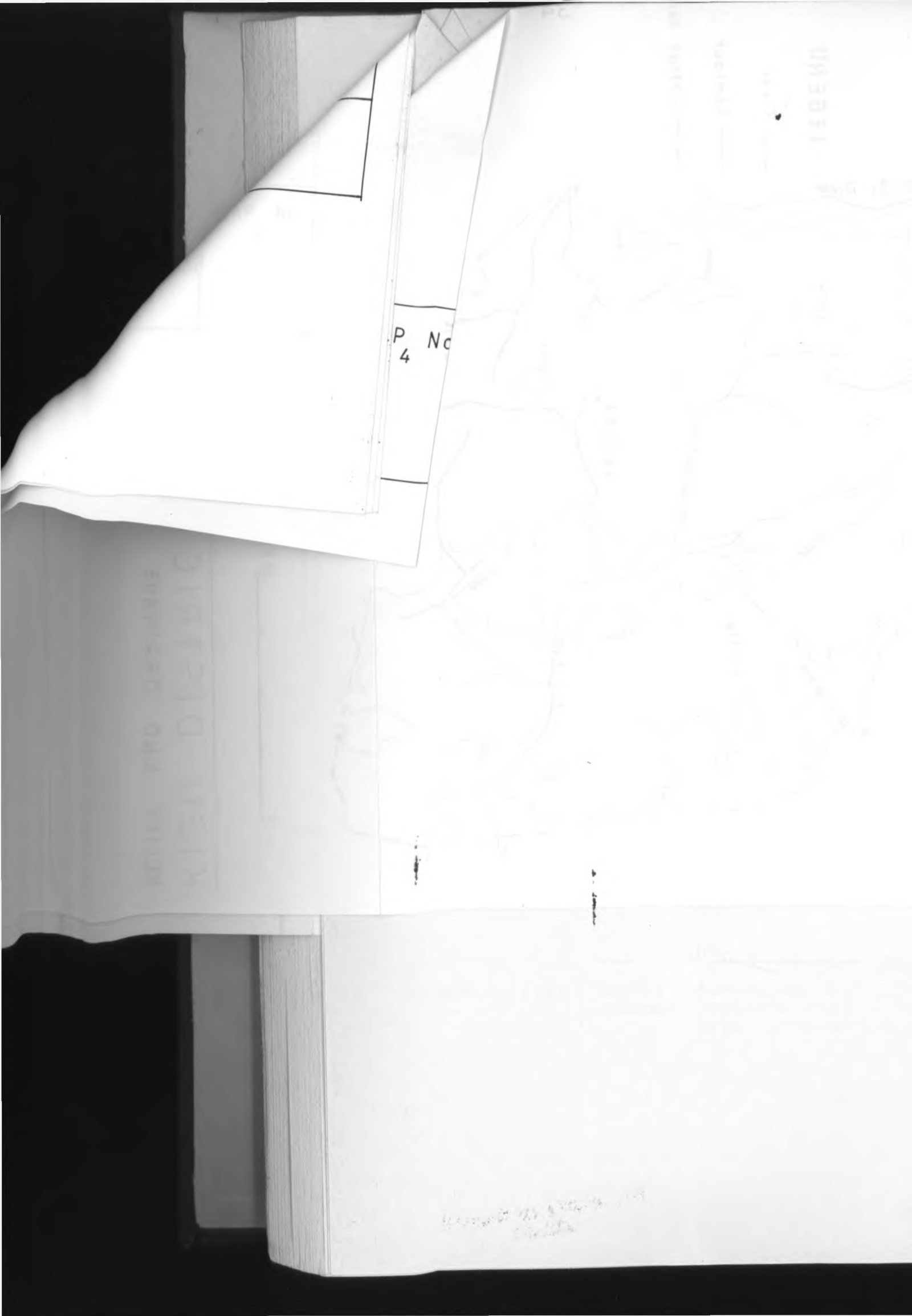
1. Uchendu, R.D. and Anthony, K.R.M. : Agricultural Change in Kisii District, Kenya. E.A.L.B., Nairobi, 1975.



KISII DISTRICT
RELIEF AND DRAINAGE

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M . A T H E S I S 1987

MAP No
4



P 4 No

LEGEND

1/10/1970 10:30 AM 1/10/1970 10:30 AM
1/10/1970 10:30 AM 1/10/1970 10:30 AM

The Nyanzian system are found to the North-west and eastern parts of the district covering Manga and Nyamira divisions. The system is made up of great thickness of lava flows and locally the system includes other sediments and banded ironstones.

The Kavirondian system mostly consisting of Granites are found to the northwest fringe of the district covering parts of Manga and Bosongo divisions. They are of precambrian age; some with intrusive origin while others are the product of granitization.

2.1.5. Soils

Generally three types of soils are identified in the district:

- (a) Kisii red loams - occupy most of Borabu location in Nyamira division and parts of Irianyi division west of Keroka. The soils flake when exposed and characteristically are dark or brown in colour².
- (b) Kisii highland loams - they are found widely in the district covering larger parts of Manga, Nyamira

2. Uchendu, R.D. and Anthony, K.R..M. 1975, Op.Cit.



KISII DISTRICT
SOILS

MUMBO . C . G
D U R P
UNIVERSITY OF NAIROBI
M.A THESIS 1987

MAP No 5

and Irianyi divisions. They are categorised into two i.e. those found on flat valley bottoms which are reddish brown to red in colour and are deep, and those found on the hill tops and hillsides which are shallow and stony with occasional rock out crop See map No. 5.

- (c) Kisii savannah loams - found mainly on the lower parts of the district covering parts of Bosongo and Irianyi divisions. They are shallow and vary in colour. They are characterised by severe erosion and quick run off, and are mainly found on valley bottoms.⁴

2.1.6. Climate

Owing to high altitude, the district does not experience excessive temperatures although it is near the equator. The minimum night temperatures average 10.1°C and the maximum day temperatures of 28.7°C throughout the year. The average normal temperature is about 19.4°C with a relative humidity of 50 - 60%.⁴

The highest temperatures occur during the dry season covering January to March period. However no

-
3. Garst, R.D. The spatial Diffusion of agricultural innovations in Kisii District, Kenya. Unpublished Ph.D thesis, Michigan State University, 1972.
4. Republic of Kenya. 1980 Kisii District Development Plan, 1979 - 83,

temperature data is available except for Kisii town with day temperature of 28.9°C and mean night temperature of 12.8°C .

Rainfall is high with a minimum of 2000 mm. with a probability of 90%. It is sufficient and evenly distributed over the district. Occurrence of precipitation corresponds with altitude. The areas above 2000 metres above sea level receive the highest rainfall and covers the western parts of the district (parts of Bosongo and Irianyi divisions). The central part of the district receive 1,600 mm of rain annually while the extreme north and south parts receive less than 1,125 mm of rain annually.⁵

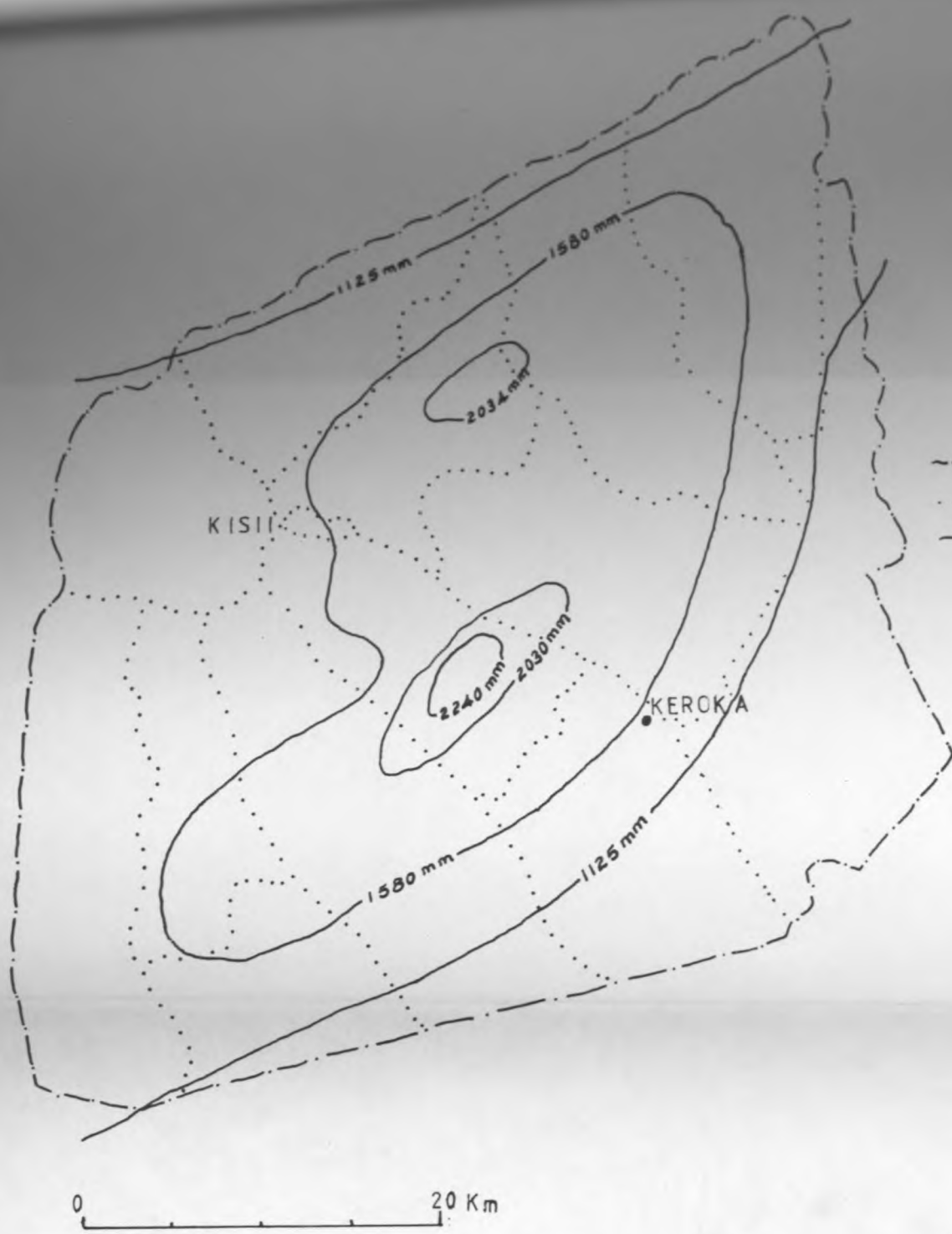
Rainfall pattern is bimodal and hence permits two crops a year. Heavy rains occur in the months of April to June and is accompanied by hailstones. See map No. 6 showing annual precipitation and fig. No. 1 showing monthly annual precipitation.

2.1.7 Ecological zones

From the interaction of the above factors, the district is ecologically divided into two zones, namely the Kikuyu grass and the star grass.

5. Meteorological Department Records, Kisii Station, 1978.

P 4 NC 105

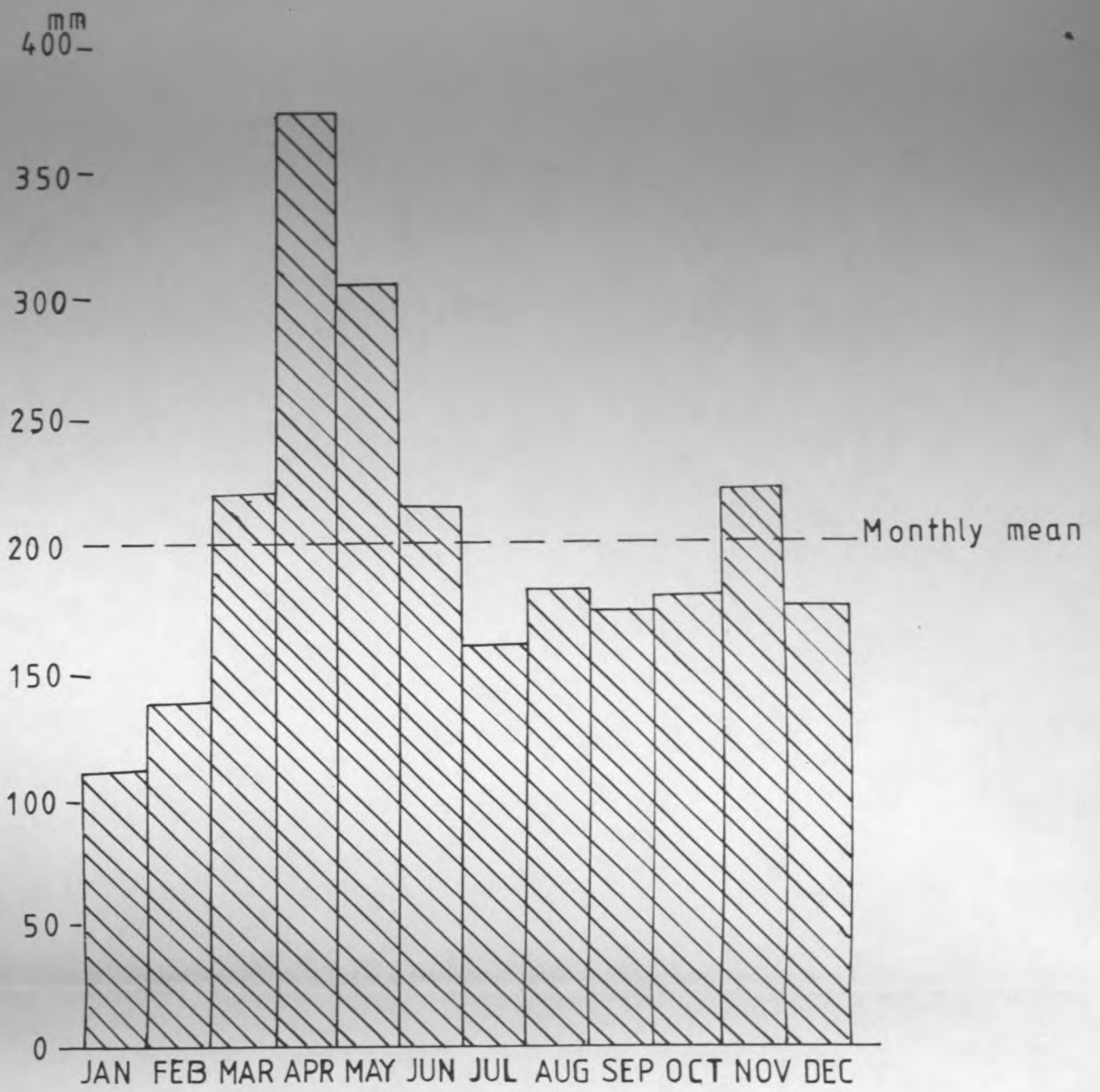


LEGEND
 --- District boundary
 Location boundary
 — Isohyet

KISII DISTRICT
 ANNUAL PRECIPITATION

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MAP No
 6



KISII DISTRICT
MONTHLY AVERAGE PRECIPITATION

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D U R P
UNIVERSITY OF NAIROBI
M.A THESIS

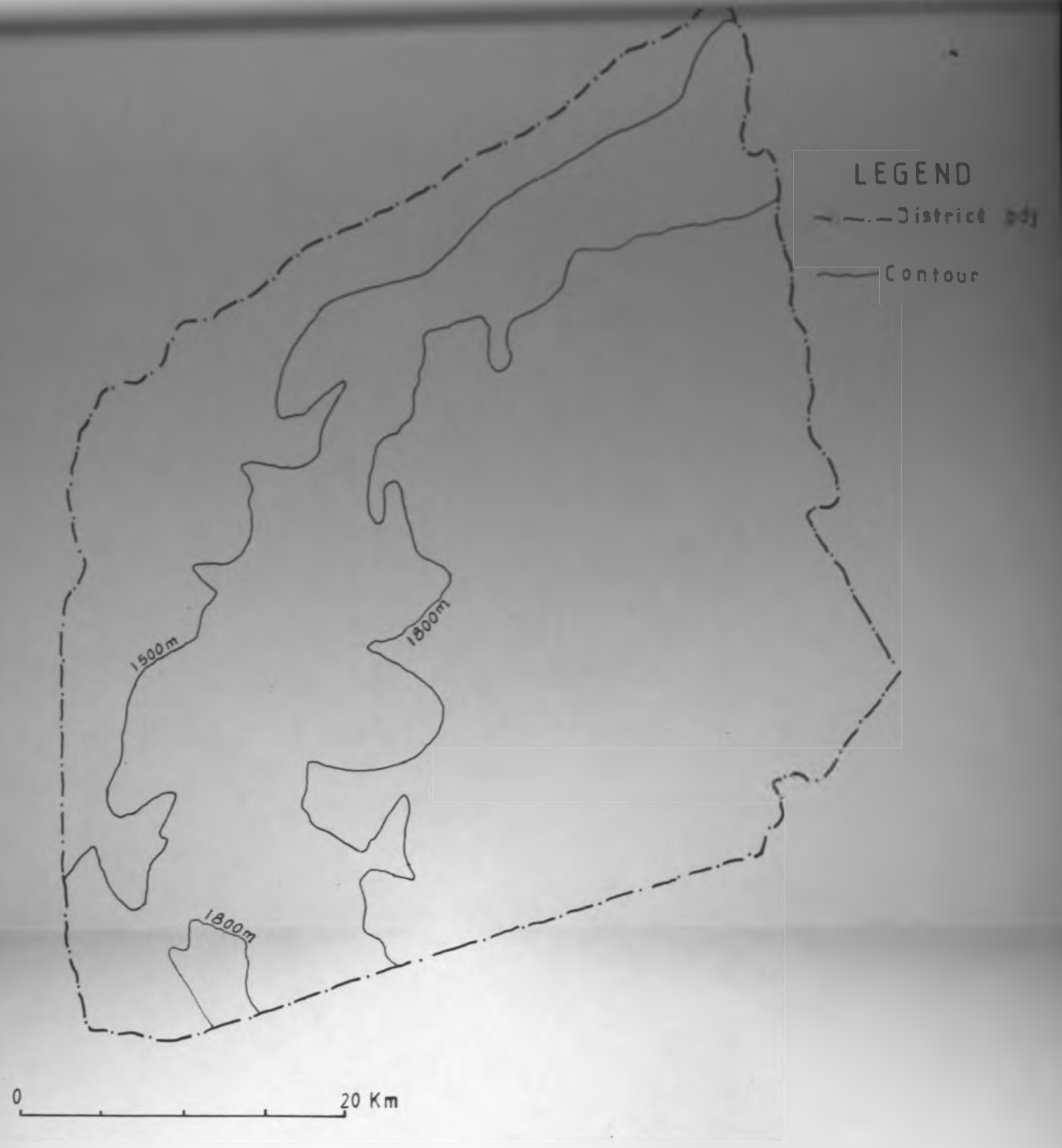
MAP No

Kikuyu grass zone - Falls above 1,800 metres, above sea level and has the highest agricultural potential and hence the highest land carrying capacity. The zone has a cool climate with high rainfall. The zone is suitable for the growing of crops such as pyrethrum, tea, potatoes, vegetables, fruits and coffee. However the zone is well suited for intensive crop farming.

Star grass zone - The zone corresponds to the lower areas of the highlands ranging between 1,350 m. and 1,800 m. above sea level. The zone has less rainfall compared to the Kikuyu grass zone. It is suitable for intensive cultivation although ranching and afforestation are a good possibility. The main crops grown include maize, coffee, beans, bananas, vegetables and fruits, e.g. pineapples. The zone is rather dry for the production of tea although with greater emphasis on crop production and improvements done, more production could be realised. The zone is also suitable for livestock development see Map No. 7 showing the ecological zones of the district.

2.2.0. Agricultural Activities

Agricultural activities of the district are found in three agricultural zones which conform with variations in altitude, temperature, rainfall and soils.



KISII DISTRICT ECOZONES	MUMBO . C . G D U R P UNIVERSITY OF NAIROBI M.A THESIS 1987	MAP No 7
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Each zone specializes in the production of different crops.

- (a) Agricultural zone one lies between 1,500 - 1,600 metres and covers the western part of the district (parts of Bosongo and Manga Divisions). The main agricultural activities of this zone include sugar cane growing, bananas and groundnuts.
- (b) Agricultural zone two comprises of Kisii highlands and lies over 1,800 metres above sea level. It covers parts of Irianyi, Manga and Nyamira divisions. The main crops grown are tea, pyrethrum and milk production.
- (c) Agricultural zone three comprises of the middle lands of the district lying between 1,600 - 1,800 metres. The zone covers parts of Nyamira division, lower parts of Irianyi, Manga and Ogembo divisions. Maize, coffee and bananas are the main crops ^{grown} growth.

Comparison of the zones show an imbalance as regards incomes distribution as most of the income generating crops are confined within the highlands. These are the areas where tea, pyrethrum, passion fruits and milk production have high potentials, and coincides with high population densities.

The average farm holding per household in the district is two hectares although in areas with the highest densities the average holdings are below 1.5 hectares, especially in Manga and Irianyi divisions.

The development of the district largely depends on the main cash crops which provide income to the majority of the farmers. Most of these cash crops are industrial development oriented and the following is a brief presentation of the main cash crops in the district.

2.2.1. Pyrethrum

Earlier 70's pyrethrum was the leading cash crop in the district but of late has declined due to the fall in the world market prices. The crop is grown on higher altitudes and cooler climatic areas. Production of the crop is done by small scale farmers while marketing is done through farmers cooperative societies. The crop covers 8,429 hectares.⁶ It is a labour intensive crop and its production can be increased by using a combination of factors such as labour inputs, spraying and application of fertilizers.

6. Hubert K. Draft Plan for Kisii District Development Committee, Kisii 1972.

The processing of the product is not done within the district, but has to be transported to Nakuru where there is a processing plant. The main problems associated with marketing and processing are the high transportation costs from the production areas to the processing plant and the low price in the world market.

2.2.2. Coffee

The crop was introduced in the district on commercial basis in 1931. Production is done by small scale farmers and the coffee zone falls within the western parts of the district. It covers an area of 6,745 hectares.⁷

Labour input especially in land preparation, harvesting and transporting to the factory is very important for good quality coffee. Weeding, pruning and spraying are done periodically. Processing of the coffee beans is done halfly at the coffee factories which are located in the coffee producing zone while complete processing is done at Nairobi by the coffee board of Kenya. The primary coffee factories are mostly found near water supply sources because their siting is governed by the availability of water.

7. Kenya Government : Kisii District Development Plan 1979 - 83.

Processing and marketing of coffee is done through organized primary cooperative societies affiliated to the giant Kisii Farmers Cooperative Union. There are 26 primary cooperatives with 61 coffee factories well distributed over the coffee growing zone. However the coffee industry has been experiencing management problems at the primary cooperative level which include delay in payments (which takes 6 - 10 months) after delivery and illiterate officials. Other problems include those of transportation especially from the primary coffee factories which are served by small rural access roads and impassable during the rainy season. It has potential for higher production if the delays in payments are removed and improvement in the management.

2.2.3. Tea

The crop was introduced in the district in 1957. It is grown on higher altitudes and cooler climatic areas unlike pyrethrum. In 1981 tea cultivation covered 9,844 hectares. This acreage has increased as more and more farmers are growing tea especially in the areas which were marginal.

Recently also there has been a tendency of growing tea below 1,800 m. above sea level which has led to the increase of tea production although the

actual acreage figures were not available. Despite its increase in quantity, its quality would be affected due to the effect of altitude. Like pyrethrum, tea is a labour intensive crop and its success depends on the application of fertilizers, labour inputs and proper weeding.

Tea processing is done in eight tea factories at Nyankoba, Kebirigo, Ogembo, Nyamache, Kiamokama, Nyansiongo, Tombe and Sanganyii. Each factory is employing 180 workers with the leaf base section having over 60 employees. These factories are established within tea production areas and processing is done almost the same day as tea is a perishable crop, and if left for long could lower the quality. The siting of these factories is closely associated with the existing designated service centres and the pattern of communication.

Once the crop is processed at the factory, it is marketed by the Tea Board of Kenya both locally and internationally.

2.2.4. The development of tea in Kisii District

Tea growing as indicated above is done on small holdings by small scale farmers. The crop is managed

by Kenya Tea Development Authority which was formed in 1964 to promote tea growing by small scale farmers in the former native lands which were suitable for tea growing.

Tea was introduced in the district in 1957 when ten acres of the crop were planted at Bomabacho sub-location in Nyamira division. Later it spread to other ideal tea growing areas such as Mokomoni in north Borabu Location of Nyamira division and Magombo in Kitutu east location of Manga Division. These areas had good soils, heavy rainfall and were on higher altitudes and conducive to tea growing.

At the beginning, a "tea line" was established where tea was initially introduced and this was meant to control the expansion of its cultivation westwards into unsuitable areas. The line covered most parts of Nyamira, Irianyi and Manga divisions. See Map No. 8 showing the ideal tea growing areas. However later the line moved gradually (about 5 kms. annually) towards the west of the line until almost the whole district was inside the line. This expansion of tea cultivation is done due to the profitability of the crop providing cash earnings each month and bonus paid at the end of the year to farmers.



LEGEND

-  Ideal for tea
-  Marginal for tea
-  District boundary

0 20 Km

KISII DISTRICT
TEA GROWING POTENTIAL

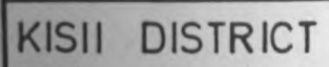
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MAP No
8

Initially restriction on tea growing below 1,700 metres was imposed but the recent tendency of growing it in these marginal areas has led to the increase of tea production in terms of quantity produced and hectareage, although this trend has greatly affected the quality of tea due to the effects of the altitude and improper management of the crop in such marginal areas. The estimated yield per hectare is 2.2 tons.⁸

Tea is processed when in its raw form and this processing is done at tea factories. Establishment of a tea factory in a region or zone takes into account many factors such as the availability of raw materials (green tea leaves) being the major one. Others include, the availability of land and in this respect an average hectareage for a tea plant is 5.4 hectares, central location as regards the zone of production, availability of water, transport means and topography of the area. The feasibility study for factory siting is done by the Kenya Tea Development Authority Planners from the head office. Once an appropriate site has been found a factory is established. Some of the factories are located near the existing designated service centres or within as examples will be given later. See Map No. 9 showing the distribution and location of tea factories in the district.

8. Republic of Kenya : Kisii District Development Plan 1979 - 83.
Government Printers, Nairobi, 1979.





LEGEND

□ TEA FACTORY

△ BUYING CENTRE

◆ URBAN CENTRE

KILOMETRES 5 4 3 2 1 0 5 10

TITLE DISTRIBUTION
OF TEA FACTORIES
& BUYING CENTRES



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MAP REF. No. 9

From the map it is shown that seven out of the eight tea factories in the district are found in the ideal area for tea growing and this occupies areas to the eastern part of the district. These areas cover Manga, Nyamira, Irianyi and parts of Ogembo divisions. Also from the map it is seen that only Ogembo tea factory, which was established in 1984, falls in the marginal tea growing areas, an indication that tea growing is expanding to those areas which were initially restricted as mentioned above.

In relation to the distribution of tea factories and in order to make green leaves reach the factory with least damage; a network of buying centres in the district are located at the convenience of the farmers. Their location also depends on the amount of green leaf produced in the area. However for an area to have a tea buying centre, it has to produce a minimum of 2,700 kgs of green leaf per day.

It is observed that most of the tea factories are sited within the existing nucleated settlements such as Kebirigo, Tombe, Nyansiongo, Kiamokama and Nyamache. Others are also sited a few kilometres from the existing nucleated settlements such as Nyankoba, Sanganyi and Ogembo. tea factories. Those sited within the existing nucleated settlements, apart from being found within the

tea producing zone i.e. availability of tea, transportation means, water, land was available especially the trust land which was under the jurisdiction of the County Council or sometimes like the case of Kebirigo, the general landscape was gentle and centrality of the area to cater for the large tea producing areas. Some of those which are away from the existing nucleated settlement such as Sanganyi, Nyankoba and Ogembo were sited in areas which were central and land was cheap as the owners were willing to have a tea processing plant within their reach. As a practical example Sanganyi tea factory was sited near Nyaramba trading centre, where after a feasibility study was done and the location found, the owner offered his tea trees to be uprooted to give way for the construction of the tea factory although he was compensated.

The first tea factory to be established in the district was Nyankoba and its establishment was as a result of a lot of tea produced from the initial tea growing areas mentioned above. As the acreage increased, tea production also increased and there was congestion at Nyankoba tea factory which led to some of the tea to get spoilt and hence lowering of its quality. This further necessitated the construction of another factory to ease congestion at the already congested Nyankoba tea factory. This led to the construction of Kebirigo tea factory to serve Nyamira, Manga and parts of Irianyi divisions.

As production continued to increase due to expansion in acreage, congestion resulted in Kebirigo tea factory and hence Nyansiongo tea factory was established to cater for North Borabu location and specifically the new settlement schemes. The trend continued like that and the main determinant factor for the establishment of a tea factory was the availability of raw material (tea), other factors were water, land and transportation means. Due to these factors the eight factories were established in Kisii district. In order of construction, Nyankoba was the first, then Kebirigo, Nyansiongo, Kiamokama, Nyamache, Tombe, Ogembo and Sanganyi in that order respectively.

2.3.0. Population and Human Settlements

2.3.1. Population Characteristics

Kisii district is mainly inhabited by a homogenous ethnic tribe known as Gusii. Other tribes include those from other parts of the country and neighbouring countries such as Uganda and Tanzania. These have come to the district in search of employment opportunities, business activities and marriage (especially women). The tribes from the other parts of the country include Luos, Luhyas, Kikuyus, Kambas and Kalenjins.

Before 1948, the population figures for the district

were not available and the district was counted as part of south Nyanza. In 1948; the census revealed the population of the district to be 225,108 people. In 1962 the population had risen to 519,418 people giving a growth rate of 6% per annum.⁹ In 1969 the population was 675,041, giving a growth rate of 3.4% per annum.¹⁰ In 1979 the population rose to 869,512 people thus giving a growth rate of 2.6% per annum which was below the national average of 4.0% per annum.¹¹ The decline in the growth rate suggests that either there was a loss of population from the district or a decrease in the rate of natural increase. The district constituted 5.7% of the total national population.

The loss of the population from the district could be attributed to the migration of young and energetic people aged 15 - 50 years outside the district looking for employment opportunities as the land resources were becoming scarce. Also the fall in the rate of natural increase might have resulted due to difficulties experienced in having large numbers in conjunction with the adoption of family planning practices. The implications of this trend in future is that, if it continues, the population growth rate of the district may decline further, as more and more people are being enlightened

9. East African Statistics Department, Population Census 1948 and 1962.

10. Kenya Government : Population Census 1969

11. Kenya Government : Population Census 1979.

with the family planning practices and migration to urban centres in search of greener pastures..

The table below shows the district's population totals by division in 1962, 1969 and 1979.

Table 1:

KISII DISTRICT POPULATION TOTALS BY DIVISION
IN 1962, 1969 AND 1979

Division	1962	1969	1979
Nyamira	126,609	150,032	198,308
Irianyi	73,332	93,781	127,097
Manga	162,245	191,245	224,293
Bosongo	64,522	85,660	119,531
Ogembo	103,437	148,237	190,919
Kisii town	4,530	6,080	9,364
Kisii District	519,418	675,041	869,512

Source: Population Census Reports 1962, 1969 and 1979

From the table Manga division is the leading with the highest population of 162,245 in 1962, 191,245 in 1969 and 224,293 in 1979, followed by Nyamira and then Ogembo division. The least is Kisii town which is actually growing and at present is the main principal urban centre in the district. There are reasons for the three divisions having the highest populations as will

be discussed under the appropriate sub-sections.

2.2.2 Population Composition

A notable feature of the population of the district is the higher proportion of children under 15 years of age. They form 58% of the total district population as revealed by the 1979 population census¹², which shows that there are more dependants than the working class population. The structure also indicates a broad base comprised of young people; a common characteristic of developing countries. The age structure for the district is shown in the appendix for 1969 and appendix for 1979. Comparison of the two structures showsthat both have broad bases indicating a larger number of dependants, although in 1979, the base had shown a decline. This is supported by the fall of household size of 7.6 persons in 1969 to 6.1 persons in 1979. This suggests possibly a decline in the natural growth rate. The table below shows the average household size by division using the 1979 population census.

From the table Manga division has the highest household size of 6.5 while the least Kisii Municipality has 5.5 persons. However the divisions are not far from the average household size for the district of 6.1 persons which is a decline from 7.6 persons in 1969

12. Republic of Kenya: Kisii District Development Plan 1984 - 88.

Table 2:

KISII DISTRICT HOUSEHOLD SIZE

Division	Household Size	No. of Households
Nyamira	6.1	33,135
Irianyi	6.1	19,311
Manga	6.5	30,586
Ogembo	6.3	30,168
Bosongo	5.6	20,996
Kisii Municipality	5.5	5,410
Kisii District	6.1	139,606

Source: Population Census, 1979.

as shown above. It is suggested that with the same trend, the average household size could decrease in future possibly due to economic constraints.

Another feature of the population composition is the change in sex ratio:

$$\text{Sex ratio} = \frac{\text{Total male population}}{\text{Total female population}} \times 100$$

In 1969 the sex ratio was 100.9 and in 1979 was 94.9 having fallen by 5.7%. In 1969 the sex ratio showed that there was a balance of males and females but in 1979 it had fallen and this is attributed to the out-migration of male population from the district possibly to look for employment in other areas outside their home district. Or sometimes this increase in

female population could also be attributed to the increase in proportion of females between the two census periods. This change in sex ratio also varies from division to division see table below:

Table 3:

KISII DISTRICT, SEX RATIO BY
DIVISION 1969 AND 1979

Division	Sex	Ratio
	1969	1979
Nyamira	107.8	96.6
Manga	97.8	92.4
Irianyi	96.6	94.0
Bosongo	95.3	92.4
Ogembo	100.2	94.4
Kisii Town	146.2	116.2
Kisii District	100.9	94.9

Source: Population Census 1969 and 1979.

The table shows that Nyamira had the highest sex ratio both in 1969 and 1979 followed by Ogembo and then Manga. However in all divisions the sex ratio has declined between 1969 and 1979 hence confirming that there are more females than males. This is so because females are left at home while males go out to look for employment.

2. 3. Population Distribution and Density

Population distribution in the district is almost even. Greater concentrations are found in high agricultural potential areas such as Manga, Nyamira and Irianyi divisions and main urban centres such as Kisii town.

Kisii district is the most densely populated district in Nyanza Province and Kenya as a whole. In 1969 the district had a density of 307 persons per square kilometre while Kakamega had 220, Kiambu 184, Kisumu 192, Siaya 151 and for Kenya the density was 19. In 1979 the density of population rose to 396 persons per square kilometre while that of other districts such as Kakamega was 290, Kiambu 266, Kisumu 231, Siaya 186 and for the country was 25. (See table below).

Table 4:

AVERAGE DENSITY FOR FIVE DENSELY POPULATED AGRICULTURAL DISTRICTS

District	Persons per Km ² (Density)	
	1969	1979
Kisii	307	395
Kakamega	220	290
Kiambu	184	266
Kisumu	192	231
Siaya	151	186
Kenya	19	25

Source : Population Census 1969 and 1979

Within the district itself, the population density increases as one moves into higher areas and these areas coincide with high agricultural potentials. On divisional basis Manga is the leading with a population density of 471, followed by Irianyi 423, Ogembo 414, Bosongo 364 and Nyamira 309. Kisii municipality being the main urban centre Kisii town has a population density of 844. (See table below). The implications of these densities is that as the population increases and land being fixed, productivity might reduce and higher densities in future will force people to migrate to urban areas, and cause pressure on the existing facilities.

Table 5:

KISII DISTRICT POPULATION TOTALS AND DENSITIES
BY DIVISION - 1979

Division	Population Totals	Density (Persons, per km ²)
Nyamira	198,308	309
Irianyi	127,097	423
Manga	224,293	471
Bosongo	119,531	364
Ogembo	190,919	414
Kisii Municipality	9,364	844
Kisii District	869,512	396

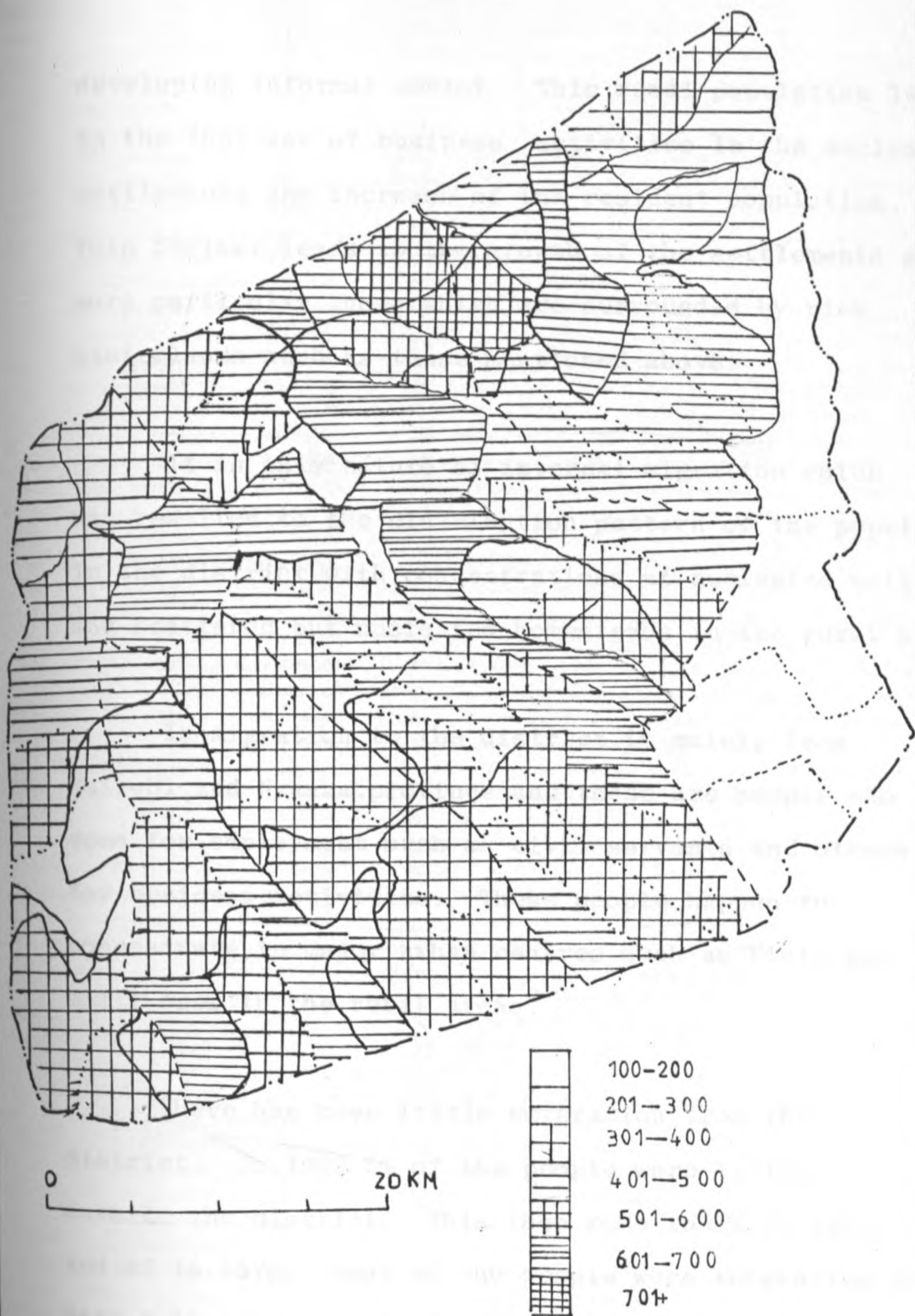
Source : Population Census 1979

This will further cause a threat to the development of the district as the densities will out-number the land carrying capacity and may result to the cultivation of mountain tops and swampy areas. See Map No. 10 showing the population density of the divisions in the district.

2.3.4. Population Migration

Kisii District is the most densely populated districts of Nyanza Province, but there is relatively little emigration from the district. Two types of migration pattern are experienced of late, the internal and external migration.

Internal migration constitute of people moving from one part of the district to the other. These people either move from one rural place to another in search of land such as the new settlement schemes in North Borabu location or in search of employment as farm labourers in the farms. Internal migration is also made to big and small urban centres in the rural areas such as Kisii town and other nucleated settlements such as Keroka, Kebirigo, Nyamira and Manga to mention a few. Due to high population in the rural areas and scarcity of land, surplus labour is forced to migrate from the land to nucleated settlements in search of business and employment opportunities especially in the



KISUMU DISTRICT:
POPULATION DENSITY

MUMBO C.G
DURP
M.A THESIS 1987

MAP NO
10

developing informal sector. This rural population led to the increase of business activities in the nucleated settlements and increase of the resident population. This further leads to the growth of the settlements and more particular those which are surrounded by rich hinterlands such as those mentioned above.

It is this nature of internal migration which has resulted to the distribution pattern of the population in the district with concentrations at nucleated settlements and scattered but nucleated homesteads in the rural areas.

In-migration to the district is mainly from Nairobi and Nyanza province and these are people who come for employment such as civil servants and others for business activities. These people happen to concentrate in major urban centres such as Kiisii and small ones in the rural areas.

There has been little emigration from the district. In 1962 5% of the people were living outside the district. This then rose to 7% in 1969 and 9% in 1979. Most of the people were emigrating to Rift Valley Province especially Kericho district due to the presence of tea plantations which were the source of employment opportunities and Nakuru district where people moved to rural areas in search of land. Others

have moved to major urban centres - Nairobi, Mombasa, Kisumu, Eldoret, Nakuru, etc. for employment purposes.

Despite the high population and scarcity of land in the district, the percentages indicate very low rates of migration. It seems probably that the Kisii people do not like to leave their home district due to factors embedded in their socio-cultural set up. This factor may be used to attribute to the growth of nucleated settlements in the rural areas as the Kisii could like to be closer home, than emigrate outside.

However with increasing pressure on limited land resources and lack of employment opportunities, there is likely to have a change in the rate of emigration from the district to the other parts of the country.

2.3.5 Population Growth

In 1962 the population of the district was 519,418 which had arisen from 225,108 in 1948, thus giving a growth rate of 6% per annum. In 1969 the population had risen to 675,041 people giving a growth rate of 3.4%. This rate of growth was equivalent with that of the national of 3.4%. The factors responsible for this increase were that there was no migration of the Kisiis from their home district and the agricultural

potentials of the district which characterise the district as mainly rural and the high fertility rate resulting from the lowering of mortality rates and partly due to the early marriages. Most men marry at the age of 18 years while girls get married as from the age of 16 years, which creates a long period of reproduction. This is also accompanied by the fact that the Kisii people have not accepted fully the concept of family planning as a remedial to fast growing population.

However in 1979 the population of the district was 869,512, giving a growth rate of 2.6% which is a decline and below the average national growth rate of 4.0%. This decline could be attributed to the decrease in the natural increase resulting from the adaptation of family planning practices and migration of people to outside district especially males looking for employment opportunities.

Within the district, growth rates vary by division and between 1962 - 1969 period Ogembo division had the highest growth rate of 5.3% followed by Kisii town of 4.3%, Manga 4.1% and the least was Nyamira with 2.5%. Between 1969 - 1979 period Bosongo division was the leading with 3.4% while Manga was the least 1.6% (See table below)

Table 6:

KISII DISTRICT POPULATION TOTALS AND
AVERAGE GROWTH RATES BY DIVISION -
1962, 1969 AND 1979

D vision	1962	1969	1979	1962 - 1969	1969 - 1979
N, amira	126,609	150,032	198,308	2.5	2.8
Irianyi	73,332	93,781	127,097	3.6	3.1
Manga	162,245	191,245	224,293	2.4	1.6
Bosongo	64,522	85,660	119,531	4.1	3.4
Ogembo	103,437	148,237	190,919	5.3	2.6
Kisii town	4,530	6,080	9,364	4.3	4.4
Kisii District	519,418	675,041	869,514	3.4	2.6

Source : Population Census Reports 1962, 1969 and 1979.

From the table of densities above, Manga, Irianyi and Ogembo had the highest densities, but the comparative inter-censal growth rates shows that Irianyi has a higher one than both Ogembo and Manga divisions. Irianyi lies in the tea and pyrethrum zone which have had a positive effect on income levels and employment opportunities, hence experiencing less out-migration while Ogembo and Manga which have 2.6% and 1.6% growth rates respectively lie in the coffee growing zone. The crop has been having a downward trend of income levels and output per unit of land leading to limited employment opportunities. This has had a negative effect on the population and has led to out-migration of people from the divisions, hence

giving them a low intercensal growth rates. However with increase of people as land resources diminish the whole district is assumed to experience out-migration due to excess labour over land.

2.3.6 Population Projections

Using the annual growth rates of each division and that of the district as calculated in table 6, the projected population of the district by division is shown below, using 1979 population figures as the base.

Table 7:

PROJECTED POPULATION DISTRIBUTION BY DIVISION KISII DISTRICT

Division	1979	1984	1989	1994	1999
Nyamira	198,308	238,890	287,862	346,874	417,983
Irianyi	127,097	142,494	171,707	206,907	249,323
Manga	224,293	258,797	311,850	375,780	452,815
Bosongo	119,531	143,543	172,970	208,429	251,156
Ogembo	190,919	231,555	279,024	336,224	405,150
Kisii Municipality	9,364	32,482	39,139	47,162	56,831
Kisii District	869,512	1,047,761	1,262,556	1,521,376	1,833,258

Source: Omare, C.N. : Effects of Population Change on Land use, Kisii District, 1981.

The table above shows the projected population distribution in the district upto the year 1999. It is seen that by the year 2000 the district would have reached the population of about two million assuming the present growth rate of 2.6% per annum. Within the district Manga division, although having the lowest intercensal growth rate could have the highest population by the year 2000, followed by Nyamira. This could be attributed to existing income and employment opportunities as these areas have taken to tea growing hence limiting the out-migration discussed earlier. Bosongo division would have the least population and this could be attributed to its closeness to Kisii municipality as many people will migrate to Kisii town for employment opportunities.

The projected population densities for the district also reveal that the average density would rise from 575 in 1979 to over 800 persons per sq.km. in the year 2000. Manga division would have the highest density of 995 persons per square kilometre while Nyamira division would have the least 653 persons per sq. km. In Nyamira, especially Borabu location which is a newly settled area (Settlement schemes) and hence the population has not increased very much, see table 8 - showing the projected population densities by division.

The increase in population and density would create problems in both the rural areas and urban settlements as there could be redundant labour on the farms leading to rural-urban migration. This will put pressure on the available resources in these settlements resulting to inadequacy. Due to high population; shortage of housing units would lead to development of unplanned temporary structures in the name of slums.

Table 8:

KISII DISTRICT, PROJECTED POPULATION DENSITIES
BY DIVISION, 1979, 1989 AND 1999.

Division	1979	1989	1999
Nyamira	309	450	653
Irianyi	423	607	881
Manga	471	685	995
Bosongo	364	534	775
Ogembo	414	605	879
Kisii Municipality	844	1,118	1,623
Kisii District	396	575	835

Source : Omare, C.N. 1981.

2.4.0. Human Settlements

The concept of human settlements relates to how man occupies space and organise his activities according to the physical environment and how it affects his mode of life.

The settlement patterns in Kisii district are grouped into two:

- (a) the rural settlements and
- (b) the urban settlements.

The rural settlements comprise of the scattered or grouped homesteads which are a common characteristic in the district. These settlements are based on family land tenure system where an individual in the family has a right to inherit a piece of land from the head of the household which leads to sub-division.

These rural settlements usually occupy less than one acre and as the population is increasing the plot sizes tend to decrease. It is due to individual or private ownership of land that the spatial distribution of the settlements depict. Due to sub-divisions and construction of houses by sons close to their parents gives rise to grouped settlements. The grouping of families together has created physical, economic and social problems. Due to these groupings the densities have gone high over 500 persons per square kilometre and as sub-division continues the plots become uneconomical to exploit, leading to reduction in agricultural productivity.

Main activities practised are mixed farming (cash crops, food crops and one or two cows).

Due to high population densities and limited land, the possible solutions to these problems include encouragement of out-migration to other parts of the country such as Rift valley, the introduction of rural cottage industries such as carpentry, crafts etc, to absorb the surplus agricultural labour and encouragement of family planning practises. However the means and ways of adapting these solutions is beyond the scope of this study.

Settlement schemes (large scale) is another category of rural settlements pattern in the district. They consist of larger farm plots ranging from 10 - 20 acres and their homesteads are quite scattered and also practise mixed farming. They are mainly found in Borabu Location and used to be European settlements before independence.

Rural centres also are a type of settlements with population clusters which within them include non-farm economic activities such as commercial, retailing, craft trade, agro-based industries such as tea processing and maize milling. In addition they provide public services such as schools, administration, health and extension services. These centres act as the pivot points for industrialization and decentralization of social services.

The government through the growth and service centres policy strategy identified three types of rural centres in Kisii district in mid 1960's.

- (a) Local Centres - These were designated to serve people within walking distances. They are supposed to cater for a catchment population of 5,000 inhabitants. Facilities at these centres comprise of full primary schools, dispensary, postal agency, shops and open air markets. They act as local commodity trade exchange centres specializing in meeting the daily needs of rural households. The best example in Kisii district include Riana, Tombe, Isecha, Nyaramba, Rigoma, Musobeti, Kegati and Itumbe to mention a few.
- (b) Market centres - These are higher settlements with higher level of services than the local ones. They are supposed to serve a catchment population of 15,000 people. Some of them have a cluster of population residing in them such as Tinga, Kenyena, etc. The resident population are composed of those conducting business. Market centres have services such as secondary schools, health centre, administration and they act as service centres to their immediate hinterland.

(c) Rural centres - are bigger in size and offer a wide range of services than the other two. They are important for the development of the rural economy and are supposed to serve a catchment population of 40,000 people. It is the main focus of trade and commerce and has a secondary school, administrative offices, health centre with maternity wing and a social hall. The commercial facilities are of higher standard with market grade 'A', telephone services, banking facilities, water supply, electricity etc. They are expected to have a resident population of 1,000 to 2,000 people. Examples of these centres include Kebirigo, Kenyena, Nyambunwa and Nyamarambe. However some of these centres such as Nyambunwa and Nyamarambe have almost stagnated because designation alone does not mean that the centre should have functions, services and growth accordingly. The assumptions and weaknesses of this designation will be discussed in another section below.

Urban Centres - also form another pattern of human settlements in the district. These are settlements of a higher level than rural ones and are important for providing services to the rural areas. These settlements have a resident

population of 2,000 and above and the main ones in Kisii district are Kisii, Ogembo, Manga and Keroka. They provide a full range of services usually associated with a town including street lighting, municipal transport, piped water supply and sewerage to mention a few. They are meant to serve a catchment population of 120,000 people and should have administration offices, hospital, secondary school, main post office, banks, hotels and residential houses. However in the Kisii situation, it is only Kisii and Keroka which have street lighting in some sections, sewerage, banking and hospital while the other ones that is Manga, and Ogembo although designated as urban are still rural in character and do not possess the above functions and services.

All these types of settlements affect the pattern in that they are scattered all over the district with clustering of people in them. However the homesteads both grouped and sparsed are found everywhere in the district and give a clear picture of human settlements than the rural and urban nucleated settlements.

The process of urbanization in the district is very low as the district is dominantly a rural economy. It has one main principal town, Kisii with a population

of over 20,000 people. Other centres below it are small and rural in character. Some of the centres which were designated as urban such as Keroka Manga and Ogembo have stagnated in their growth due to lack of effective demand and hence have low levels of growth. Due to their low levels of growth and development, the government adopted the industrial decentralization policy and growth and service centre policy as a way of promoting urbanization and rural development. With these policies the government hoped that urban development will be decentralised to designated growth and service centres in the rural areas, identified to promote growth and provide services to their hinterlands. The government took this approach because of the following reasons:

- (i) It was easy to provide government services in rural areas by putting certain facilities such as shops, health, administrative, etc. together in one place.
- (ii) Roads could be built using those points or centres to provide maximum accessibility to people over a wider area.
- (iii) Grouping together of facilities will enable commercial growth of activities and the centres which will induce further growth of the centres and towns in rural areas.

- (v) With the provision of public facilities the centre will attract investments from major centres and the policy was based on the assumption that "once a centre has its basic infrastructural facilities it will attract commercial and industrial development and attract more people and provide improved employment opportunities."

In designating the centres, the policy considered the following factors:

- (a) Needs of the area
- (b) existing infrastructural and transportation network
- (c) Examination of population distribution in the area.

Despite the work done, by coming out with certain designated centres, the policy had the weaknesses of not assessing the resource hinterland of the centres and designating too many centres of which the limited resources of the government would not be distributed to all of them and hence failure of the policy. Due to these weaknesses of the policy, various problems have emerged in the development of the district such as inadequate provision of the basic infrastructural facilities has led to stagnation of some centres mentioned above and hence leading to rural migration

to already established centres such as Nairobi and Mombasa. Stimulation of the hinterlands to high levels of growth and development as anticipated by the policies has failed hence retarding the economic development of the district.

Summary

The chapter has examined the physical characteristics of the district and how they affect agricultural production. The main industrial crops - tea, pyrethrum and coffee have been identified as the main ones which provide incomes; generate employment and other related business activities in the district, hence contributing to the economic development of the district. However, population was found as the main constraint as the district has high densities concentrated in the rural areas which has caused pressure on the limited land resources and in future will force people to migrate to the urban settlements and affect their pattern. Two patterns of settlements were identified in the district that is rural and urban but the urbanization process was very low. To increase the urbanization level; government policies of growth and service centre have been used as instruments of stimulating development and channelling resources to growth centres to provide urbanization. However these policies have failed due to inadequate assessment of the centres' potentials and too many of them were designated which the government was not able to provide with the basic infrastructural facilities.

CHAPTER THREE

FACTORS INFLUENCING THE GROWTH OF DESIGNATED GROWTH CENTRES

3.0 INTRODUCTION

The chapter examines the general factors which influence the growth and development of nucleated settlements and the changes that have taken place thereafter. It attempts to make an understanding of the varied factors responsible for the emergence of nucleated settlements and the main focus will be on tea factories and how they influence the growth and development of Keroka and Kebirigo as case studies. The two happen to have tea factories within or near their vicinity.

3.1.0 General Factors

The emergence of nucleated settlements has been attributed to many factors such as political, economic and cultural. These factors might have worked jointly or independently. However in some cases; the factors responsible for emergence are not necessarily the same for growth and development of such nucleated settlements. Kenya is not an exception in this respect as her nucleated settlements are influenced by both external and internal forces.

In the early days, the evolution of nucleated settlements was a product of agricultural development (Morris A.E.J. 1974). Morris supports this statement by illustrating the development of early settlements in Egypt, Mesopotamia and Iran (Middle East) which depended on agricultural activity.¹ Most of these settlements formed the earlier centres of civilization. Morris went further and used another concept of "planted towns" which according to him were founded on commercial purposes following the development of trade and commerce. The ideal locations for such planted towns are the roadside junctions and river sides.

Sjoberg (1965) in his article the "origin and evolution of cities" categorized human settlements into three levels, pre-industrial, industrial and post industrial. According to him nucleated settlements started to develop during the pre-industrial level.² This level was characterised by surplus food and selection of grains for cultivation, specialization and long term storage. He summed up that nucleated settlements emerged as a result of social organization.

1. Morris A.E.J.: History of Urban Form, John Wiley and Sons Inc. New York 1974.

2. Sjoberg G. The origin and evolution of cities 1965.

As mentioned in the introduction chapter, internal influences occur when primary activity, industry, agriculture or mining is exploited locally by the local people. In the process of trade and exchange small markets in the rural areas emerge. These centres, due to their ability and the potential of the resources within their immediate hinterland attract transportation routes, labour and investments to the area. Due to the attractiveness of investments to this centre, more are further attracted than could be ploughed back to the rural hinterland and if the centre is surrounded by a rich hinterland, then the centre is bound to grow more rapidly and attain a position of attracting increased investments and hence can out grow the nearby centres and become dominant.

Transportation can also lead to the opening up of a rich hinterland with say a gricultural or mineral resources. When these resources are exploited, they need outlets from the source areas and this calls for the construction of transportation routes which are used to facilitate the movement of exploited resources and other inputs required for their exploitation both from the area and to the area respectively. In the process of exploitation, those settlements which initially

were acting as stopping or resting places for say administration or construction personnel are transformed into nucleated settlements which provide services. The best example in the Kenyan context is Nairobi which developed due to the construction of the Kenya - Uganda railway. It was used as a depot for keeping equipments.

Such a settlement acquires later the forces of attraction imminent for its growth. It attracts, labour, capital and technology to some extent which are essential for industrial development. According to Mac Wuytts (1974), industrial development requires large resource allocation of investments than consumption for the betterment and benefit of future generations.³ However one should note that most of the settlements of this category have got slow growth rates because they lack economic base to sustain their growth continuously. Most of them end up attracting a few shops and other services to cater for the population in the surrounding areas. In the long run, some of these settlements end up stagnating unless a deliberate action is taken by the government to stimulate their growth. The Macalder centre in south Nyanza is an example of the centre which was developing because of the exploitation of Gold, but when the deposits ran out, the centre almost stagnated. With respect to Kisii district, Manga, which is an urban centre

3. Mac Wuytts: Technological Development in Under-developed Counties EAPH, Nairobi 1974.

used to be considered as a fast growing centre when the main road from Kisii to Kebirigo was passing through it, but when a shorter route, was constructed passing about four kilometres away, Manga started to decline in business activities and almost stagnated; but was revived by the establishment of more government offices. This clearly illustrates how a centre might rise due to the transportation factor but then decline due to diversion of the transportation route to a different place.. Mombasa, because of its transportation function, being the port and gateway from the interior of Kenya through the Indian Ocean, developed and became a big settlement.

Another factor for the emergence of nucleated settlements is the historical function or role. This is attributed to the cultural and historical factors of importance for example Chief's Camp or traditional central places where ceremonies such as wrestling and dancing took place. Later, due to the gathering of many people watching and participating these activities, exchange of goods started and hence development of central places or markets. Mumias is the best example which started as the headquarters of Chief Nabongo Mumia of Wanga. {

In Kisii district settlements such as Marani, Nyamaiya and Kebirigo are some of those which initially started as Chief's Camps. These settlements later attracted people and functions and this necessitated the construction of permanent structures to facilitate the provision of higher order of goods and services. Doxiadis (1968) in discussing about human settlements categorized their evolution into four phases, the primitive, organised settlements, static urban settlements and dynamic urban settlements. According to him the third phase was the evolution of nucleated settlements in which villages started in key locations where men met during war periods and provided protection to women children and the aged. This kind of settlements developed, he argues due to security reasons.⁴

The first of these settlements appeared on plains or hills. However those on the plains assumed rapid expansion due to the nature of the landscape being flat and later became the seats of the feudal Lords.⁵ It attracted more people and services and eventually the village took a nucleated form of settlement which saw man becoming a trader, manufacturer and developed

4. Doxiadis C.A.: *Ekistics: An Introduction to the Science of Human Settlements*. Hutchinson and Co. Ltd. 1968.

5. Ibid.

abilities of being an administrator and organizer. With the achievement of these characteristics man promoted his culture and civilization and expanded further the nucleated settlement in rectilinear form with three dimensions.⁶

Doxiadis went further to illustrate that with the increase of population size, expansion occurred in two ways. First, the linear form which took place along the main road or street with shops and a central place at the midst like the ancient "Agora" of the Greeks, and secondly the nucleated settlement could expand through the decentralization of some functions from the main centre. These functions could include industrial, temples and residential to satellite areas. This kind of pattern resulted to star-like growth of the settlement. The two cases in question follow the two patterns above. Keroka has grown in a linear form along the Kisii - Kericho road while Kebirigo has grown in a star-like pattern.

The deliberate action of the government is another factor responsible for the emergence of nucleated settlements. This is a situation where the government deliberately makes a certain centre

6. Ibid.

an administrative headquarters, or an industrial centre. This will lead to the construction of administrative offices or processing plants and attraction of investments in the form of goods and services and eventually the resident population. This is accompanied later by social activities and commercial functions. Examples of these kind of settlements are Webuye, Mumias and Nyamira in Kisii. The first two have processing industries while the last has been selected as an administrative headquarter.

Despite the fact that there are many factors responsible for the emergence of nucleated settlements, most of them in East Africa, Australia and Europe have their origins in the colonial administration (Governments). The colonial administrators established colonial centres at strategic locations due to two main reasons:

- a) economic importance of the location and its hinterland
- b) strategic location where they can offer resistance to the natives.

Kisii town offers the best explanation for these two reasons in that, the location was surrounded by a rich agricultural land and secondly was strategic

for defense purposes for both Kisii and South Nyanza Districts.

Most of these colonial centres were located away from the former traditional centres. This had a negative impact on the traditional centres as most of them stagnated especially those close to the colonial centres. This was because of the higher order and range of goods and services they offered. Hence they were more attractive than the traditional ones. This argument is supported by the studies carried out by Jeans (1965) and Williams (1968) on the history of settlements in New South Wales and South Australia which showed that the colonial authorities established an abundance of nucleated villages and towns which presently are the major urban centres of the area.

From the above discussion of factors influencing the growth of nucleated settlements in general, it is observed that even in Kisii district when these factors are narrowed to a smaller area they play a vital role. The most prominent factors responsible for the growth of nucleated settlements in the district are historical, cultural, agricultural potential, transportation and deliberate action of the government.

3.2.0 EXISTING PATTERN OF DEVELOPMENT CASE-1 - KEROKA

3.2.1 Historical development

Keroka started a few kilometres from the present position. Originally Keroka was known as "Nyabiemba", a name derived from "ekeemba" which in singular means that part of the maize cob left after removing off the grains. This settlement was given that name because it was surrounded by maize cultivation activities.

It was established between 1927 and 1928 as a traditional central place for exchanging goods where maize was dominant. Later the market incorporated the selling and buying of livestock. In 1936 the first structures were put up by an Asian.⁷ By 1938 there were five structures made of simple materials, grass and mud.⁸ Most of these Asians were selling the basic household items such as soap, paraffin and clothing.

During this period, Keroka had a few setbacks which tended to reduce business activity:

- a) there were many wild animals as there were forests around.
- b) transportation means were poor due to thick forest.

7. Field Survey

8. Ibid

Later the colonial government after realizing the potential of Keroka, constructed a road linking Kisii and Keroka. By then Kisii town was the administrative headquarters of Kisii and South Nyanza districts. The road was named Northcorts after the then Kisii District Commissioner. The road was later linked with Kericho Town.

With construction of this road, more people and goods were attracted to Keroka due to easy movement and led to the generation of more business activities. Because of its potentials and centrality where many people were attracted to; the colonial government established a dispensary in 1951. In 1963 the First Africans erected their own structures away from the Asians due to fear of stiff competition and the site where they erected their structures forms the present position of Keroka. However with the expansion of the settlement the two sites have been developed into one settlement. With the coming up of more structures, maize selling tended to decline and the market Nyabiemba changed its name to the present one Keroka which was also derived from "Omoroka" a type of shrubs which were common in the area.

Initially the growth of Keroka was influenced by three main factors. With the completion of the road

from Kisii Via Keroka to Kericho offered Keroka a wider opportunity of being a communication centre. As the settlement became easily accessible both from Kericho and Kisii, business activity increased as vehicles along this road brought many commuters from various parts of the district and outside especially businessmen. Locally it attracted more people from its rural hinterland especially from Nyaribari and Kitutu Locations.

To the eastern part of Kisii district bordering Kericho are the Former European Settlement Schemes which were given to individuals or cooperatives after independence. These settlement schemes especially those near Kijauri and Manga influenced the growth of Keroka in that the centre was the main one within their reach and supplied almost all the farm implements such as fertilizers seeds, jembes and animal feeds to mention a few. It became the main service centre for the people from these schemes. This was the main factor which led to the establishment of the earlier petrol station, animal feed stores and a hardware.

The hinterland of Keroka is very rich potentially in terms of producing products such as pyrethrum, tea, maize, beans and livestock. Pyrethrum and tea farmers

used to come to Keroka for their payments at Masaba Farmers Union and Nyankoba Tea Factory respectively. As farmers came for their earnings, most of them did their shopping at Keroka and this increased the demand of goods and services and hence attraction of more business activities. As business activities boomed, more plots were acquired from the County Council and individuals and structures were erected operating as retail shops, bars, hotels restaurants and many others.

Another important factor and which is the focus of this study is establishment of the tea factory at Nyankoba in 1965. It is about two kilometres from Keroka but its influence was important. Before the establishment of the factory and even today Keroka is the main nucleated settlement in Irianyi Division. The nearby centres are small and far away from the tea factory and they only offer a small range of goods and services. With the establishment of the factory and Keroka already existing, tea farmers had to spend their earnings at Keroka in terms of shopping and buying of agricultural inputs and household items hence increasing commercial functions. Earnings from tea at the end of the year led to many farmers to own plots

at Keroka, as more will be revealed later. Before the establishment of the factory Keroka had fifteen plots without any of the isolated plots such as those outside the council's jurisdiction.⁹

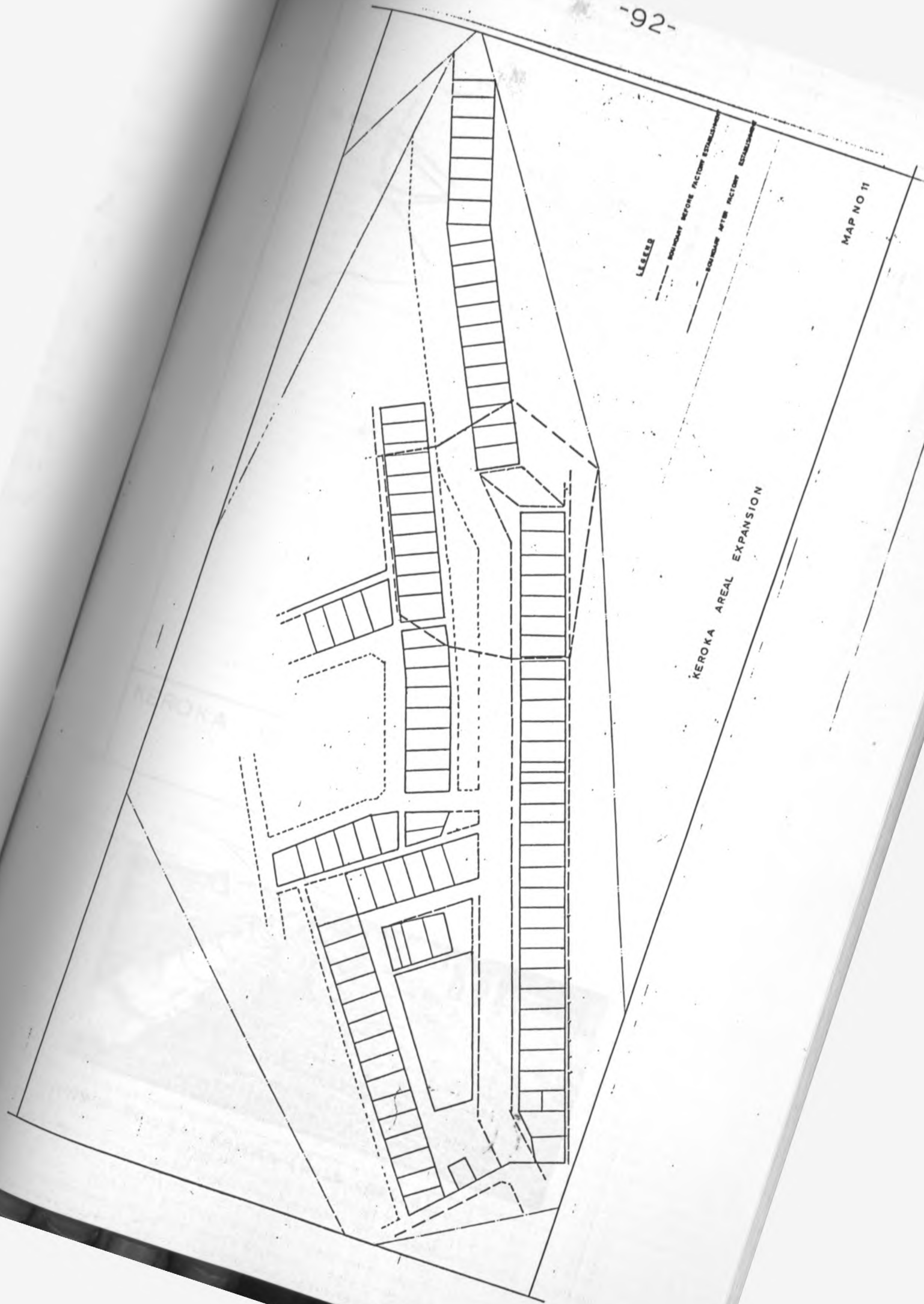
3.2.2 Land Ownership

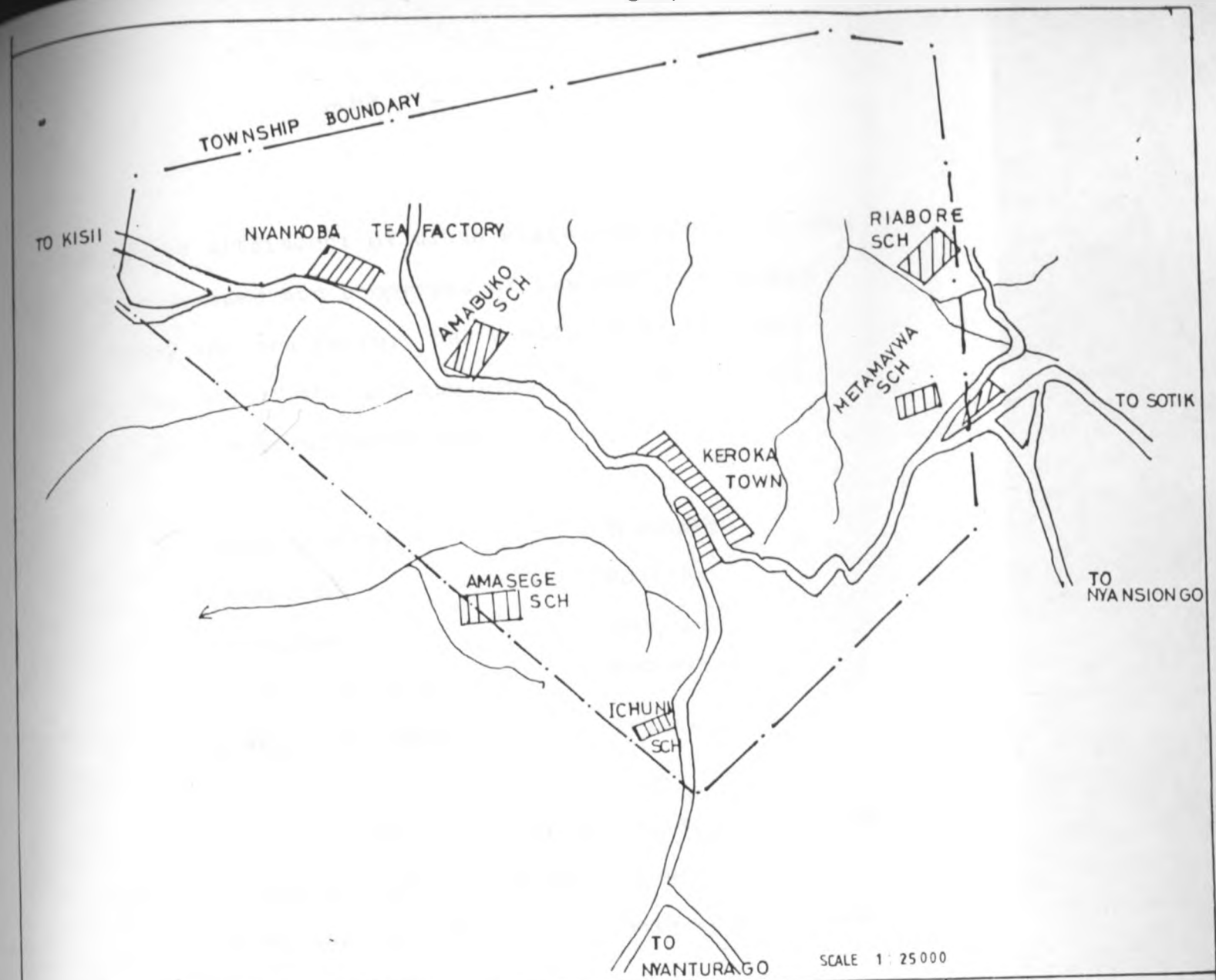
Before the establishment of the tea factory Keroka was a small trading centre with 15 plots developed. Structures on these plots had simple materials such as grass and mud with a few corrugated iron sheets. With the establishment of the factory the area of Keroka expanded in a linear form along the Kisii - Kericho road. See Map No. 11

showing the area before establishment of the factory and after. By 1978, Gusii County Council which was administering the centre had approved a total of 129 plots with a market place and a bus park.

Most of the land surrounding the centre is privately owned especially the one between the factory and the centre; a part from the industrial area which has been set aside by the council. As the demand for development plots increased the council has been acquiring more land from the private owners slowly.

9. County Council Records.





KEROKA URBAN COUNCIL

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MAP NO 12



Keroka (Main centre)

With the attainment of urban status in 1979, its area has increased and comprises of six electoral areas whereby the tea factory has wholly been included. See Map No. 12 showing the urban council boundary. The six electoral wards are:

- | | | | |
|----|-------------------|---|----------|
| 1. | Keroka Central | - | Township |
| 2. | Keroka East | - | Montine |
| 3. | Keroka West | - | Amabuko |
| 4. | Keroka South/West | - | Bocharia |
| 5. | Keroka South/East | - | Ichuni |

Prior to this, Keroka was a market centre only. Since the centre was upgraded to an urban council, it remains under the jurisdiction of Gusii County Council but as an urban centre.



Plate No. 1: Keroka (Main centre)



Plate No. 2: Nyankoba Tea Factory.

3.2.3 Industrial Activities

Nyankoba tea factory is the main component of industrial activities in the area. The factory employs over 200 workers and serves over 3,000 tea farmers. Within the factory compound are two workshops which repair and maintain vehicles and making of chests i.e those boxes where made tea is packed into.

Some land between the factory and the centre has been allocated for industrial activities and already the Kenya Industrial Estates has put up six shades. The KIE acquired the land from the council and their industrialization programme is aimed at offering facilities for the following industries:

- (a) Passion fruit processing
- (b) Printing and binding of exercise books
- (c) Furniture workshops
- (d) Metal fabrication
- (e) Tailoring
- (f) Laundry.

These shades are managed by the KIE and were constructed by the Ministry of Commerce and Industry at the cost of 2.5 million shillings. It is hoped that with the completion of these projects employment opportunities will be created to benefit the local people.

Other industrial activities within the settlement include temporary garages which repair vehicles. Most of them are operating on temporary sites within the centre of the settlement but are awaiting to be moved to the land already zoned as

industrial area. There are shoe repairs, watch repairs and bicycle repairs . There are 4 posho mills which process maize, Timber and Furniture workshops which are 8 and they are attributed to the high demand of furniture products by the factory workers and the resident population. These furniture workshops are scattered in Keroka.

From the above discussion it can be seen that there are no heavy industrial activities taking place. The main one is tea processing and the other ones are of informal nature and provide limited employment opportunities.

3.2.4 Commercial Activities

Keroka is an old commercial centre and most of the commercial activities are concentrated at the central part along the Kisii - Kericho road. The commercial activities are dominated by open air markets, covered market, retail and wholesale.

3.2.5 Open air markets

There are two open air markets in Keroka, for agricultural products and for livestock. The livestock open air market is located behind the shops and covered market. The common livestock sold are cattle, sheep, goats and poultry. See Plate No. 3.



Plate No. 3: Open Air Market for livestock.

The open market for agricultural products is periodic and operates twice a week. The site is next to the modern covered market with stalls. see plate no. 4. The market is fenced with wires and this enables the council to collect revenue from traders in an orderly manner. The market serves both the resident population and those from the hinterland areas.



Plate No. 4: Open Air market for agricultural products and covered market.

The important commodities sold in the open air market include bananas, maize beans, sugar cane and cabbages. Other items include second hand and new clothes. During the market days these commodities are displayed on the ground. Most of the sellers in the open air market are those unable to afford rent for the stalls in the covered market and sometimes are irregular traders disposing off their surplus

inorder to get income. There is only one gate serving both the open air market and the covered one and the major problem experienced is that of competition of goods sold in the stalls and those on the open ground especially during market days. Also there is lack of parking space for vehicles delivering the goods to the market.

3.2.6 Covered market

This is one of the major projects of the council. It is built next to the open air market as shown above near the main road. The market consists of nine blocks of which eight of them have compartments of six shops and eight stalls each. The ninth block has a hotel; butchery, fish shop plus six shops and eight stalls. In addition there is an office block cum washing stand for the produce.

Other amenities of the market include female and male toilets. The rent charged depends on whether it is a shop or stall. For shops Ksh. 125 is charged per month while for stalls Ksh. 75 is charged per month. The hotel butchery and fish shop are awarded on tender basis on yearly terms. The total cost for the construction of the market was Ksh. 1.5 million shillings which was a grant from local government.

3.2.7 Shops

With the establishment of the factory, more shops came up and most of them are specializing in retail and wholesale functions. There are more than 100 retail shops, 6 hardwares and 10 wholesales. More shops are coming up in isolated plots towards the factory direction. Bookshops, hotels, bars, butcheries etc. have increased and the owners revealed during the interview that they opened in order to tap the existing market opportunities especially from tea farmers who come to get their earnings at the tea factory on monthly basis. A list of a few selected establishments is shown in appendix III.

3.2.8. Banking Facilities

Before factory establishment there were no banking facilities in Keroka. People used to travel to Kisii town. With the coming of the factory; banking facilities have been established. There are three banks, the Kenya Commercial Bank, Cooperative Bank and Barclays Bank. The last one operates on a mobile basis. These facilities were established to facilitate payment to farmers especially tea farmers and businessmen. During bonus payment at the end of the year; cases of theft were rampant and banks were seen as an easier way of reducing theft as farmers can

take small amounts of money rather than whole amount. At present farmers earning more than Kshs. 200 per month are paid through these banks which is a positive impact of the factory.

3.2.9 Hawkers

Hawkers are mainly found at the centre of the settlement where two bus parks are located. The bigger bus park accommodates vehicles from Kisii to Kericho and the smaller one those from Kericho to Kisii. Majority of these hawkers sell items such as packed groundnuts, sweets, samosas, utensils and newspapers. These hawkers are located here because of the commuters who alight and board vehicles from and to various destinations.

3.3.0 Infrastructural Facilities

3.3.1 Roads and Transportation:

The roads which form the internal circulation of Keroka were built after the establishment of the factory. The main road passes through the centre from Kisii to Kericho and is a national trunk road (B 3). The other tarmac road is from Keroka to Kiamokama and only a small section is tarmaced especially the steep slopes. This was done by KTDa, after the establishment

of the factory to facilitate the collection of greenleaf. The road to masimba has been improved and is passable during the rainy season.

However one should note that the internal roads especially to the eastern side of the settlement where expansion is taking place have not been improved as the plan which was prepared has not been implemented. A by-pass road was proposed on the western side but has not been constructed see Map No. 11 most of the housing units coming up have small paths leading to them as they are scattered. Industrial area site is poorly served by a small narrow murram road impassable during the rainy season.

From the historical traffic data (see Appendix I), it is indicated that there is heavy traffic on the Kisii-Kericho road as compared to other roads such as Keroka - Masimba and Keroka Kiamokama. In particular Kisii - Keroka - Kericho had many vehicles due to KTDA vehicles collecting green leaves and trailers transporting already made tea. Other vehicles include buses, matatus and private cars.



Plate No. 5: KTDA vehicles for collecting tea leaves.



Plate No. 6: Lorry loading ready tea at Nyankoba tea factory.

A survey of households from the field revealed the following:

Table No. 9: Means of Transport at Keroka

Mode	% of people
Matatus	56
Buses	34
Foot	10
Total	100/%

From the table the majority of the people use matatus (56%) because they are quicker and 34% use buses while 10% use foot. These were found to be those people who go for short distances such as shopping or visiting a nearby relative.

The two bus stops are not well developed and located hence resulting to congestion. The park catering for vehicles from Kisii direction is small and is supposed to accommodate all categories of vehicles and is always congested. However it is enclosed and generates revenue to the urban council. The one catering for vehicles from Kericho direction is a narrow street which has been converted into a bus park. It

is narrow and cannot accommodate four vehicles at ago. It is hoped that in future when the council is financially able it could build better parks at appropriate sites.

3.3.2 Water Supply

Prior to the establishment of the tea factory, Keroka had no piped water. The use of water in tea processing necessitated the installation of Keroka water supply. Due to the increase in population, the government also came in and supplemented water supply in the settlement. Near the present health centre are two large storage water tanks managed by the Ministry of Water Development, which supply water to the settlement.

However; due to the increase in population and scattered nature of settlements the supply is not enough. This is supported by the fact that those settlements towards the factory direction have got no water connections. Also the water pressure from the current source is low and difficult to reach the first and second floors of the storey buildings in the centre.

The problem of low pressure is aggravated further by the irregular supply of diesel and constant

breakdown of the pumping machine. The areas affected by water shortage include Ichuni girls secondary school, Keroka health centre, storey buildings and uncontrolled settlements. This is so because they happen to be on a raised ground. Keroka water supply was initially designed to serve less than ten thousand people including those of Nyanturago areas, but the population has increased as the centre has been upgraded to an urban council status covering catchment area of over twenty thousand people. From this one sees that since the scheme has not been expanded there is pressure on water supply.

3.3.3 Electricity

Electricity supply in Keroka came after the establishment of the factory. It was the responsibility of KTDA for the costs of connecting the lines to the factory compound. It happened that the main lines were passing through Keroka and individuals had the opportunity of connecting electricity lines to their homes and buildings. Out of the 27 households interviewed only 11% of them had electricity connections, indicating that very few people have connected the lines.

However most of the electricity supply was concentrated at the central part of the settlement

as street lights and security light in some buildings. Other enterprises which use electricity include the petrol station. The power available is capable of serving more than 20000 people currently as according to urban council clerk, many of the people have not connected and have never experienced any shortage. Much of it is used by the factory and central parts of the settlement.

3.3.4 Health Facilities

Before the establishment of the factory, there was only one dispensary established long time during the colonial period in 1951. With the establishment of the factory the dispensary was upgraded to a health centre and according to the planning standards was supposed to serve a population of 20,000. It has a maternity wing but complicated cases are referred to Kisii district hospital or Nyamira.hospital.

At present the health centre has a staff of 27 and the patient attendance is as shown below.

Table 10: Patient Attendance Per Year

Males	19,885
Females	26,344
Children	11,976
Total	58,205

Source: Field Survey 1986.

From the table, calculations shows that 58,205 patients are treated at the health centre which when converted into monthly basis gives an average of 4,850 patients per month. This is a high number given the fact that the existing facilities have not expanded any more.

With the establishment of the factory, there is pressure on the health centre facilities and long queues of people is seen every day. To ease congestion, a nursing home has been established at the centre of the settlement and caters for the resident population of the centre and around of over 20000 people. Others come from other areas such as Kebirigo, Mochenwa and Metamaywa, which shows that its catchment area is not definite. It has forty beds in total. Beside the private nursing home there are five other private clinics each manned by one clinical officer and a nurse. All these health facilities were established due to the high demand of health services from the resident population of the centre; factory workers and others from the surrounding area. However despite the presence of these clinics, still long queues are experienced at the health centre possibly because it is free. This implies that the health centre needs expansion in order to cope with the demand.

These health facilities contribute to the growth of the settlement in that they attract people to the centre and has created a demand for residential houses for the workers both working in the private clinics and government health centre.

3.3.5 Posts and Communication

For easy communication of people and official matters of both KTDA and government, telephones have been installed and they came after the establishment of the factory. After installation at the factory it became easier to extend to the settlement. There are over ten lines passing through the settlement but individual connections are few. This implies that the demand of telephones is not high. This is supported by the fact that in the whole area there are five telephone booths all concentrated at the post office.

A modern post office has been opened at Keroka which handles postal matters such as mails, Postal orders, money orders and saving bank. It is working as a sub post office and supposed to serve ten thousand people, but the council area serves 20,000 people which implies that in future the post office might not cope with the demand. In addition the post office has private rental boxes numbering, 600.

3.3.6 Educational Facilities:

Due to the increase in population and areal expansion of Keroka, more educational facilities have been established especially after the factory establishment. Ichuni girls secondary school is among the oldest schools within Keroka. It has two streams from Form One to Form Four and has a total number of 320 students that is 40 per stream. Another private school has been established right at the centre of the settlement by name Masaba high school; which has 360 students including those in Advanced level classes. Ichuni has got twenty five teachers while Masaba at the time of the research had 20 teachers. It was found out that some of the teachers had resigned and joined other better paying opportunities as most of them were form six leavers.

Other educational institutions include nursery school ; secretarial and accountancy college with 100 students, technical college offering courses such as masonry, carpentry and tailoring and had a total enrolment of 150 students. The catchment areas for these institution is supposed to be from the settlement and surrounding area of about 20,000 people, but most of them draw their students from all parts of the district and beyond especially Masaba high school

which has some Kalenjins and Luos. These institutions have contributed to the growth of the centre by increasing the population and creation of employment opportunities. Some of these institutions such as Masaba and the secretarial and accountancy college charge high fees and this has forced many students to be day scholars which has aggravated the shortage of housing units. Most of them rent small rooms and cook for themselves as it is cheaper because they get food from their homes. Also the location is a problem in that, some are located between bars such as Masaba high school, hence too much noise at the heart of the settlement from students. Some of these institutions lack facilities such as playing grounds and areas for further expansion.

3.4.0 Population:

Before 1979, there was no records for the population of Keroka. This could be due to the fact that Keroka was considered as a rural settlement and hence enumerated together with the sublocation within which it is found.

The 1979 population census revealed that Keroka had a resident population of 958 people. However, Keroka has expanded its urban boundary and according to the Kisii District Development Plan 1984-88, has a population of 20,000 people.

Using an average growth rate of 7.1% of national urban population, the following projections were calculated to the year 2000.

Table 11: Population Projections for Urban Council

Year	Growth rate	Population
1979	7.1%	20,000
1985		30,183
1990		42,532
1995		59,932
2000		84,452

Source: Own Projections 1986,

The assumption made here is that of constant growth rate of 7.1% up to the Year 2000, which is the national growth rate for urban centres in Kenya. By the Year 2000 Keroka Urban Council would have a population of over 80,000. The average household size was found to be 6.1 persons. From the population structure of the whole district, the proportion of children is 58% of the total district population. Using this assumption then there will be more children in the council in the year 2000 and this would have planning implications as regards the provision of infrastructural facilities such as

health ; education and housing. Also the population would need other facilities such as playing grounds, social hall etc.

3.4.1 Housing

Although Kercka urban council is rural in character, at present has over 20,000 people. Due to the increasing population, there is likely need for more housing units. There are no housing estates and most of the present housing units are built by private developers on their own lands. These houses are uncontrolled and scattered in nature. Houses are build of simple materials ranging from grass, blocks and bricks and do not follow any set standards and planning regulations.

Those houses found on council plots serve two purposes of commercial - cum . residential. The only government houses within the settlement are those which are occupied by the police and health officials which number less than twenty. However most of the health officials and other civil servants rent private houses. The rents range from Ksh. 300 to Kshs. 1,500 depending on the number of rooms and type of house, whether mud or blocks.

Because all the council plots are fully allocated, private developers have got a chance to enhance the construction of unplanned buildings which has led to erection of sub-standard houses. The household sizes were found to be 6.1 persons for those near the centre and 2-3 for those within the centre. These were found to be single people without families, or those whose families were not there. Table belows shows that the majority of households had walls made of mud (52%), roofs made of iron sheets (78%) and cemented floor (56%).

Table No. 12: Types of Building Material

Building Material	Walls	Roof	floor
Blocks	37%	-	-
Grass	-	22%	-
Mud	52%	--	44%
Cement	-	-	56%
Iron sheets	11%	78%	-

Source: Field Survey 1986.

Due to increasing number of informal sector activities discussed earlier (in industrial activities section, the majority of the people engaged in this sector and commercial sector are the ones who demand more housing units as they are the main sectors offering employment opportunities.

Most of the housing facilities are poor. A part from a few which have electricity and water connections inside the house; the majority have them outside. Some of the pit latrines are old and in bad condition.

To improve the condition of housing, there is need for the establishment of housing estates by government and the council to build, its own houses which will also be generating revenue. Also there is need to encourage private developers by encouraging them to use the prescribed standards; but build low cost houses which can be affordable.

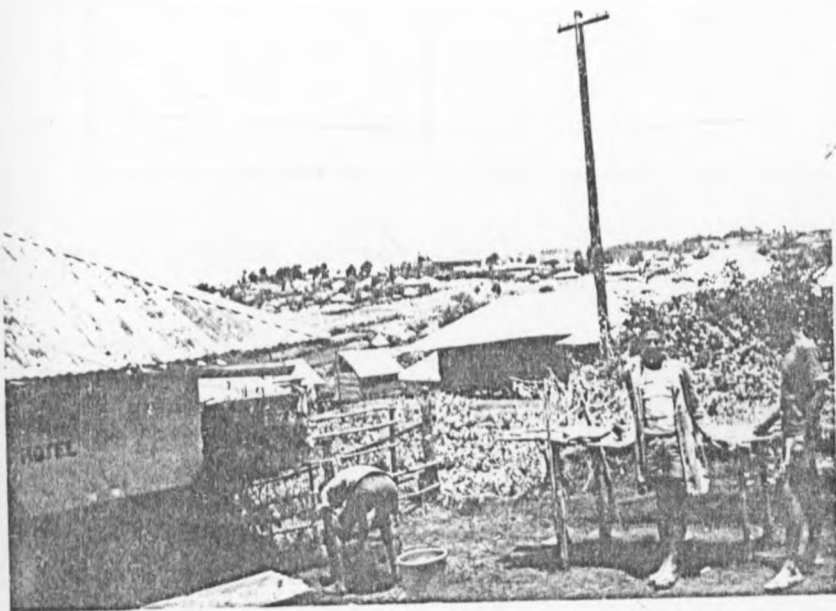


Plate No. 7: Sub-standard houses at Keroka.

3.4.2 Employment and Income:

With the establishment of the tea factory, employment opportunities were found in commerce, government offices, health services, schools; factory etc. Using the business sector analysis, the following information was revealed.

Table No. 13(a):

No. of employees before factory establishment

No. of employees	% of businessmen
0	77
1	3
2	13
3	-
4	7

Source: Field Survey 1986

Table 13 (b):

No. of employees after factory establishment

No. of employees	% of business
1	27
2	33
3	20
4	14
5	3
6	3
21	100

Source: Field Survey 1986.

Comparing the employment situation in the commercial sector one sees a tremendous change. Before the establishment of the factory 77% of the businessmen had no employee while 7% had only 4 employees. After the establishment of the factory 27% had one employee, 20% had 4 employees and in general 73% of the businessmen had 2 - 6 employees. This clearly shows that the establishment of the factory not only created jobs at the factory but also in the commercial sector.

Other sectors which provide employment opportunities are urban council with 20 employees, health institutions with 50, factory with 200, and schools with 70. This shows that the level of employment will increase although no proper records of employment in all the enterprises was available.

3.4.3 Income levels

The breakdown of income levels both for the households and businessmen interviewed showed the following responses:

Table 14(a): Businessmen's level of income

Level of income per month (Kshs)	% of businessmen
0 - 1999	13
2000 - 3999	24
4000 - 5999	10
6000+	53

Source: Field Survey 1986.

From the table 53% of the businessmen were getting an income of over 6,000 (Ksh) per month while 13% were getting less than Ksh. 2,000 per month.

This shows that business activity increased with the establishment of the factory. In overall 93% of the businessmen confirmed that they experienced increase of sales with the coming of the factory while 7% stated they got less sales due to the competition.

The households level of income also revealed that 48% of them were getting Ksh. 2,000 per month while 26% were getting less than Kshs 500 per month. However the majority of those getting more than Ksh. 2,000 were found to be tea farmers. See table below.

Table 14(b): Household's level of income

Level of income per month (Kshs)	% of Household
0 - 499	26
500 - 999	10
1,000 - 1,499	11
1,500 - 1,999	5
2,000+	48

Source: Field Survey 1986.

Combining the results of employment and income from the analysis above, one concludes that the generation of more employment opportunities and increase of income levels is an impact brought by the establishment of the factory.

3.5.0 Prospects and Constraints for Future Growth:

Keroka already is designated as an urban council. Its present boundary includes the tea factory as discussed above. This provides potential for the expansion of the settlement towards the factory direction. The existence of the factory within its proximity has had an influence on the physical expansion of the settlement. The establishment of the factory has attracted commercial activities and creation of employment opportunities. This has further attracted more people from the surrounding rural areas. The employment opportunities are more pronounced in the informal sector such as furniture making, car repair shoe repair and the business functions in terms of retail and wholesale.

Keroka is the main urban centre in Irianyi division providing higher order of goods and services such as chemicals, animal feeds, farm equipments,

banking and postal services to the population residing in the new settlement schemes in Borabu location, and its hinterland. Products from these schemes and the higherland are exchanged and sold at Keroka and hence increase the scope of business activity.

The surrounding hinterland is very rich in agricultural potentials. Cash crops such as tea and pyrethrum are grown. Other crops grown include maize, beans, bananas and cabbage. This together with the high population concentration form the growth potentials of Keroka.

In terms of transport and communication, the centre is well served. There is a tarmaced road, a national trunk road B3, which runs from Kisii to Kericho via Keroka. There are other roads which provide accessibility to the hinterland such as Keroka - Kiamokama and Keroka - Masimba roads. There are telephones and post office which facilitate communication between the settlement and the country at large.

However despite the potentials for future growth of the settlement, it faces various problems and constraints. The main constraint is shortage of land especially that under the jurisdiction of the council.

Most of the land is under private ownership which the council has got no control over them. Due to this constraint, scattered and uncontrolled settlements have sprung up and hence becoming difficult to provide essential facilities such as water, electricity and sewerage.

The landscape towards the western side of the settlement is steep and hence not suitable for the construction of buildings. This leaves the option of expansion of the settlement to the eastern side which has a gentle slope.

The settlement encounters problems such as lack of recreational facilities, lack of effective development control, sub-standard housing and uncontrolled settlements and lack of developed access roads. These problems can be solved through the provision of such facilities mentioned and effectively control by following the guidelines of the already prepared development plan.

Despite these problems and constraints the role of the tea factory has led to the provision of infrastructural facilities such as water, electricity, sewerage, banking facilities and physical expansion of

the settlement. Another positive role of the factory has been the creation of employment opportunities which has led to the increase of incomes and hence attraction of people to the settlement.

CASE 2: KEBIRIGO

3.6.0 Historical Development

Kebirigo started as a social gathering place where traditional functions and ceremonies were performed such as dancing and wrestling. These functions were occasionally held and attracted many people from the nearby clans such as Bonyamatuta, Bogichora and Bosamaro. Despite the performance of these functions, later selling of food mainly porridge and cooked maize to the participants and spectators started. This was the early start of trade in Kebirigo.

Construction of simple structures made of thatched grass and mud was done where people could prepare meals and accommodate those who had come from far areas such as Mokomoni and Nyamaiya until the functions were over. Sometimes these functions could last for one week. These structures were constructed at the present site of Kebirigo which was acting as a communal land area earmarked by the elders as their social gathering place

for performance of functions and where the elders could settle clan disputes. Initially there were two structures but as the demand increased more were constructed. During that period food was costing 25 cets to 50 cents depending on the quantity one wanted.¹⁰

By 1936 the centre had developed into a traditional central place where agricultural products such as maize, pumpkin, beans, bananas and finger millet were exchanged and livestock such as cattle, goats and sheep. The elders of the area had chosen specific market days for specific commodities. Tuesdays were for livestock and Thursdays for agricultural products. During this period a cow was costing four shillings.

In 1938 the council took the management of Kebirigo as its activities had increased and by 1945 the place had been surveyed and a market developed. In order for the council to generate revenue, it started allocating plots. The council was charging ten shillings per plot. In 1952 six major structures were outstanding in Kebirigo. The main items sold were clothes, soap, maize and paraffin which were in greatest demand during that period. No data was

10. Field Survey.

available for the price of these commodities except maize which was sold at 50 cents per tin.¹¹

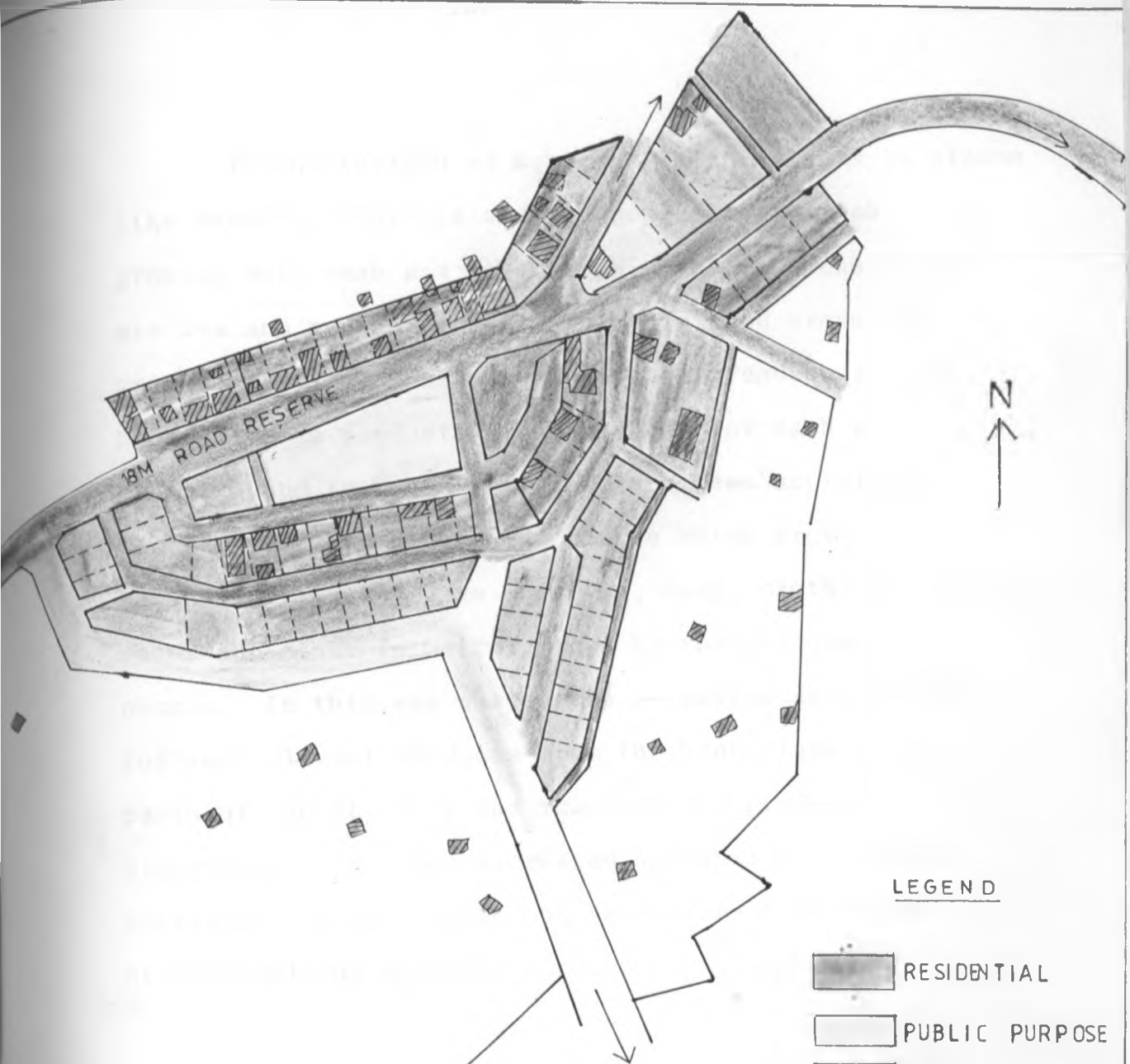
The demand for plots became greater as it is indicated by the price. By 1969 the price per plot was Ksh. 500 only. During this period the main structures were concentrated near the road junctions to Keroka, Kisii and Kericho with an open air market at the centre. In 1971 the tea factory was established and the demand for plots increased due to the increase in business activities as it would be discussed later. By 1972 the price per plot had risen to one thousand shillings only. By 1986 when the research was conducted the price per plot had risen to Kshs.30,000 and according to the businessmen interviewed it was rather difficult to secure a plot. All the plots within the area of jurisdiction of the county council are allocated and they number forty. The available plots are on individual (private) land and sometimes the owners are not willing to sell them. However some are selling them at exorbitant prices and this has led to escalation of land prices.

Towards the factory direction and Viongozi centre (a leadership training centre) there are more than

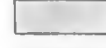
11. Field Survey.

forty isolated plots with buildings constructed by the owners of the plots or an outside who was lucky to buy the plot. All the isolated plots came up after the establishment of the factory. A few of the businessmen interviewed confirmed that they have erected buildings there because of business generation resulting from the establishment of the factory. See Map No. 13 showing the spatial distribution and extent of Kebirigo.

The growth of Kebirigo is attributed to many factors. Three of them were of great importance. Kebirigo was centrally located among Bogichora, Bonyamatuta and Bosamaro clans where they could exchange goods and services as mentioned above. It was also a resting place for people either from the interior of Kisii highlands or those from Sotik tea estates. This was the point where workers from either side could change from one vehicle to another say those from Kisii to the tea estates and vice versa. With its central location, it has three roads connecting it, Kisii - Kebirigo, Kericho - Kebirigo. Hence from a transportation point of view Kebirigo stood a good chance of attracting people and goods.



LEGEND

-  RESIDENTIAL
-  PUBLIC PURPOSE
-  INDUSTRIAL
-  COMMERCIAL
-  TRANSPORTATION
-  DEFERRED
- 
- 
- 

SCALE 1 : 2500

MUMBO C G
DUR P
MA THESIS 1987

MAP NO

KEBIRIGO EXISTING LANDUSE PATTERN

The hinterland of Kebirigo which extends to places like Makairo, Kenyenia and Nyangoge is very rich growing both cash and food crops. The main cash crops are tea and pyrethrum while the main food crops are maize, beans, bananas, sweet potatoes, and sugar cane. Most of these products are exchanged for cash at Kebirigo and this has increased business activities at the centre. It is also the centre which provides household items such as paraffin, soap, clothing, animal feeds and other farm implements to the surrounding people. In this way the centre is acting as a gateway for agricultural products from the hinterland to other parts of the district and manufactured products to the hinterland. This has increased specialized business activities in the settlement as various shops have started selling specific goods.

Establishment of the factory is another factor which has contributed to the growth of Kebirigo. The factory was established in 1971 and its influence was vital. With the coming of the factory, Kebirigo was upgraded to a rural centre from market centre and the nearby centres such as Sironga, Makairo and Kenyenia are smaller and offer a small range of goods mainly household items such as sugar, paraffin and soap. Tea farmers had to come to Kebirigo to get

tea payments and did their shopping at the centre hence increasing the rate of business activities. Earnings from ten at the end of the year commonly known as "bonus" led to the acquisition of plots at the centre from private owners, and a number of buildings were erected. Some of the buildings were offering commercial functions, catering for the people who had left their rural homes to venture into informal sector activities such as carpentry, mechanics, shoe repair and watch repair. Other ancillary services such as banking, post office etc. have been attracted to the centre and this has increased its a real expansion.

3.6.2 Land ownership:

Land in the settlement is owned by three parties; the county council which owns the main central part of the settlement, individuals and KTDA where the factory is erected. The factory occupies about 5.4 hectares while the county council occupies fifteen hectares (15 ha) and the remaining approximately twenty hectares is under private ownership.

3.6.3 Industrial Activities:

Kebirigo tea factory forms the main component of industrial activities in the settlement. The factory employs 200 workers, where 120 are permanent

and 80 are casuals. The factory serves about 5,000 farmers. Other ancillary activities associated with the factory are two workshops, one which make chests for made tea and employs eight people and another for repairing vehicles which employs ten mechanics. Carpenters at the chest workshop make an average of forty chests per day.

Other industrial activities within the settlement include temporary garages which repair vehicles mostly matatus which are common in the area. There are four garages and each has an average of four employees hence garages provide employment opportunities for 16 people. Others include watch repair, shoe repairs who are five in the whole settlement, furniture workshops which are four and have eight employees. There are also posho mills which employ 6 workers, an average of two per posho mill.

3.6.4 Commercial Activities:

With the establishment of the tea factory, influences were felt in terms of shops, hotels, bars etc. The commercial activities are dominated by open air market, retail and wholesale. Before the establishment of the factory there were a few shops

which were specializing in retail trade. The main commodities sold were household items e.g sugar, soap and paraffin etc. Now there are 2 hardwares, one wholesaler and more than forty retail shops. Other establishments include hotels which number five, two bookshops, five bars, three butcheries and one studio to mention a few. More shops are coming up towards Viongozi centre due to its attraction as a leadership training centre and towards the factory direction. Most of those shops are outside the county council land and hence on isolated plots. Bars and hotels have come up to reap the market opportunities resulting from the establishment of the factory. For example before the establishment of the factory, there was one hotel but now they are five at the centre and two near the factory gate. The increase in establishments came up because with the establishment of the factory; Kebirigo became the centre for paying farmers from East and West Mugirango locations. Siamani; Kenyanya, Mokomoni and Nyamaiya all in Nyamira division.

A notable feature of the commercial activities is that business is shifting from the old buildings at the central part of the settlement towards factory direction and Viongozi centre. These two happen to

be at the extreme ends of the settlement which indicates that the two; Viongozi centre and the factory have increased the a real expansion of the settlement and the implication of this trend shows that in future the growth of the settlement will be towards the factory and Viongozi centre.

3.6.5 Open air market

At the central part of the settlement and the Y-junction of the roads leading to Kisii , Keroka and Kericho is an open air market with a few shades made of sticks and iron-sheets at the edge of the market near the road. The market operates three days a wekk on Mondays, Tuesdays and Fridays. Tuesdays are for the selling of livestock while the rest are for the selling and buying of agricultural products. The main agricultural commodities sold include maize, potatoes, beans and bananas. Other items include both new and second hand clothes which are displayed on the ground. The market is fenced with wires and has got three outlets. The fencing is done to enable the council to collect revenue from sellers in the form of tax and prevent the market from roaming animals such as cows, goats and donkeys during non-market days.

The market occupies an approximate area of 0.6 hectares and can accommodate more than one hundred people at a time. See the plate No. 8. The catchment of the market covers large areas such as Mokomoni in Borabu location, Bogisanga, Nyaroranda, Stamani and Bosamaro to mention a few.



Plate No. 8: Open air market at Kebirigo.

3.6.6 Banking facilities:

Before the establishment of the factory, there was no banking facility at the settlement. But with the establishment of the factory, two banks are operating at the settlement. These are the Kenya Commercial Bank operating on mobile basis and comes on Thursdays. The bank has rented a building from which it renders services. The other one is the Cooperative Union Bank which was long established in the Mid 70's.

These banks are meant to assist farmers especially tea and pyrethrum growers. Tea is the main cash crop in the area as pyrethrum production has declined due to the fall in the world market. Tea payments especially bonus at the end of the year involves alot of money which is risk when paid in lumpsum to farmers as in most cases some farmers are attacked by thugs and the whole amount is stolen. So to lessen thuggery cases, farmers are paid through banks where they can withdrawals small amounts. Even those farmers nowadays earning more than two hundred shillings a month are paid through the bank. Apart from theft, this method is seen as a way of reducing lavish spending by some of the farmers, who drink and forget family responsibilities.

Not only banks serve farmers, but also factory employees, teachers and businessmen in the settlement and the surrounding areas. This has benefited the people very much as they can get their money within reach instead of travelling to Kisii town which is 30 Kilometres away.

3.6.7 Electricity

The installation of electricity at Kebirigo came after the establishment of the factory. KTDA was actually responsible for the costs of connecting to the factory passing through the centre. Individuals who are able can now connect it to their homes or premises. However there are no street lights at the settlement and approximately fifteen people have connected to their houses. Among the business premises with electricity were the bars, hotels and posho mill. The existing capacity of electricity although not known is enough as it can serve the whole of the settlement if connected. It is considered as a positive impact for the future growth of Kebirigo.

3.7 Roads and Transport

It should be noted that the establishment of a tea factory is often accompanied by an improvement of transportation network. Roads in the settlement were constructed earlier before the establishment of the factory but were of poor conditions being muddy during

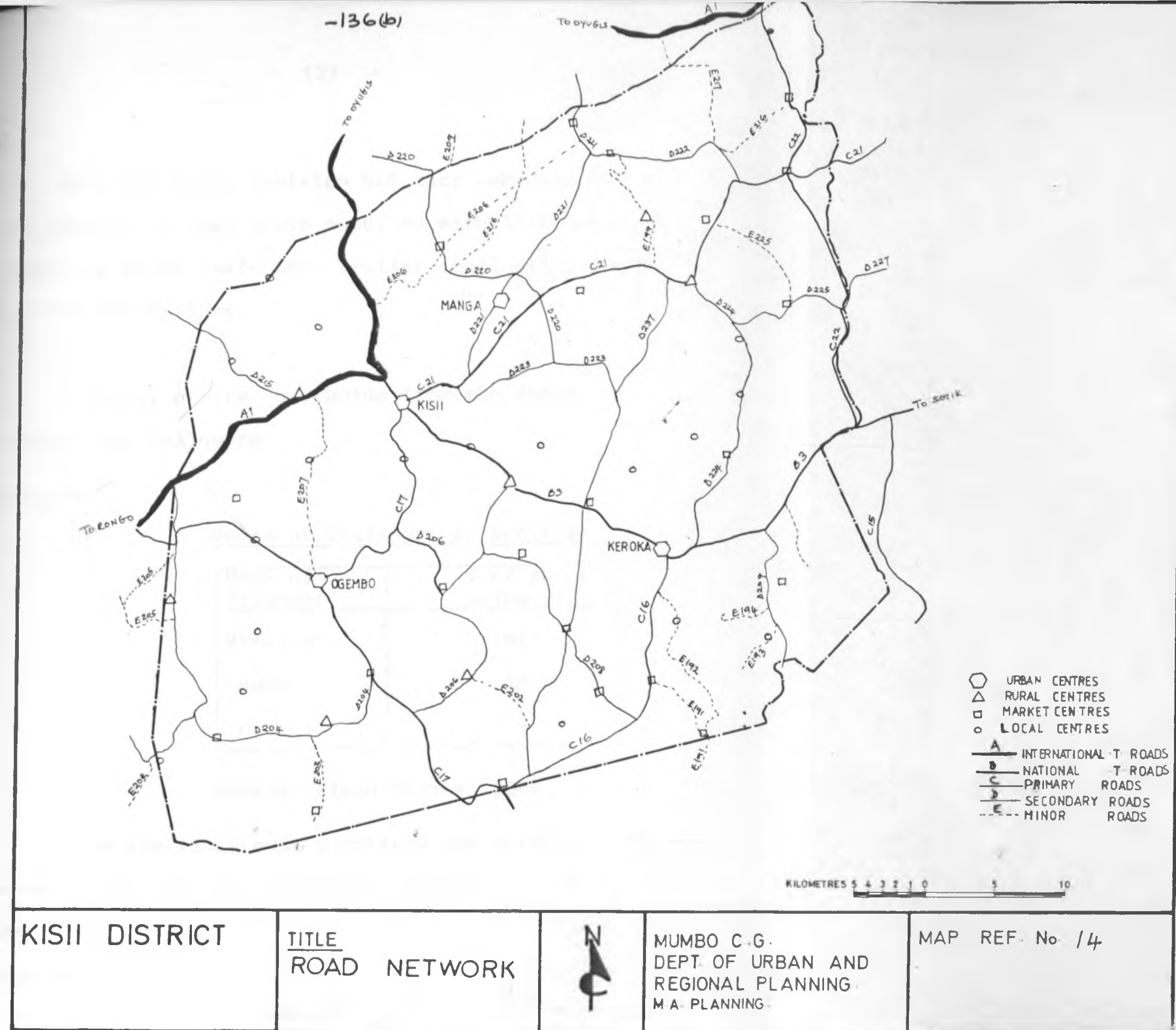
the rainy season and dusty during the dry period.

With the coming of the factory, they were improved by murraming them and KTDA tarmaced some sections especially those leading to the factory from Kisii-Kebirigo road see plate No.9

A survey of the existing road network showed that C21 a primary road links Kisii and Kebirigo which then passes through Nyaramba-Ikonge to Kericho. D224 road also connects Kebirigo and Keroka. See Map No.14 showing road network in the district. There has been an increase of traffic on these roads especially after the establishment of the factory. The table showing historical traffic data for the roads is shown at appendix II.



Plate No, 9 : Tarmaced section of the road to the factory.



etc.

Because of the heavy traffic passing right at the centre of the settlement, a by-pass is under construction. See map No. 13 which is hoped that after completion will alleviate congestion. Also the heavy trailers which are not designed for the present road could necessitate for their upgrading.

Road C21 Kisii-Kebirigo had many vehicles due to many matatus on that route combined with KTDA vehicles collecting green leafs and trailers collecting ready tea from the factory,

A survey of the households from the field revealed the following:

Table 15

Means of Transport at Kebirigo

Mode of Transport	% of people using it
Matatus	81
Buses	15
Foot	4

Source: Field Survey, 1983.

From the table most commuters use matatus (81%) because they are many and their frequency being regular than buses while those on foot were found to be factory workers residing outside the factory compound and those households who go for nearby distances such as shopping etc.

Because of the heavy traffic passing right at the centre of the settlement, a by-pass is under construction. See map No. 13 which is hoped that after completion will alleviate congestion. Also the heavy trailers which are not designed for the present road could necessitate for their upgrading.

3.7.1, Water Supply

Prior to the establishment of the factory there was no piped water supply. The majority of the households were using rain and river water. Since tea processing needs a lot of water, it was the responsibility of KTDA to bring piped water to the factory and the main piped happened to pass through the settlement and hence was easy for the residents to connect piped water to their houses.

Although there is water supply, not all people have connected to their houses especially the new settlements which are coming up towards Viongozi centre and factory direction. Even at the main centre some buildings do not have water connections and this according to businessmen interviewed revealed that the buildings are not theirs but have rented them and are not ready to incur costs of connecting the water. They remarked "it is the responsibility of the owner to connect the pipes to the building".

Initially the water supply was supposed to cater for the small resident population of less than two thousand people because it was not and has not reached an urban status. However the water scheme serving Kebirigo serves many other areas such as Miruka, Kegogi, Nyamaiya and Nyamira and the total population of these areas is over one hundred thousand.

3.7.2. Health Facilities

Before the establishment of the factory had a small dispensary which was attending to minor cases and complicated ones referred to Nyamira (now a district hospital). It was supposed to serve 10,000 people. Due to congestion at the dispensary, 2 private clinics have established at the centre. This is due to the increase of population at the centre demanding health services. This include businessmen, factory workers and the surrounding people who used to come from as far as Kenyēnya and Makairo.

Long queues are experienced at the dispensary indicating that the demand is high. Some of the patients interviewed revealed that sometimes after staying on the queue for long hours are told to buy their own drugs which clearly shows that the services provided are inadequate. The dispensary is manned by three people and the daily attendance is approximately fifty people.

From this discussion one sees that the dispensary needs some improvements such as expanding the building and increasing the number of staff in order to cope with the demand.

3.7.3. Posts and Communication

With the establishment of the factory, additional population was added to the settlement mainly by factory workers, more businessmen and employees in the commercial sector. This led to the establishment of a sub-post office which handles mails and postal orders only. It is located to the right side of the road to Keroka near the Y - junction. It handles an average of two hundred mails weekly.

In the same building is a telephone call box as the main exchange is at Nyamira. This shows that the demand for telephone services is not very high because only one call box serves the entire centre. However there are telephone lines extended to the factory offices but are strictly used by KTDA workers. However the Kebirigo telephone was supposed to serve 200 people,

3.7.4. Educational Facilities

Within Kebirigo settlement there is no school whether nursery, primary and secondary. However there are two primary schools within a walking distance from the settlement (1 km, away). These schools have upto standard eight classes, each with a total of 300 pupils and ten teachers each although sometimes some can be understaffed or overstaffed.

The only secondary school near the settlement is Kebirigo which is 1½ kilometres away. It has a total of 160 students with 9 teachers. Viongozi centre also provide vocational training to people from within and outside the centre. It specializes in training Christian leaders. Yearly it handles an average of 700 participants attending workshops and seminars. Participants comprise of teachers, parents and students.

3.7.5, Population

For Kebirigo, no population has been done. This is because the settlement is regarded as a rural centre, with rural characteristics. Its population has been included in Siamani sub-location within which it is found. Due to lack of population figures for the settlement per se; sub-location population is used to make projections.

Population for the five sub-locations which comprise west Mugirango location for 1969 and 1979 are used to calculate growth rates and using the growth rates the population is projected using a simple arithmetic formular.

$$P_n = P_o (1 + r)^n$$

$$P_n = P_o (1 + r)^n$$

Where P_n = Population at n years

P_o = Initial population

n = no. of years

r = growth rate

The basic assumption made of the population figures for these sublocations is that since they are found in the same ecological zones, their population characteristics are the same. 1969 population census showed that all sub-locations had population ranging from 8,000 to 10,000 see table No. 16(a) Comparison of the figures show that Siamani within which Kebirigo is found has a higher population both in 1969 and 1979. This is assumed to be due to the existence of Kebirigo settlement, and it is attributed to the inflow of people due to employment opportunities and business activities.

Basing the argument on the above assumption, then from the table below, Siamani sub-location will have over 29,000 people while the least sub-location will have 9,451 by the year 2000. This rise in population is associated to the establishment of the factory which has attracted people to the settlement.

To get a useful estimate of Kebirigo's population alone in 1987 we can use the 1990 and 1985 projections.

Table 16 (a)

Population Projections by Sub-location

Sub-Location	1969	1979	Growth Rate	1985	1990	1995	2000
East Bosamaro	8,427	9,003	0.7	9,258	9,721	10,066	10,423
West Bosamaro	9,108	11,312	2.2	12,341	14,371	16,003	17,865
Bonyamatuta	8,332	8,691	0.4	8,831	9,081	9,264	9,451
Siamani	10,294	14,591	3.4	16,679	21,077	24,912	29,445
Bogichora	9,084	10,244	1.2	10,745	11,680	12,398	13,160
West Mugirango Location	45,245	53,841	1.58	57,854	65,930	72,643	80,344

Source: Own calculations, 1986.

Subtracting 16,679 from 21,077 = 4,398, dividing this figure by 2 gives 2,199. To use a more accurate estimate we use the 1987 population which is $16,679 + 2,199 = 18,878$. If we assume a very modest level of urbanization of the sub-location at 10% per annum then it gives the following population estimates for Kebirigo:-

Table 16 (b)

Population Projections for Kebirigo

Year	1987	1990	1995	2000
Population	1,887	2,107	2,491	2,944

Source: Own calculation 1987.

From the calculations, presently Kebirigo has a population of about 1,800 and by the year 2000 would have about 2,900 inhabitants hence indicating that by that time it could have attained an urban status. This has the implications of possessing the urban facilities such as street lights, schools, sewerage and other social facilities.

3.7.6. Housing

Despite the fact that Kebirigo is rural in nature, presently, the projections have shown that by the year 1990, it should have attained urban population of 2000

people. This population would need houses both for the factory workers and others in the commercial sector. The current houses existing are built by individuals on private land and those near the factory are offering residential functions while those at the centre offer both residential-cum-commercial where people rent rooms behind the shops.

Most of the houses are sub-standard and unplanned as they are build without following any standard or guidelines. See plate No. 10(a)

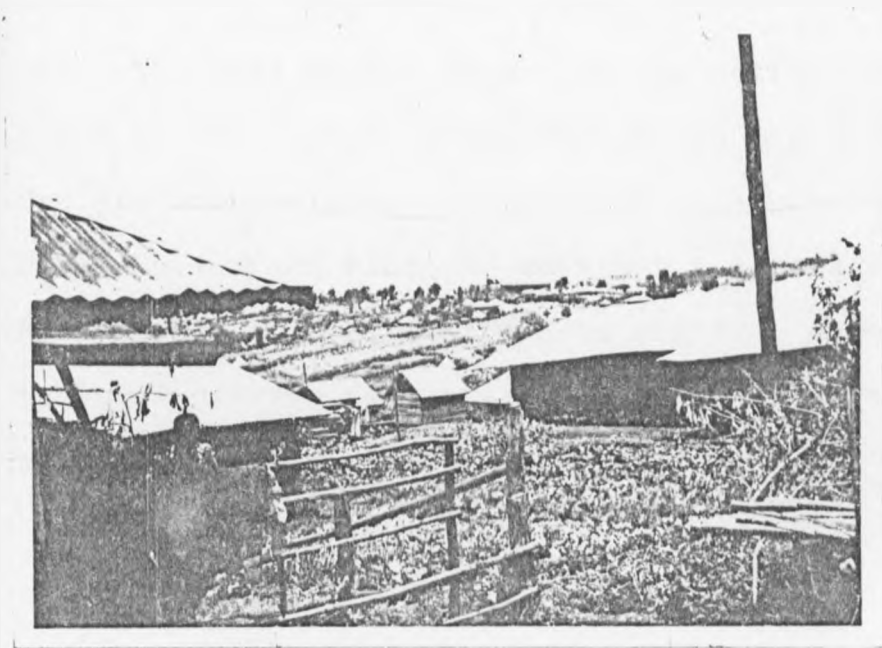


Plate No. 10(a) Sub-standard housing

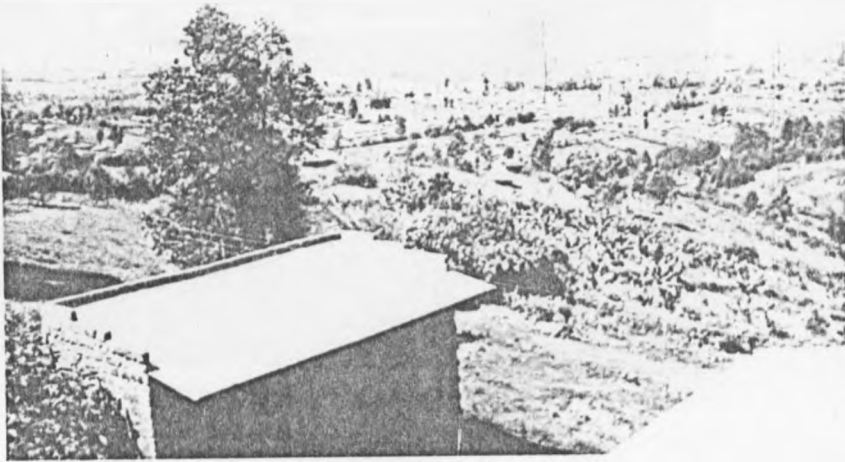


Plate No, 10 (b): Medium Sub-standard housing

The most decent houses in the settlement are found at the factory compound. These are built by KTDA for its high workers. Comparison of the houses in Plate No. 10(c) and Plate No. 10(d) shows a contrast. The KTDA houses are built of blocks and iron sheets while those of private developers are made of mud and iron sheets



Plate No. 10 (c) : KTDA houses

Table 17:

Types of building materials

Building materials	Walls	Roof	Floor
Blocks	12%	-	-
Grass	-	30%	-
Mud	81%	-	77%
Cement	-	-	23%
Iron sheets	7%	70%	-

Source : Field Survey, 1986

The above table shows a survey of households conducted concerning building materials. The majority of the households have mud walls (31%), roofs made of iron sheets (70%) and floors made of mud (77%). This clearly confirms with the plates above that houses are build of simple materials and are sub-standard. To improve the standard, there is need to encourage private developers to use standards and seek guidelines on how to build low cost houses.

3.7.7, Employment and Incomes

Employment opportunities were found in the commercial sector, factory and health facilities. The factory has over 200 employees while the health institutions currently have ten people approximately. The commercial sector being the largest sector providing employing opportunities such as mechanics, shoe repair etc, a survey was conducted and the following results found:

Table 18 (a)

No. of employees before factory
Establishment

No. of Employees	% of business-men
0	82
1	7
2	7
3	4

Source: Field survey, 1986.

From the table 82% of the businessmen had no employees while 18% had employees ranging from 1 - 3.

Table No. 18(b)

No. of Employees after
Factory Establishment

No of Employees	% of Businessmen
1	10
2	45
3	18
4	14
5	8
6	5

Source: Field survey 1986

From the table 45% of the businessmen had two employees while 45% of them had employees ranging between 3 - 6 and 10% had one employee. Comparison of the two tables above shows that with the coming of the factory employment opportunities were created in the business sector in the settlement,

3.7.8 Income Levels

The breakdown of the incomes levels of both the household and businessmen is shown below:

Table No. 19 (a)

Level of Income (Businessmen)

Level of Income Per month (Kshs.)	% of Businessmen
0 - 1999	36
2000 - 3999	23
4000 - 5999	14
6000+	27

Source : Field Survey 1986

The results reveal that 36% were getting less than Kshs. 2000 per month, while 27% were getting over Kshs. 6000. This shows that with the coming of the factory the majority were getting an income of less than Kshs.2000 which could be attributed to the competition of business activities as many shops have come up with the establishment of the factory.

The household level of income revealed that the majority 33% were getting more than Kshs. 500 per month. Those getting Kshs. 2000 revealed that they had commercial activities at the settlement such as selling of bananas and sugar cane.

Table No. 19 (b)

Household's level of Income

Level of income per month (Kshs.)	% of businessmen
0 - 499	33
500 - 999	11
1000 - 1499	19
1500 - 1999	7
2000+	30

Source : Field Survey, 1986

Combination of the analysis on employment and income shows that generation of employment opportunities led to the increase of income of both businessmen and households, a positive impact of the factory

3.8.0 Prospects and Constraints for Future Growth
for Kebirigo

Although Kebirigo is rural in character it has potential for growth and expansion. The existence of the tea factory itself within its vicinity has had a great influence on the physical expansion of the settlement. The establishment of the factory has attracted commercial activities and creation of employment opportunities has attracted more people from the nearby areas. The employment opportunities in the informal sector such as furniture making, car repair, shoe repair etc. has flourished rapidly.

There is a main road being constructed from Ngoina junction from Kericho-Sotik road which passes through Kebirigo to Kisii. The completion of this road could make Kebirigo a communication centre as this road would be shorter by 28 kilometres than the former road from Kericho to Kisii via Sotik. This means that most vehicles from Kericho will pass through Kebirigo and this would boost business activities in the settlement. This will facilitate movement of people and goods easily with its completion.

The hinterland of Kebirigo is very rich with agricultural potentials. The main agricultural products are tea, pyrethrum, maize, beans, bananas and livestock. Most of these products find their outlet to the other parts of the district through Kebirigo.

Centrality of the settlement is also another potential. The settlement is central between Kisii highlands and Sotik tea estates. This encouraged the growth of the settlement as it became the transshipment place for people and goods from either side.

In terms of landscape, the settlement has a gentle flat land which is suitable for physical expansion to take place. The general direction of expansion is towards the factory direction.

and Viongozi centre. This is clearly indicated by number of structures coming up in these directions. Due to its gentleness construction costs are not higher as for the site where the landscape is steep such as Nyamira, a nearby centre.

The settlement has problems such as scarcity of land. The local authority has allocated all the land and the remaining falls under private ownership. Lack of public utilities such as sewerage and inadequate water supply also affect the future expansion of the settlement as water is among the basic necessities of life,

Summary

The establishment of the factory within or closeby the existing settlements have increased the population, creation of employment opportunities, installation of infrastructural facilities such as water, electricity, improvement of roads, etc.

The Chapter also examines other factors which contribute to the growth of the settlements such as rich hinterland, communication and transport systems. Finally the chapter examines the prospects and potentials for growth and has identified constraints and problems such as shortage of land, and inadequate public facilities.

CHAPTER FOUR

4.0 PLANNING IMPLICATIONS AND RECOMMENDATIONS

After examining the detailed analysis of the findings on the role of tea factories on the growth of nucleated settlements, this chapter endeavours to discuss planning implications of the findings. Recommendations are given which are meant to guide and control the positive role of the factories in an organized manner to foster growth and development of the settlements. At the same time these recommendations will provide solutions on how to overcome the problems and constraints the settlements are facing as a result of the establishment of the factories.

The above analysis has revealed that the production of cash crops and distribution of people in the district affect the pattern of human settlements. The migration of people from the rural areas to urban settlements has led to a pattern of nucleated settlements in various parts of the district which form the focal points for future growth and development. Those points are seen as centres of promoting urbanization process in future as the district was found to have a low urbanization process with Kisii town being the principal One. Promotion of urbanization process is based on the assumption that once a centre has acquired infrastructural facilities, it will attract investors and people into the centre and hence will grow and expand. In the long run

if the same trend continues, this centre will be a resting - place for the excess labour force from the farms instead of migrating to already congested towns such as Nairobi and Mombasa. The study has revealed that there are two patterns of settlements in the district, rural and urban settlements. The rural settlements are in the form of homesteads while the urban ones are those which have been designated using the growth and service centre policy. According to this policy, the centres would act as instruments of stimulating development and channelling government resources into potential growth centres. However this policy has failed due to inadequate assessment of the designated centres' potentials.

The analysis has further revealed that there are many factors influencing the growth and development of nucleated settlements. The study has noted that the hinterland of these settlements is very rich in the production of agricultural crops especially the industrial based ones such as tea, pyrethrum and coffee. This has led these settlements to act as centres of trade and exchange. This attracted people and commercial activities, This necessitated physical expansion of the centres, in the form of buildings; open air markets etc.

Transportation and communication is another reason for the emergence and growth of nucleated settlements. Both settlements (i.e Keroka and Kebirigo) are major transportation routes which handle a lot of traffic and goods. Due to their centrality in terms of transportation, they offer easy accessibility to the nearby centres. They attract more people with different activities which require more land thus influencing nucleated settlements. This is a positive effect which can be encouraged by improving the conditions of the already existing roads by tarmacing and murruming them. However once the route has been diverted from those centres, they tend to stagnate and most traffic, people and goods are also diverted from it. This accompanied with poor resource hinterlands leads to stagnation of the centres.

Establishment of tea factories near or within existing settlements has influenced the growth of the settlement by offering employment opportunities in the factory and other related economic activities at the settlement, especially in the commercial sectors. Other positive effects of tea factories include improvement of the roads linking the centres, provision of infrastructural facilities such as electricity, water, telephones etc. These positive effects can be encouraged by using development plans and guidelines. However some

of these facilities were inadequate in Keroka such as electricity and sewerage in uncontrolled settlements while Kibirigo was missing sewerage a part from the factory compound; Also a few individuals who electricity.

Establishment of tea factories had also negative impacts such as the coming up of uncontrolled settlements with sub-standard housing units. The increase of people in these settlements has caused pressure on the existing infrastructural facilities which also have got their own implications in future as regards the growth and development of the settlements inorder to provide the inadequate or missing facilities and minimize the costs when these services are provided to the uncontrolled and scattered settlements.

A combination of these factors influencing growth of the settlements shows that in future the settlements will grow and expand due to attraction of more people and economic activities. In the short term this will cause shortage of land and inadequate facilities while in the long term this will necessitate the acquisition of more land and concentration of population who will demand more housing units.

4.1 Planning Implications

If the above analysis and findings can be accepted for the settlements in the district and others in the country, then it calls for a national policy approach for future growth and development of those settlements. The policy should recognise the relationship between the factory and the settlement as it is part of the rural industrialization programmes. As indicated earlier, these settlements depend on resources from their hinterland which also provide raw materials for these factories. This then calls for an integrated approach of development for both rural and urban aspects for their future growth.

In terms of physical implications, the establishment of the factories has led to the demand for more plots in the centres which has encouraged scattered and uncontrolled settlements. Due to high demand, council land has been completely allocated and more demand is now focused on private lands which the council has got no control over their development, therefore encouraging the development, of unplanned and uncoordinated development and uneconomical use of land. Some of the dispersed pattern of settlements were found to be far a way from some of the existing services and facilities such as electricity, sewerage, etc.

Different structures of sub-standard nature and different types have come up without using the set

standards and planning guidelines. These structures are concentrated on private lands. Examination of urban policies in Kenya shows that more emphasis is focused on western standards in the provision of services to these settlements. Due to their unplanned nature, little attention is paid to the improvement of housing units and accompanying services.

In terms of economic implications, employment creation opportunities should be given more emphasis. With the establishment of the factory, commercial activities were generated which led to creation of job opportunities more so in the informal sector activities such as furniture making, mechanics, shoe repair, etc. This has attracted people and resources from the hinterland. The study found out that there is a relationship between the increase of employment opportunities and the establishment of factories.

The study found out that the increase of commercial activities was as a result of cash earnings from tea which was ploughed back in the business in the form of goods, services and buildings. The increase of these activities has led to the increase of traffic along the roads which link the centres with other areas. The vehicles on these roads include private cars, buses and lorries. The lorries especially the heavy trailers

which collect, made tea from the factory has implications on the nature of roads in future to be constructed in these centres.

Social implications include population and provision of infrastructural facilities. The centres have been experiencing rapid population associated with establishment of the factories which attracted people both at the factory itself and other sectors such as commercial, education and health.

It was observed that with growth rates of 7.1% for Keroka and 10% for Kebirigo, the settlements would have a population of 80,000 and 29,000 people respectively by the year 2000. This population, however did not result directly from the location of the factory but also from the elevation of the centres to urban council and rural centre respectively. Population growth has its own implications. As it increases pressure is exerted on the existing basic amenities such as water, health facilities, schools and housing. Some of these amenities were found to be inadequate or missing. For example there was one nursery school at Keroka while recreational facilities such as playgrounds, cinema halls etc, were lacking completely in all the settlements. Housing was only provided to factory workers at Kebirigo and police at Keroka and yet they were inadequate.

Other implications of the rapid population growth include electricity and sewerage which are inadequate at Keroka and missing at Kebirigo especially sewerage.

A combination of the factors influencing the growth of these settlements shows that, in future, the growth of these centres would expand by attracting more people and economic activities. This will imply that more land would be needed as these centres would become points of population concentration in the district and act as destinations for the excess labour from the farms.

4.2 Recommendations

In view of the findings of the study already discussed, a set of policy recommendations are advanced meant to guide the growth and development of these settlements. The recommendations advanced are both general and specific.

4.2.1. General Recommendations

Due to the rapid growth of these settlements, their future will then require a comprehensive approach in planning both at national and local level. Comprehensive view would be vital in view of the fact that these settlements are interdependent with the rural hinterlands. These settlements depend on food and labour from the hinterlands while the hinterlands get manufactured goods,

innovations and services such as banking, postal, etc. from these centres. This therefore relates with the assumptions of rural industrialization programmes aimed at promoting the rural areas by providing employment opportunities and thus reducing imbalance between urban and rural areas. This also relates with rural development programmes which are aimed at curbing the rural-urban migration by developing the rural areas as urban areas and thus influencing balanced growth in both areas.

There is need also for a policy to deal with the existing areas of uncontrolled developments throughout the country. This should be done by improving these areas to some acceptable standards, making uncontrolled areas legal so that essential improvements could take place.

4.2.2. Specific Recommendations

Along with the general findings, the study came out with a few specific recommendations for guiding the development of centres in the district and country as a whole.

In terms of land use, most of the land is privately owned and hence shortage of council land for further allocation and effective development control. Therefore the major recommendation as far as land is concerned

would be the acquisition of land from private owners by compulsory purchase. This will enable the local authority to control development of unplanned and scattered settlements. The study also recommends the local authorities to strengthen their powers and effectively guide and control development according to the already prepared development plans. This was revealed in the study that although all the centres had development plans prepared, they were not used as guides for further development. In conjunction with this, the local authorities should control the subdivision of half plots of land for the purposes of speculation, otherwise the centres will not have a legal base against which to guide the development of these half plots, which in the near future will result to unplanned developments.

The provision of community and infrastructural facilities were found to be inadequate. In both centres there were no social halls, and play grounds. Infrastructural facilities such as electricity, sewerage, etc. were also inadequate in Keroka as they were found concentrated at the main commercial centre while at Kebirigo there was no sewerage and electricity had not been connected in the centre as street lights. Therefore the study recommends the provision of these facilities where they are missing and improvement of the existing ones in order to attract more people and in particular investors.

In terms of population, the study found out that the rate of population growth is very fast in both Keroka urban council and Kebirigo rural centre. Using the earlier projections upto the year 2000, Keroka urban council would have a population of over 80,000 people while Kebirigo will cater for a population of over 29,000 people. From experience the population of the two centres will continue growing because of the factors such as natural rate of increase and migration of excess labour from the hinterland hence contribution to the growth of population of the centres.

Population growth of these centres has implications on the provision of services especially by the urban council and central government. In this case provision of these services should be based on the population growth trends. - However priority should be given to those already existing.

The authorities involved should address seriously to the provision of education services. Currently Keroka urban council does not run any educational institutions in its jurisdiction even a nursery school. The one which is there is privately run. The study therefore recommends that it will be necessary for the urban council to acquire a few of these institutions such as one nursery school a primary and even a secondary. The present two existing are run by the central government and private owners.

Priorities

In view of the identified problems and for suggestions have been made, the following programmes deserve priority. This is meant to reflect a more comprehensive approach to be adapted as given above.

- a) Acquisition of land by the local authorities and control of spontaneous development. This will enable the authorities to control development of land use activities in an orderly manner.

- b) The provision of infrastructural facilities such as electricity, sewerage to the residents of the settlements and premises at the central business district of these settlements. This will attract more people and investors to the settlements.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.0

The study set out to examine the contributions of tea factories on the growth of nucleated settlements (Keroka and Kebirigo) taking into account their historical development.

The nature of population distribution and the pattern of human settlements was examined to give us an account of how nucleated settlements are related to the establishment of tea factories. These settlements were meant to be points of growth and development in the rural areas and hence promote urbanization. The growth of these settlements is influenced by a number of factors such as transportation and communication network, resource hinterland and tea factories to mention a few.

The study has revealed that before the establishment of tea factories, these settlements were small trading centres serving the rich agricultural hinterlands, which were mainly based on subsistence economy. The introduction of cash crops such as tea, coffee and pyrethrum led to the establishment of industrial processing plants.

Examination of the study has shown that the establishment of tea factories within or nearby existing settlements has led to the physical expansion of the settlements by erecting more structures. Increase in commercial, educational, health and other related activities have increased which have contributed to the creation of employment opportunities in the centres. This further has led to increase of incomes and installation of infrastructural facilities such as water, electricity, telephones and other ancillary facilities.

Although the contributions of the factories are seen in positive impacts, there are negative ones. These include the displacement of people from their original land and high costs of the provision of infrastructural facilities due to the uncontrolled and scattered nature of the settlements. This was found to be so because most land was under private ownership which the local authorities have got no control over their development. Due to this fact the local authorities had shortage of land for further expansion as the main constraint accompanied with problem of steep slopes in Keroka and poor roads in Kebirigo.

With the identified constraints and problems, the study came up with planning implications and recommendations. The study gives general and specific recommendations and finally gives priority programmes. In general the study recommends a comprehensive approach to planning so that all aspects and sectors are planned at the same time.

For further research, the study recommends the need to carry out feasibility studies on population figures and characteristics for the settlements especially those bearing rural characteristics. The study also recommends research into how integrated and coordinated development could be implemented not only in these settlements but also others in Kenya where similar situations occur.

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APPENDIX I

HISTORICAL TRAFFIC DATA (KEROKA)

	YEAR	CARS	LIGHT GOODS	MEDIUM GOODS	HEAVY GOODS	BUSES	TOTAL
B3/23 KEROKA-SOTIK ROAD	1970	120	95	65	-	61	341
	1971	142	137	54	3	43	379
	1972	105	127	76	3	49	360
	1975	207	321	162	12	28	730
B3/24 KEROKA-KJSII ROAD	1970	140	123	80	1	67	411
	1971	110	95	51	3	37	296
	1975	293	486	185	12	35	1,011
	1976	147	304	86	19	55	611
	1978	213	369	96	16	41	735
	1980	134	284	82	6	44	550
	1982	88	406	112	17	39	662
	1984	80	351	113	7	58	609
C16 KEROKA- MASIMBA ROAD	1970	28	38	9	1	8	84
	1971	53	56	15	-	8	132
	1972	67	96	21	2	16	202
	1975	100	199	27	-	7	333
	1976	31	145	8	-	2	186
	1977	19	136	14	-	2	171
	1978	22	122	13	-	5	162
	1980	35	167	16	3	1	222
	1982	25	141	28	1	-	195
	1984	18	72	19	-	-	109

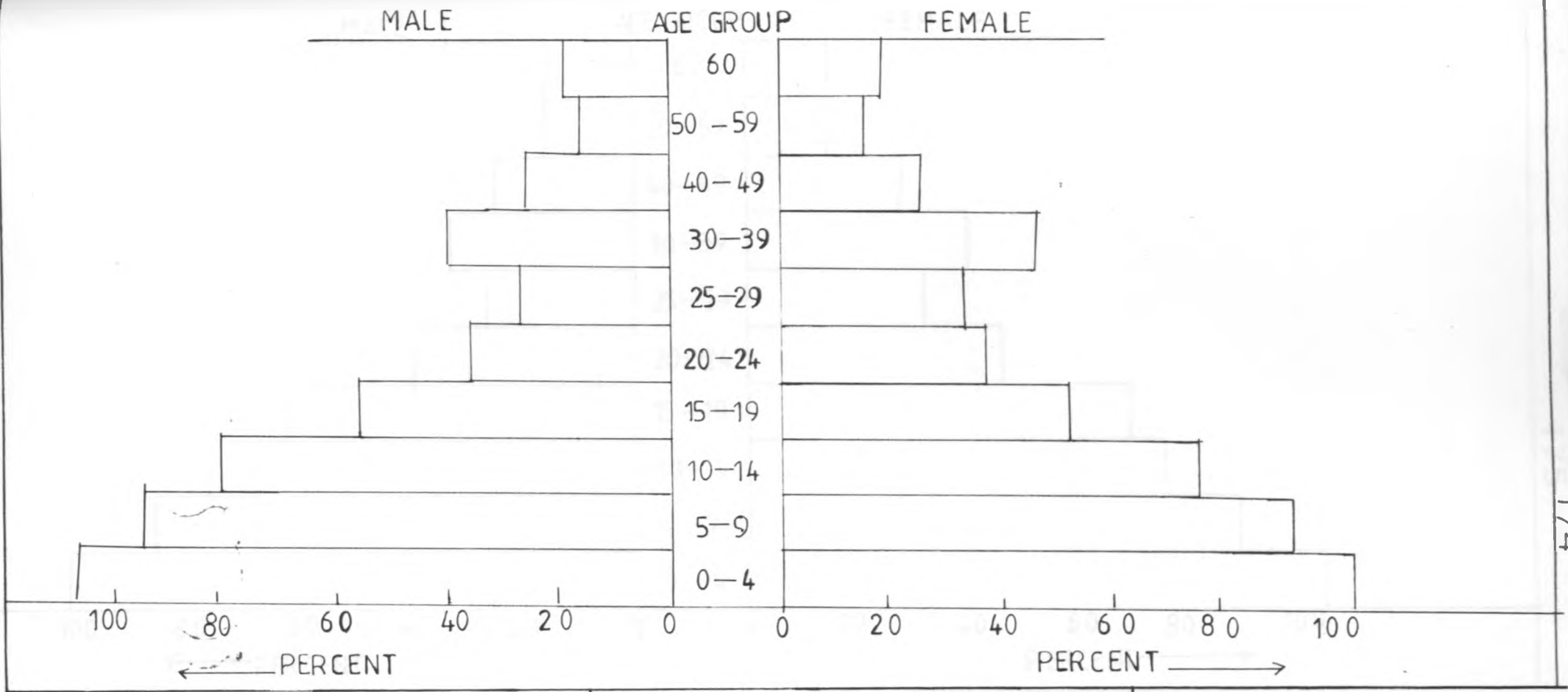
Source: Ministry of Transport and Communications:
Planning Section.

APPENDIX II

HISTORICAL TRAFFIC DATA (KEBIRIGO)

Census point and Location	Year	Cars	Light Goods	Medium Goods	Heavy Goods	Buses	Total
C 21 KEBIRIGO- KISII ROAD	1970	10	37	20	-	6	73
	1972	25	71	29	-	11	136
	1974	22	96	36	1	15	170
	1975	42	143	48	2	17	252
	1976	33	127	25	-	14	199
	1977	17	68	12	-	10	107
	1978	25	229	25	-	-	279
	1980	21	167	20	1	-	209
	1982	13	209	22	1	-	245
	1984	21	175	34	5	-	235
D 224 KEBIRIGO- KEROKA	1972	7	29	14	-	4	54
	1974	15	44	26	1	11	97
	1975	21	94	18	-	8	41
	1976	5	18	8	-	6	37
	1977	6	29	6	-	2	43
	1979	3	62	5	-	-	70
	1981	4	71	4	-	-	79
	1983	13	68	12	-	-	93
	1985	1	60	4	3	-	68

Source: Ministry of Transport and Communications:
Planning Section.

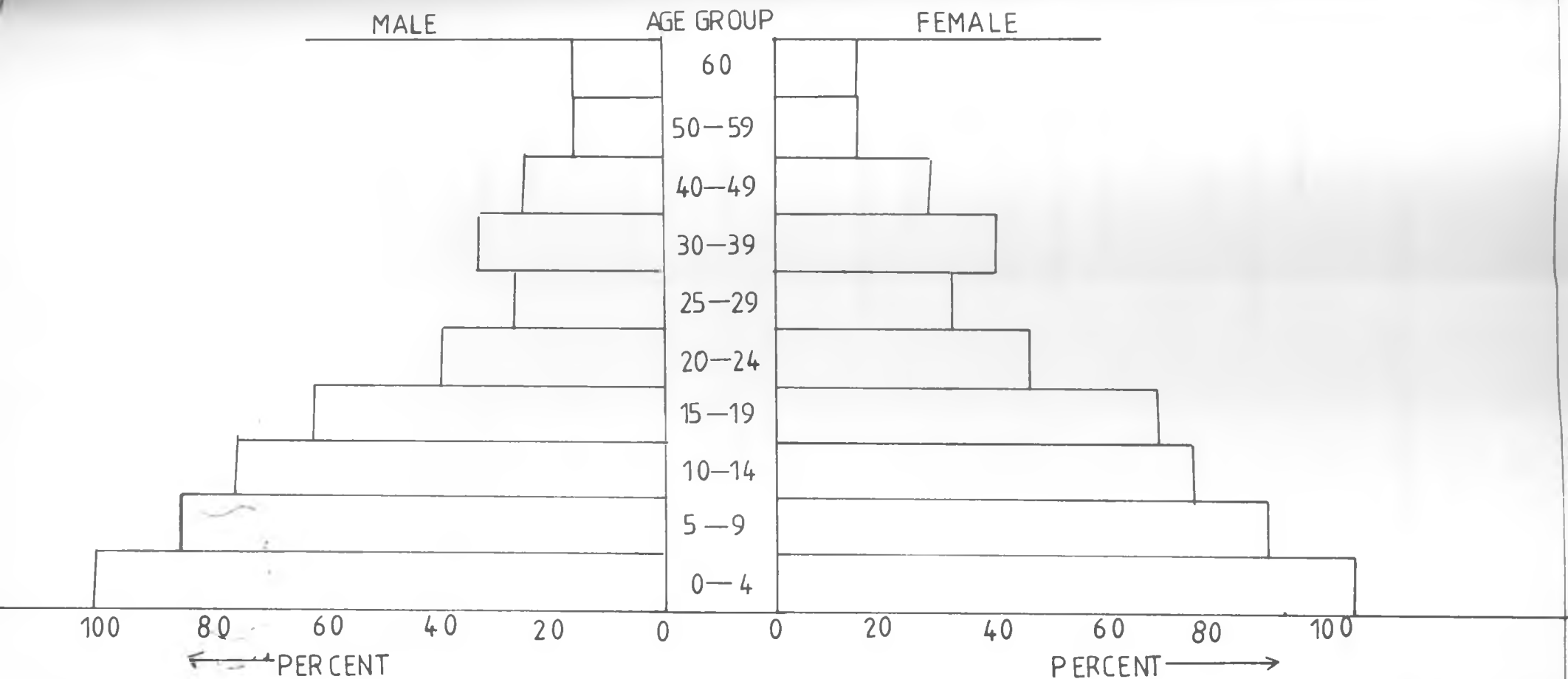


KISII DISTRICT

POPULATION PYRAMID
1969

MUMBO · C · G
D U R P
UNIVERSITY OF NAIROBI
M · A T H E S I S

MAP N O



KISII DISTRICT

POPULATION PYRAMID
1979

MUMBO · C · G
D U R P
UNIVERSITY OF NAIROBI
M A THESIS

Inventory of establishments at Keroka

	<u>No.</u>
Hardwares	6
Furniture workshops	8
Posho mills	4
Laundry	2
Health centre	1
Private hospital	1
Private clinics	4
Banks	2
Post Office	1
Cooperative Union	1
Bars	9
Hotels	12
Butcheries	8
Groceries	2
Petrol station	1
Studios	3
Bookshops	3
Music stores	3
Chemist	1
Slaughter houses	2
Bus parks	2
Storey buildings	5
Market with stalls	1

Source: Field Survey.

Inventory of Establishments at Kebirigo

	<u>No.</u>
Hardwares	2
Posho mills	4
Laundry	1
Dispensary	1
Private clinics	2
Banks	2
Post Office	1
Bars	5
Hotels	5
Butcheries	3
Petrol Station	1
Studios	1
Bookshops	2
Music store	1
Garages	4
Bus park	1
Open market	1

Source: Field Survey.

SOCIO-ECONOMIC HOUSEHOLD QUESTIONNAIRE

1. Name of the Area? -----
2. Respondent's Sex? (i) Male ----- (ii) Female -----
3. Size of household?
Males ----- Females -----
Children ----- Adults -----

HOUSING:

4. Building Materials?
(a) Walls -----
(b) Roof -----
(c) Floor -----
5. Ownership of the house?
(i) Rented ----- (ii) Owner occupied -----
(iii) Staff ----- (iv) Others (specify) -----
6. Occupation of the respondent? -----
7. Place of work of the members of the household? -----
(i) Tea factory -----
(ii) Town/centre -----
(iii) Others (specify) -----
8. When did you start working ? -----
9. What was your occupation before the present one? -----

10. Are you provided with the following service?

- (i) Water supply ----- (ii) Electricity -----
(iii) Sewage ----- (iv) Refuse collection -----
(v) Housing ----- (vi) Others (specify) -----

11. Who provides these services?

- (i) Factory Management -----
(ii) County/urban Council -----
(iii) Others (specify) -----

12. Had you these services before the establishment of
of the factory -----

13. Where do you go for the following?

- (a) Shopping -----
(b) Nursery and Primary School -----
(c) Recreation and entertainment -----

14. Were there many shops before the establishment of
factory -----

15. Do you think the establishment of the factory has
increased the rate of activities in the centre -----

16. What activities were you conducting before the
establishment of the factory? -----

17. Sewage Disposal (a) Septic tank -----
 (b) Pit latrine -----
 (c) Water borne -----
 (d) None -----

18. Water supply? (a) Rain water -----
 (b) Piped Communal -----
 (c) Well/stream -----
 (d) Piped to -----

19. Do you have electricity in your house? -----
 if Yes when was it connected -----

20. TRANSPORT

Models

Matatus -----

Buses -----

Private Car -----

Foot -----

Others (specify) -----

21. How long have you stayed here? -----
 (i) More than 5 years -----
 (ii) Between 2 - 5 years -----
 (iii) Less than 2 years -----

22. What problems do you experience with the establishment of the factory) -----

23. Expenditure (Kshs) (i) Food -----
(ii) Clothing -----
(iii) Education -----
(iv) Housing -----
(v) Travelling -----
(vi) Other (specify) -----
24. Do you have other sources of income? -----
If Yes (specify) -----
25. How much do you save? -----
(a) 0 - 199
(b) 200 - 499
(c) 500 - 999
(d) Over 1,000
27. What is your total income per month?
0 - 499
500 - 999
1000 - 1499
1500 - 1999
Over 2,000

COMMERCIAL QUESTIONNAIRE

1. Name of the centre -----
2. When did you start business (Year) -----
3. Which type of business are you conducting -----
4. What other business do you have here -----
5. Is the building years ----- If No how much do
you pay rent per month (Kshs.) -----
6. Which type of business did you start with:
(i) Retail ----- (iv) Hotel -----
(ii) Wholesale ----- (v) Housing -----
(iii) Butchery ----- (vi) Others (specify) -----
7. Were you running the business before the establishment
of the factory ----- If Yes, how much were you
getting:
(a) Per day -----
(b) Per month -----
(c) Per year -----
8. How do you compare the volume of sales before
and after the establishment of the factory -----

9. Number of employees before establishment of the
factory ----- and No. after the factory -----

10. What changes have you noticed with the coming of the factory?

(i) Increases in stock -----

(ii) Increase in the number of customer -----

(iii) Others (specify) -----

11. What advantages do you get from locating your business here -----

12. What problems do you experience from your business location here -----

13. Where do you stay?

(a) Behind the shop -----

(b) Rented house -----

(c) Others (specify) -----

14. What is your general opinion and problems about the location of the factory here -----

15. What is the average income do you get per month from your business? (Kshs.) -----

(a) 0 - 1999

(b) 2000 - 3999

(c) 4000 - 5999

(d) Over 6000

16. Did you get more income before or after the establishment of the factory -----
