

CONSTRAINTS TO AGRICULTURAL  
DEVELOPMENT AND THEIR IMPLICATIONS  
TO RURAL PLANNING: .A CASE STUDY  
OF MBITA DIVISION, SOUTH NYANZA  
DISTRICT, KENYA.

BY

AKUNGO B.D.O. B.A. (HONS) NAIROBI.

A THESIS SUBMITTED IN PART  
FULFILMENT FOR THE DEGREE  
OF MASTER OF ARTS (PLANNING)  
IN THE UNIVERSITY OF NAIROBI.

JUNE 1980.

NAIROBI, KENYA.

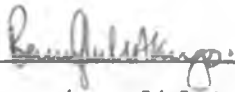


UNIVERSITY OF NAIROBI  
LIBRARY

## D E C L A R A T I O N

"This Thesis is my original work and has not been presented for a degree in any other University"

Signed



---

(candidate)

"This Thesis has been submitted for examination with my approval as University Supervisor".

Signed

---

(Supervisor)

ABSTRACT

This study was prompted by the low level of agricultural production and development in Mbita Division in South Nyanza District. The average net farm income in the division is only about KShs.1,545 per annum. This level of income is low and inadequate to cater for the basic needs of food, shelter and clothing especially given that the average family size is 7.

This study therefore set to examine the causes of the low agricultural production and development in the division with the aim of suggesting and finding alternative ways through which agricultural production could be increased. It also set to examine the effectiveness of District Development Planning in rural agricultural development.

The study has identified several problems to agriculture in the division. The problems are of economic, social and physical nature. Some of the problems identified are the inadequacy of transportation facilities, lack of farming skills and the poor nature of soils in some areas of the division. The District Development Planning has been found to be less effective in effecting planning for agricultural development. Some of the causes of the weakness are the inadequacy of technical personnel, inadequacy of development funds and the weak organisational structure especially in relation to the locational and sub-locational development organisations.

A resolution of all the above problems is necessary and would lead to increased agricultural production and overall development of the division. This study therefore recommends that the conditions of the roads in the division be improved and more extension services be availed to the farmers. For Rusinga and Mfangano islands where the soils are poor and cannot sustain increased agricultural production this study recommends the development of other income earning opportunities i.e. fishing and tourism. The study also makes the observation that whereas the District should remain as the basic Unit for rural planning its effectiveness should be enhanced through stronger grassroots organisations and through the training and supply of more technical personnel and increased consideration for the supply of more funds for development.

ACKNOWLEDGEMENT

I wish to thank the department of Physical Planning of the Ministry of Local Government and Urban Development of Kenya for sponsoring me to study for M.A. (Planning) Degree at the University of Nairobi.

I am also grateful to the administration of South Nyanza District for allowing me to carry out this research. In particular I would like to express my thanks to Mr. Kanjagua, the then District Agricultural Officer for South Nyanza District for assisting in data collection through providing needed agricultural information on the district. My thanks are also expressed to Mr. Kibet, the Assistant Agricultural Officer for Mbita Division who was instrumental in helping to gather most of the data used in this study. Mr. Oigara, the District Development Officer provided some insight into the practical operation of District Development Planning and I am gratefully thankful to him.

I would like to thank all members of staff of the Department of Urban and Regional Planning whose contributions and guidance during my training greatly helped to develop my planning knowledge. In particular I would like to thank Mr. D. Kabagambe, a lecturer in the department and my supervisor, whose wider insight and advice on the study made the completion of this work possible. All errors and weaknesses of this study, however, remain my responsibility.

I sincerely thank Mrs. Alice Mwangi and Miss. Lucy Wangugi for typing this thesis. Finally my gratitude goes to Apondi, my wife and Akinyi Nyarkano for their co-operation and understanding during my period of study. This thesis is dedicated to Awour Lorraine, my daughter and first born.

UNIVERSITY OF NAIROBI

AKUNGO B.D.O.

JUNE 1980.

C O N T E N T SPAGE

Title of thesis	(i)
Declaration	(ii)
Abstract	(iii)
Acknowledgements	(v)
Table of contents	(vii)
List of tables	(xii)
List of charts	(xiv)
List of figures	(xv)
List of plates	(xvi)
List of maps	(xvii)
Study organisation	(xviii)

CHAPTER 1

1:0	INTRODUCTION	1
1:0	Problem statement	2
1:2	Significance of problem	3
1:3	Objectives	3
1:4	Scope	4
1:5	Study area	5
1:6	Assumptions	6
1:7	Methodology	7
1:8	Limitations	9

	<u>CHAPTER 2</u>	<u>PAGE</u>
2:0	RURAL AND AGRICULTURAL DEVELOPMENT OBJECTIVES IN KENYA.	11
2:1	Rural development	11
2:2	Government objectives in rural development.	12
2:3	Government objectives in rural agricultural development.	14
2:4	The role of agriculture in rural development.	15
2:5	Transport, physical factors and development.	17
2:6	Transport and agricultural development.	19
2:7	The structure of rural planning in Kenya.	21
2:8	The role of District Development Planning in rural agricultural development.	23
	<u>CHAPTER 3</u>	
3:0	BACKGROUND OF STUDY AREA.	28
3:1	Location	28
3:2	Geology	28
3:4	Relief and Drainage	30
3:4:1	Relief	32
3:4:2	Drainage	32
3:4:2:1	Surface water	33
3:4:2:2	Ground water	33
3:5	Climate	35
3:5:1	Rainfall	35
3:5:1:1	Rainfall reliability	36
3:5:1:2	Mean monthly rainfall and diurnal variation.	37
3:5:2	Temperatures	41
3:6	Vegetation	41
3:7	Population characteristics.	42
3:7:1	Size and distribution	42
3:7:2	Growth rate.	43



3:7:3	Migration, Fertility and Mortality.	43
3:7:4	Population projections.	45
3:8	Land	46
3:8:1	Tenure system	46
3:8:2	Land carrying capacity.	50
3:8:3	Land potentiality	52
3:9	Existing agricultural situation.	52
3:9:1	Crops.	52
3:9:2	Livestock.	56
3:10	Other sources of income	58
3:10:1	Fishing	58
3:10:2	Trading and permanent employment.	60

CHAPTER 4

4:0	FIELD FINDINGS AND ANALYSIS.	63
4:1	Respondents	63
4:2	Agricultural activities.	65
4:2:1	Crops	65
4:2:2	Livestock	71
4:3	The problems identified	72
4:3:1	Transportation	79
4:3:1	Transport and incomes	81
4:3:2	Physical factors	83
4:3:2:1	Topography	84
4:3:2:2	Soils	85
4:3:3	Rainfall	86
4:3:4	Marketing	86
4:3:5	Low level of education and lack of skills.	89
4:3:6	Inadequacy of extension services.	92
4:4	Other related factors to agricultural development.	94
4:4:1	Rural industrialisation	95

	<u>PAGE</u>	
4:4:2	Water	96
4:4:3	Health	98
4:4:4	Education	100
4:4:5	Energy	102
4:4:6	Housing	103
4:4:7	Summary	103

## CHAPTER 5

5:0	CONSTRAINTS, THEIR IMPLICATIONS TO RURAL PLANNING AND STRATEGIES FOR OVERCOMING THEM.	106
5:1	Implications of the constraints to rural planning.	106
5:1:1	Social implications	106
5:1:2	Economic implications	107
5:1:3	Organisational implications	108
5:2	Problems of District development planning organisation and process.	109
5:2:1	Historical	109
5:2:2	Organisation	110
5:2:3	Personnel	113
5:2:4	Finance	113
5:3	Strategies for overcoming the constraints.	115
5:3:1	Transportation	116
5:3:2/	Physical factors	120
5:3:3.	Low rainfall	122
5:3:4	Marketing	123
5:3:5	Low level of education and lack of skills.	125
5:3:6	Inadequacy of extension services	128
5:4	Summary.	128

CHAPTER 6

6:0	SUMMARY AND CONCLUSION	131
6:1	The problem	131
6:2	Objectives	131
6:3	Major research findings	132
6:4	Recommendations	133
6:4:1	Transportation	133
6:4:2	Physical factors	135
6:4:3	Low level of education and lack of skills.	136
6:4:4	The District Development Planning	137
6:5	Future research areas	137
6:6	Conclusion	138
	References	140
	Bibliography	143
	Appendix	-

<u>LIST OF TABLES</u>	<u>PAGE</u>
1. Rainfall for different stations in Mbita division 1978.	38
2. Rainfall for different stations in Mbita division 1976.	39
3. Population , size and densities	42
4. Crops	53
5. Area under each crop.	53
6. Sale of cash crops.	55
7. South Nyanza district est. livestock population (1,000 heads 1970)	56
8. Fishing as a source of income.	59
9. Other sources of income.	60
10. Respondents' number, sex and percentage.	63
11. Respondents' age distribution.	64
12. Crops, number growing and percentage of total respondents.	65
13. Cash crop combinations.	66
14. Subsistence crop combinations.	67
15. Period and main farm activities in a year.	67
16. Marketed farm products.	68
17. Marketing places.	69
18. Means of transport used.	70
19. Livestock farming.	71
20. Livestock combinations.	72
21. Sale of livestock products.	72
22. Number and percentage of farmers for each problem as first priority.	73

<u>LIST OF TABLES</u>	<u>PAGE</u>
23. Total response of farmers on each problem.	74
24. Transport and incomes.	82
25. Marketing and incomes.	88
26. Level of education of farmers.	90
27. Farming methods used.	92
28. Regularity of extension services.	94

<u>LIST OF CHARTS</u>	<u>PAGE</u>
I Planning information flow chart.	24
II Structure of the Ministry of agriculture.	25
III Sources of income.	61
(IV) Problem magnitude by farmers' responses.	77
V Constraints, Area of occurrence , Proposals and Plan period.	130

LIST OF FIGURES

	<u>PAGE</u>
1. Mean monthly rainfall.	40
2. Number of farmers for each problem as first priority.	75
3. Percentage of farmers for each problem as first priority.	76
4. Total response of farmers on each problem.	78
5. Farmer's level of education.	91

LIST OF PLATES

	<u>PAGE</u>
1. Maize growing for subsistence and cash incomes.	62
2. Cattle, goats and sheep as main livestock kept.	62
3. A section of the C19 Mbita-Homa Bay road.	105
4. Part of the Gwasi hills.	105



LIST OF MAPS

1. Mbita division in National context.
2. Mbita division in the context of South Nyanza district.
3. Major soil types.
4. Physical features.
5. Mean annual rainfall.
6. Ecological zones.
7. Population distribution.
8. Population density.
9. Land potential.
10. Major crop areas.
11. Existing crop and livestock distribution.
12. Existing road network.
13. Constraints.
14. Potential.
15. Proposals.

## Study organisation

This study is organised in six chapters.

The first chapter deals with the introduction to the study. It covers the statement and significance of the problem to be examined. It also covers the study objectives, scope and limitations, area of study, study assumptions, methodology and field research limitations.

In chapter two this study covers the development objectives and policies in agricultural and overall development of the rural areas. In this endeavour, the structure, organisation, process and role of District Development Planning in rural agricultural development is outlined. Its effectiveness in affecting agricultural development in the division is however analysed in chapter 5.

Chapter three is on the physical, social and economic background of the division. It covers the location, geology, soils, relief and drainage, climate, vegetation, population, land and the existing agricultural situation in the area.

In chapter four, the major field and research findings are presented. The findings are interpreted in the light of the problem this study examines.

Chapter five examines the relationships and implications of the identified agricultural constraints to the District Development Planning organisation and process.

The major problems of this organisation are analysed and lastly strategies for overcoming the constraints are suggested.

Chapter six summarises the study problem; objectives; major research findings and recommendations. Out of field observations the author points out some possible future agricultural research areas in the division. Lastly the study is concluded.

## C H A P T E R 1

### 1:0 INTRODUCTION

The majority of the population in Kenya (about 90%) lives in the rural areas. In Kenya and indeed in many of the developing countries, the most important economic activity in the rural areas and on which the rural people basically depend for their livelihood is agriculture. The development of the agricultural sector is therefore a major concern of the governments in these countries because by developing agriculture they are both tackling a major source of income and at the same time catering for the interests of the majority of the population.

In Kenya the importance of developing the rural areas but in particular the agricultural sector was realized soon after independence. This awareness was brought about by the neglect to which the colonial government had subjected the rural small-scale farming communities. The need to develop the rural areas led to The Kericho Conference on Education, Employment and Rural Development in 1966, which further recommended that the government should focus more attention on the development of the rural areas. Since 1966, the development of the agricultural sector as a strategy for enhancing rural development has been emphasized in successive Development Plans.

In the current 1979/83 Development Plan, Kenya's overall and ultimate objective in development activity is stated to be "the alleviation of poverty"<sup>1</sup>. This implies not only focussing development initiatives on areas where poverty is more prevalent like in the rural areas but also focussing on the major economic activity in such areas and in the case of rural areas

focussing on agriculture. The point therefore is that the development of agriculture is of prime importance to rural development and the national objective of alleviation of poverty.

There are, however, some constraints to the achievement of the objective of alleviation of poverty. The constraints include such factors as lack of skills; financial problems; inadequacy of marketing facilities- inadequacy or lack of transport facilities, technological issues and ecological and physical factors. These constraints vary in their occurrence and magnitude from one rural area to another. The important point, therefore, is that in order for agricultural development to be enhanced and incomes raised in the attempt to alleviate poverty, such constraints must be overcome where they exist. This is the gap the study intends to fill in the area under study.

### 1.1 Problem Statement

The main reason behind the choice of this study is the low level of agricultural production and development in the study area. According to the 1974/78 District Agricultural plan for South Nyanza, the average net farm income is about KShs.1664 per annum. This income is itself low and since this figure is just an average, it is certain that some areas within the district have lower net farm incomes per annum. Infact the field findings reveal that the average net farm income for Mbita Division is about KShs.1545 which is below the district average net farm income per annum. This level of income per annum is not adequate considering the various needs to be satisfied i.e. such basic needs like food shelter and clothing not to mention paying of school fees for post-primary school children.

This problem is compounded by the fact that the average family size in the division is 7. The low incomes and the large number of needs to be satisfied means that the standard of living in the area is also low. In order to rectify this situation, there is need to increase agricultural production especially cash crop production so that incomes could be raised. This study, therefore, attempts to suggest ways through which agricultural production in the division could be raised in order to increase the level of incomes.

### 1:2 Significance of the Problem:

The significance of the problem arises from the fact that agriculture forms the major source of incomes in the division. Low agricultural production leads to low level of incomes which in turn leads to low standard of living. Since raising the standard of living is the overall aim of all human social, economic and political activities, the development of agriculture to achieve this aim is of paramount importance. The development of agriculture in turn depends on overcoming the factors that hinder progress in this field and this is one of the roles of planning.

### 1:3 Objectives:

The main objectives of this study are:-

- (a) To identify the main constraints to agricultural production and development in Mbita Division.
- (b) To examine the relationship and implications of the identified constraints to the District Development planning organisation and process.
- (c) To suggest planning strategies for overcoming the constraints with the aim of improving agricultural production in the division.

(d) To make recommendations for ensuring sustained agricultural and overall development of the division.

(e) To summarise and conclude the study.

#### 1:4 Scope of Study:

The focus of this study is the examination and identification of the main constraints or problems to agriculture in Mbita Division. To overcome any constraints and effect agricultural development, it is important that the District Development Planning organisation takes an active role in planning through supply of the required development resources. It is for this reason that this study relates the identified problems to the District Development planning process in order to discern what particular roles this organisation can play in the task of developing agricultural resources in the division. As a result, it is important to point out that whereas District Development planning organisation is supposed to plan for the overall development of the rural areas; this study concentrates only on the roles of this organisation in the agricultural sector.

In connection with the foregoing, it is necessary to mention that the division as a study area was chosen with the structural planning process approach in Kenya in mind. In Kenya, rural planning starts at the District level and is supposed to descend to the divisional, locational and sub-locational levels. This hierarchy is meant to ensure local participation in the planning process through the contribution of resources i.e. labour and the assessment of development priorities and needs. The division was chosen to ensure

correlation of the extent to which this structure is effective as far as the participation of local residents in the planning process is concerned. The district level, the author felt was a bit detached from the people while the locational and sub-locational levels were too low and small for effective analysis.

In line with the above, the study approaches the subject matter from a planning, rather than from an agriculturalist's point of view. The emphasis is therefore, on providing a spatial framework for the solution to the constraints with the aid of such planning tools as maps, graphs and tables. Lastly, in the achievement of the objectives of this study, it is organised in six chapters as outlined on page (xviii).

#### 1:5 Study Area:

Two of the factors which prompted the choice of Mbita division as a study area have been touched above. They are:-

- (a) The low level of agricultural production and development in the area.
- (b) The need to examine and provide solutions to agricultural problems within the structural planning process approach which would ensure a more realistic strategy for overcoming the constraints.

One may, however, argue that the situation of low incomes is a problem all over the district and that other divisions are also planning sub-units of rural



development; which factors could not have made Mbita division the obvious choice. To such an argument, the answer is that Mbita division presented certain characteristics which influenced its choice. Such characteristics include the poor soils, especially on the two Islands of Rusinga and Mfangano and their geographical location in relation to the mainland. (See Maps No.s 1 and 2). With regard to transportation, the division is one of the most poorly served in the district. These characteristics, the author felt, influenced agricultural production and development. Consequently, they formed some of the study assumptions.

The division covers an area of about 1051 sq.km. and is the fifth largest of the 8 divisions of the district. According to the 1979 Kenya Population Census, the area had a population of about 83,863 people and a density of about 79 persons per square kilometre. It was the sixth most populated division in the district.

#### 1:6 Assumptions:

The assumptions of the study are:

(a) That transport is a constraint and one of the factors retarding agricultural development in the division.

(b) That physical factors (Topography and Soils) are constraints and some of the causes of the low agricultural production in the division.

(c) That the attempt at overcoming the identified constraints could be meaningfully approached through the District Development Planning Strategy.

- (d) That overcoming the transportation and physical constraints could lead to increased agricultural production and development and thereby to increased incomes from farm produce.

### 1:7 Methodology

The broad approach used in this study has three phases. The first phase is that of data collection. The second is that of data analysis and lastly the interpretation of the findings in the light of the subject matter.

Data collection involved gathering two types of data. These were the secondary and the primary data. Secondary data was collected from existing sources of information regarding the study subject matter. These sources of information included materials from publications on rural agricultural development. (see bibliography) They also included materials from government documents i.e. successive Kenya development plans from 1966/70-1979/83, the district development plan for South Nyanza district 1974/78 and the district annual agricultural reports for South Nyanza district from 1970-78. After this initial preparation, field data collection began.

Field data collection took three months from July to the end of September 1979. Two weeks of this period were spent in verbal interviews with government officers both at the district and the divisional levels. In particular some of the officers interviewed included the District Agricultural Officer and his divisional counterpart; the District Development Officer; the District Community Development Officer and the District Officer (D.O) for Mbita division. Four chiefs were also interviewed partly because they were also farmers.

After the above described exercise, the actual field survey started. Two methods of data collection were used. The first was participant observation. The second was the interview of farmers through the questionnaire method. A sample of 120 farmers was set for interviewing. This represented 2% of the total number of farmers in the division. The total number of farmers was calculated on the basis that according to the 1969 population census the area had a population of 54,645 people and an average family size of 7. This gave a total of 7,806 families in the whole division. This figure represented the total number of farmers since it was assumed that each family has a plot of land at least for subsistence production, the division being a small-scale farming area.

Of the 120 sampled farmers, 20 were to be interviewed in each of the six locations of the division. Within the locations, the farmers to be interviewed were further sampled according to the number of sub-locations in each location such that each sub-location had an equal representation. Thus Gembe; Kaksingri and Lambwa which have two sub-locations each had a representation of 10 farmers in each sub-location. Rusiga and Mfangano which have three sub-locations each had a representation of 6 farmers in each sub-location. Gwasi which has four sub-locations had a representation of 5 farmers in each sub-location making a total of 20 farmers originally allotted to each location.

Due to transportation problems, however; farmers sampled for 4 sub-locations were not reached. Thus only a total of 94 farmers were actually reached and interviewed.

*Penetration*  
The collected field data was then analysed manually through the use of a hand calculator. Other data analysis methods used included tables; charts; graphs and cross-tabulation method.

All the major field and other research findings were then interpreted in the light of the subject matter of study.

### 1:8 Limitations

The study experienced certain difficulties with regard to some information which was sought especially at the divisional headquarters. In particular, and notwithstanding the fact that the division is predominantly a subsistence farming area, there were no records regarding the level of production of the few available cash crops like cotton; groundnuts and sunflower over the previous years. Similarly the number of farmers growing these cash crops was not available. The study had therefore to rely on the information from the collected field data. The information on the level of production in the previous years especially of the cash crops, was sought because it was important to know whether the production was increasing, constant or declining as years passed. The likely causes of such variations if they were available could have enhanced the progress of the research and even the success of the study.

The other problem associated with the above one is that figures on average farm incomes per annum were not available in the divisional agricultural records. This is because the area is predominantly a subsistence-farming area and such figures are normally difficult to calculate or estimate. The study therefore had to rely on the field data for this information.

Thirdly, as indicated in the methodology section, the research was carried out from July to September 1979. These were months preceeding the November 1979 General elections in Kenya. It was inevitable that the research had to be carried out during this time since this was the only time available to the author to conduct such a research. Due to elections fever and fears some respondents were suspicious about the intentions of the author and were reluctant to give some information. This was particularly true with regard to information relating to farmers' opinion on their participation in development committees such as the locational and the divisional committees and the effectiveness of such committees in enhancing development. On the above mentioned question even some government officials were also reluctant to give their opinions. Some officials, had election fears just like some farmers while others thought such kind of information was confidential and a government officer should not talk them on non-official business.

Lastly, the author admits that the time and finances initially allocated to the research proved to be inadequate. Time limited the research in the sense that not many places in the division could be visited and this was made worse by the fact that there is no means of transport to some places. This in turn limited the amount of information which could be collected. An attempt has, however, been made to fill such gaps in information through the employment of average measures in indicating the agricultural situations in such areas.

C H A P T E R 2

2:0 RURAL AND AGRICULTURAL DEVELOPMENT OBJECTIVES  
IN KENYA

In this chapter the study reviews government objectives and policies in agricultural and overall rural development. Since this study focuses more attention on transportation as a critical factor to agricultural development in the study area, a brief review of the role of transportation in agricultural and general development is covered. Finally the structure and process of rural planning is covered.

2:1 Rural Development

Rural development can be defined as a process of change which aims at improving the standard of living of the rural people. This process involves the mobilisation and utilisation of local resources for the welfare of the people. In order to improve the standard of living of the rural people; rural development aims at increasing the incomes or the purchasing power of the rural population, the creation of more employment opportunities for the increasing population; the provision of essential services such as health facilities, water; power and educational facilities.

In all these development initiatives, the participation of the local people is sought and encouraged in order to enhance the assessment of development needs and priorities.

Thus rural development is an overall process of change in the economic, social and political sub-systems of rural life, the broad aim of which is to improve the general conditions of living.

## 2:2 Government Objectives in Rural Development

Since 1966 the Kenya Government has emphasized the importance of developing the rural areas in all successive development plans.. The Special Rural Development Programme (S.R.D.P.) which was set up in six divisions of the Republic i.e. in Vihiga, Migori, Tetu, Mbere, West Pokot and South Kwale divisions, is an example of the government's efforts in the attempt to develop the rural areas. The S.R.D.P. has not been successful in all its programmes, having been beset by such problems as lack of personnel, finance and material inputs. The important point, however, is that by undertaking such a huge experimental programme, the government has demonstrated its commitment to the development of the rural areas, since the (S.R.D.P.) was an Integrated Rural Development Programme Approach.

Apart from the S.R.D.P. the government has also expanded health, education and water facilities to the rural areas because these are essential services for development. Thus basically the government's approach to national development has been re-oriented to focus on the rural areas where about 90% of the population in the country live.

In the current 1979/83 Development Plan the government's objectives in rural development are stated as follows:-

- (a) "The creation of employment to the increasing rural population.
- (b) Dispersion of industries and development of non-farm activities in the informal sector (about 40% of small-holder income comes from these activities which are also labour-intensive).

- (c) Research and building development institutions to find appropriate inexpensive technologies.
- (d) Through the development of the rural areas it is hoped that rural-urban migration will be arrested since many people will find paid; casual or wage employment in these areas."<sup>2</sup>

The components of policies strategy guiding the government's objectives in rural development are stated to be:-

- (a) "Increased rural production and income.
- (b) Increased equity in the distribution of this income.
- (c) Increased access to services.
- (d) Increased participation and decision-making at the district level."<sup>3</sup>

▶ The above are the government's objectives and policies in rural development. The point to be noted here is that all the objectives are based on the assumption that agriculture will continue to play an increasing role in their achievement. This is why the development of agriculture is crucial for rural development. However, it is stated that rural industrialisation will go hand and hand with agriculture towards the achievement of the objectives. Whereas, the author is not opposed to rural industrialisation, the feeling is that rural industrialisation will take a long time to be effective in helping to raise rural incomes and solve the rural problems. This is particularly true when consideration is given to the scarcity of resources especially the financial resources and technical expertise not only in



the rural areas but in the national as a whole. It is in the light of these shortages that agriculture will continue to provide most of the rural incomes and therefore its maximum development is imperative to both industrialisation and rural development in general. It is for the above reasons that this study examines ways through which agriculture could be more developed in the study area; that is Mbita Division of South Nyanza District.

### 2:3 Government Objectives in Rural Agricultural Development.

Although the general objectives in rural development have been stated above, it is imperative that we spell out clearly the specific government objectives in rural agricultural development. This necessity does not only arise from the importance of agriculture in rural development but it is also indispensable because the very subject matter of this study is on agriculture.

About 85% of the population in Kenya depend on primary production for their livelihood and the majority if not all of them are in the rural areas where primary production activities is predominant. The government objectives in rural agricultural development are stated to be:-

- (a) "To ensure better land use.
- (b) Provide essential services; credit extension, inputs, markets and transport to small-scale farmers.

- (c) Construct rural access roads to expand flow of farm inputs, extension services and credit, market accessibility, water and power.
- (d) To identify and encourage inexpensive appropriate technologies for the enhancement of small farm productivity."<sup>4</sup>

The above objectives if fulfilled would indeed go along way in enhancing rural agricultural development. The question, however, is not on their validity but rather the issue is to what extent the government is able to achieve them. This brings in the issue of resources for the implementation of the objectives. Thus one of the study aims is to examine to what extent the government through its District Development Planning Strategy is able to avail resources for the achievement of these objectives with reference to the study area.

#### 2:4 The Role of Agriculture in Rural Development

It has been emphasized that agriculture forms the backbone of the rural economy. As a result, it has a major role to play not only in rural development but even in the overall National objective of economic growth and development. This also implies that there are no clear-cut roles of agriculture in the rural areas/as opposed to those in a National Context.

However, the major roles of agriculture in rural and national development are:-

- (a) To provide food to the rural populace, This is important in giving nutritional ingredients which are important for good health.

- (b) The provision of income earning opportunities through the growth and sale of farm produce. This goes along way in helping to 'alleviate' poverty, which is a central theme in Kenya's current development plan.
- (c) Agricultural growth i.e. higher production and improved marketing efficiency may lead to the improvement of the balance of payments especially with regard to exported cash crops. This is important in a national context.
- (d) Agriculture also provides raw materials for industrial processes i.e. cotton fibres for cloth-making.
- (e) Agriculture also provides food to those in the non-agricultural sectors of the economy whether in rural or national context.

Overall therefore, agriculture has a major role to play not only in rural development but also in National development. Here again the question is not over the importance of these roles in development but rather the issue is over the ability of the government and the people of Mbita Division to develop agriculture to effectively play the above outlined roles. Thus the study addresses itself to finding ways and means through which agriculture could be more developed in order to play the above roles effectively.

## 2:5 Transport, Physical Factors and Development

In the introduction to this chapter it was stated that this study focuses more attention on transportation as a critical factor to agricultural development in the study area. It would therefore serve to review the role of transport in development and later on to look at its specific roles in agricultural development. This will serve to show the extent to which transport is playing its role in development but more so in agricultural development in the study area.

Transport and physical factors are closely related in the sense that the pattern and network of transport is to a very large extent determined or influenced by physical factors such as lakes, rivers, mountains, valleys, hills and plains. In places where man's technological advancement has not overcome these physical factors, means of transport becomes difficult and this has negative effects on the economic, social and political activities which might take place. As may be read from chapter 5 on physical constraints, transport in the area of study is affected by the presence of hills in some places and also by the presence of the lake (Victoria). This is the essence of the inclusion of physical factors in this review.

Transport plays a major role in development and for any rural area or any region's development to be enhanced, the transport network must be improved and developed. The objectives of a rural or regional transport system are:-

- (a) To link various places and parts of a region i.e. to facilitate accessibility.

- (b) To facilitate the movement of goods, services and persons within the region.

These are the primary objectives of a transportation system. Any transportation system which does not serve the above objectives is considered inadequate. It is against this background that the adequacy or not of the transport system in the area of study will be judged.

Other secondary objectives of a transportation system are:-

- (c) To promote the development, growth and distribution of economic activities within various areas of the region.
- (d) To provide the cheapest, efficient and safe means of movement for the community.
- (e) To provide in a co-ordinated manner, special services and accessibility to strategic areas and points of activities. and
- (f) To enhance mobility and contact by the community for purposes of economic interests, avoiding cultural and community isolation and facilitating governmental activities.

Basically therefore a transportation system must consider the major areas of economic activity in an area. It must also pay attention to passenger traffic and in this case the determination of routes, terminals and other environmental and recreational factors are also important. Without going into the details of these, it would suffice to point out that transport is crucial for regional or rura- economic, social and

political development. This may be discerned from the above outlined objectives of a regional or rural transport system.

For this study, however, the emphasis is not on the role of transport in development in general but we focus on the particular roles of transport in rural agricultural development. The regional coverage of the role of transport in development is therefore just a prerequisite.

#### 2:6 Transport and Agricultural Development

The roles of transport in agricultural development are:-

- (a) To provide accessibility to markets for both the purchase of farm inputs and the sale of farm produce.
- (b) To provide accessibility to extension services. In remote areas i.e. areas which are not adequately served by means of transport such services may not be available to the farmers.
- (c) Connected to the above is the fact that transport also provides access to sources of technological innovations.

In planning transportation for the agricultural sector and in line with the above roles of transport, what therefore becomes important is the consideration of the major areas of agricultural activity which form the location of farmers and the origin of goods and services to be transported. Also important for consideration are the markets which form the destinations of the goods, especially the cash crops and even the food crops.

The agricultural goods and services to be transported dictate the mode of transport to be used. There are several modes of transport. These include waterways, airways, road transport, railways; transport by use of animals such as donkeys and lastly cycle and foot transport. All these modes of transport are invariably used depending on the nature of agricultural goods and services to be transported. However, in small scale agriculture like in Mbita Division road transport and to a lesser extent animal and foot transport are the most important means of transport.

Accordingly, the inadequacy, inefficiency and lack of transport retards development of these aspects of agricultural activity. It is for the importance of these roles that this study examines how transport interfaces with physical factors in affecting agricultural activities in the study area.

A lot of literature has been written on the subject of transportation and its role in development. Alela J.E.N.<sup>5</sup> in his study on "The role of roads as a means of economic development: A case study of Kakamega District", brings out clearly that the lack of roads contributes negatively to economic development and that means of transport is crucial if the exploitation of the resources of the area of his study is to be enhanced. Thus basically in his study he conveys the point that for development to be enhanced there is need for the improvement in the means of transport. Madugha J.K.<sup>6</sup> in his study on "The role of roads in rural and regional development in East Africa", made similar observations. However, much as the author agrees with the observations made in the studies, it should be noted that these were case studies and since there are variations in different localities on the factors affecting transport and other economic activities, this study attempts to

fill this this gap in the study area. Thus the point of concern in this study is how particular transportation problems in the study area could be overcome in order to enhance the use of transport facilities in promoting agricultural development.

The study also attempts to find ways through which such problems can be overcome within the structural framework of the rural planning process. This involves analysing the role of district development planning in road development in the study area and the contribution of the local residents, particularly farmers themselves.

In connection with District Development Planning; the study done by Ocharo, A.O.<sup>7</sup> on "The role of transport systems in agricultural development: A Case Study of South Nyanza District", attempts to give some relevant points on the contribution the DDC is making towards developing the rural areas. However, it is apparent that the broad area of his study did not allow him to give an insight into some specific issues in particular areas of the district of his study. He contended that planning at the District level is effective enough if only more representation of the people could be ensured. The author, however, feels that in order for planning at the District level to be more effective, it needs a stronger organisational grassroots base to support it. These issues are taken up for further analysis in chapter five where specific study findings are cited to support the author's opinion.

## 2:7 The Structure of Rural Planning in Kenya

Since 1974, the Kenya government has decentralized its planning structure such that planning for the development of the rural areas is now vested with the District Development Committees (DDCs). These



committees are supposed to "play an increasing and central role in planning for district development, co-ordinating rural development activities and monitoring ministry programmes at the district level."<sup>8</sup> The district therefore has been identified as a viable planning unit and is now the basic operation unit for planning and implementing district development. Thus in rural agricultural development the DDC is the body charged with planning and therefore it becomes necessary to examine the role this body has played in planning for agricultural development in the area of study.

The District Development Committee (DDC) is chaired by the District Commissioner and the Secretary is the District Development Officer. The DDC has sub-committees which are the other district level committees such as the District Education Board; District Agricultural Committee and District Community Development Committee. It must be pointed out however, that these specialized committees are the ones which do the actual sectoral planning for development and (DDC) of which they are apart, simply confirms and approves the sectoral plans. Thus in the case of agricultural development it is the District Agricultural Committee which is directly responsible for planning. Its plans must however, be ratified and approved by the DDC. Thus the DDC is the overall planning body for district development.

The members of the DDC are all the district departmental heads i.e. the District Agricultural Officer, all the local members of parliament, representatives of the local councils and the District Officers (DOS) also attend this committee meetings.

Below the DDC there is the Divisional Development Committee chaired by the District Officer (D.O) and

where ministries are represented by the relevant divisional heads, where these exist. Below the division there are the locational and in few cases sub-locational Development Committees.

This hierarchy of committees is meant to ensure local representation and participation in the planning process. Through the locational and sub-locational committees, the peoples are supposed to participate in planning through giving their opinion on development needs and priorities. They are also supposed to participate in the implementation of projects and programmes through the contribution of labour and finance in some cases. How far this planning hierarchy works is analysed in chapter 5. Presently we give only its stated roles. (see charts

1 & 2)

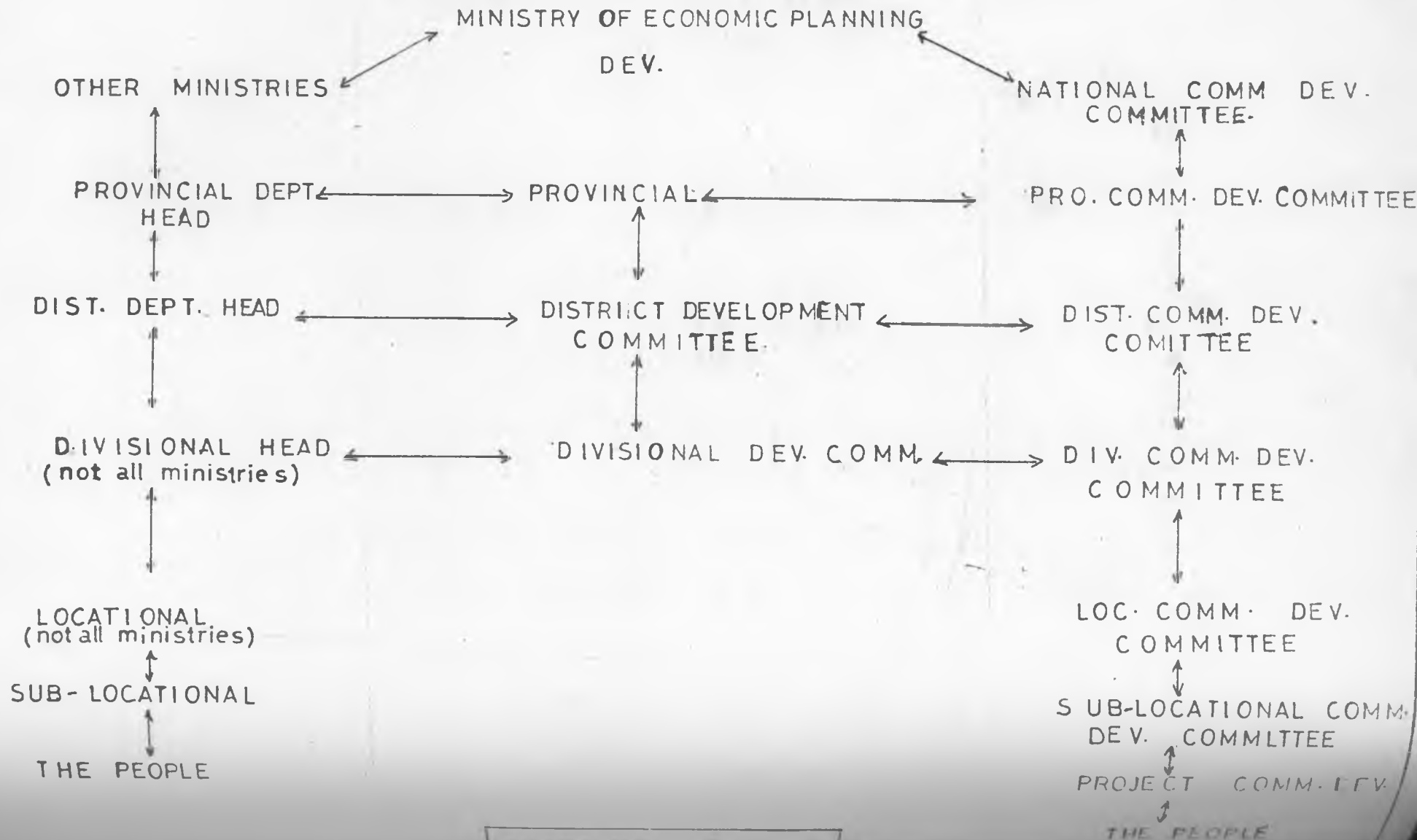
## 2:8 Role of District Development Planning in Rural Agricultural Development

The role of District Development Planning in overall development of the rural areas has been indicated above. Here we concern ourselves with the particular roles this body plays in planning for agricultural development. The District Agricultural Committee which is a sub-committee of the (DDC) is the body directly responsible for planning as has been indicated above.

Its major roles in agricultural planning are:

- (a) The provision of agricultural extension workers who would educate the farmers on the best ways of farm management and crop production.

PLANNING INFORMATION FLOW CHART



STRUCTURE OF MINISTRY OF AGRICULTURE

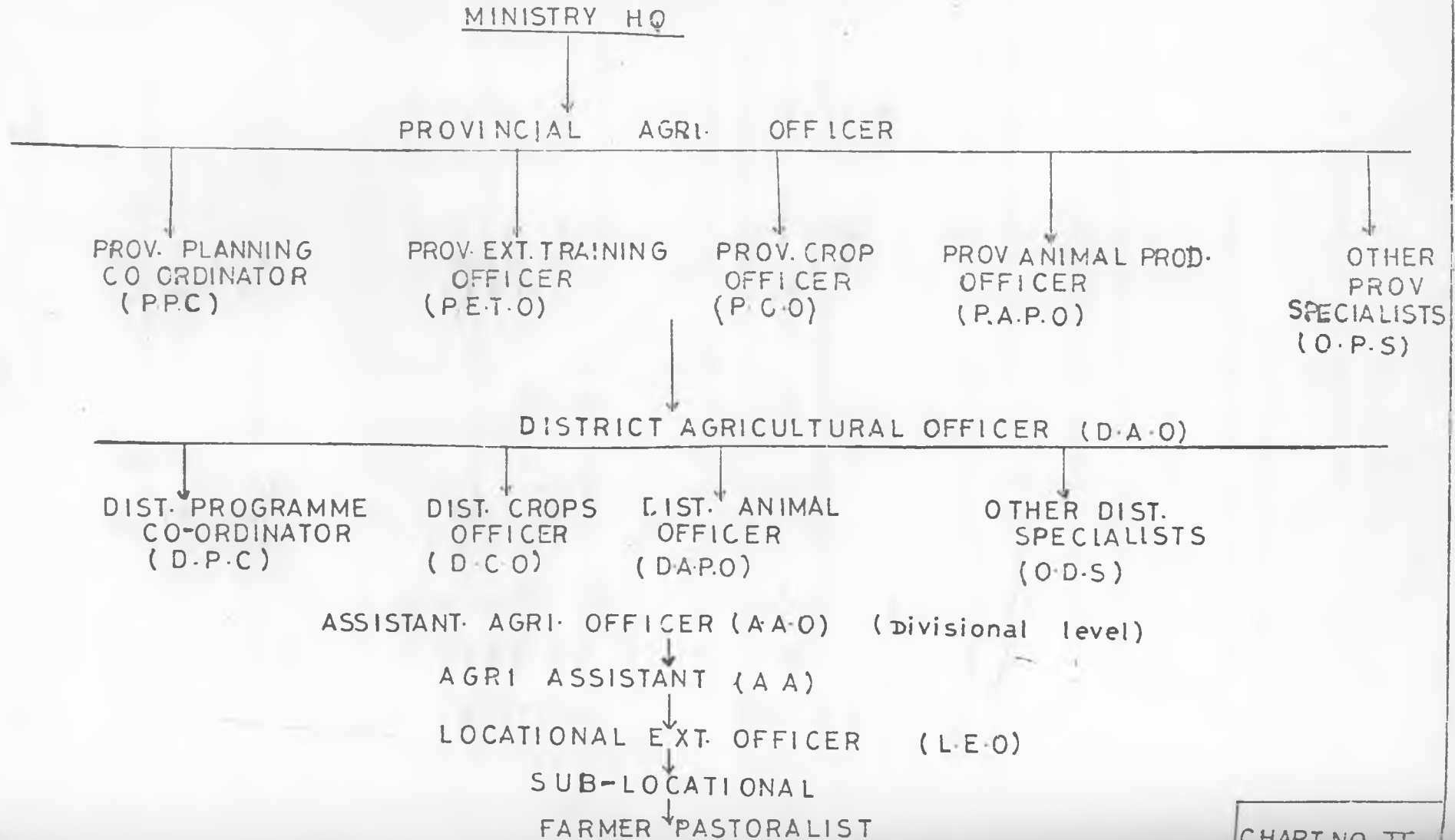


CHART NO. II

- (b) Planning for the development of marketing facilities.
- (c) The innovation of inexpensive appropriate technologies for farm produce.
- (d) Development of farmer education and training facilities.
- (e) Planning for farm credit facilities and the supply of inputs i.e. (loans and fertilizers).
- (f) The development of rural feeder and access roads.  
and
- (g) Planning Harambee and self-help agricultural projects.

In line with the above listed roles of District Development Planning in agriculture, the 1974/78 South Nyanza District Development Plan outlines the specific agricultural programmes for the district.

These are:-

- (a) The achievement of a 6.7% target growth rate of marketed production through intensified land-use.
- (b) Achieving in particular increased production of cash crops including maize plus beef and milk production.
- (c) Increasing the numbers of farmers obtaining a cash income from their land.
- (d) Promoting a greater effectiveness of the agricultural extension services. and

- (e) Procuring a more even development throughout the district.

Thus as stated above, the role of District Development Planning in agriculture is clear. The point of concern in this study is therefore to examine the extent to which the D.D.C. and its sub-committee (The Agricultural Committee) are capable of discharging the above roles given the hierarchy of the planning machinery and the fact that the people whom the plans are meant to serve are also supposed to participate in the planning process.

In the study area (Mbita Division) the role of district planning is examined and evaluated in light of the identified constraints to agricultural development and not withstanding the level of performance of the above outlined district agricultural programmes for 1974/78.

Overall therefore the purpose of the chapter was to review all the related literature to the subject matter of this study, the synthesis of which is done in chapter 5 in relation to the study findings in the division where research was done; that is Mbita Division.

## C H A P T E R 3:

### 3:0: Background of study area

This chapter covers the physical, social and economic characteristics of the area of study.

#### 3:1 Location

The division lies between longitudes  $34^{\circ}$  E to the west and  $34\frac{1}{4}^{\circ}$  E to the east. It also lies between  $0.4^{\circ}$  and  $0.8^{\circ}$  south of the equator. It lies on the western end of South Nyanza District and borders lake Victoria on the west and north, Central (Asego) division to the north-east and Ndhiwa division to the east and south. (See maps No's. 1 & 2).






#### 3:2. Geology

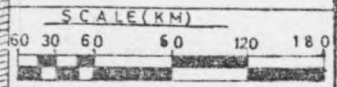
Geology, in providing the parent soil material of an area influences the character and especially the productive potential of the soils. Geology and soil types are responsible for the spatial diversity of land use and are important in agricultural production and development. Very broadly, the geological formation in the division consists of tertiary sediments, tertiary volcanics, quarternary sediments and granites.

The tertiary sediments cover the whole of Rusinga island and the eastern part of Mfangano island. They are also found in a small quantity in Gwasi location around Nyandhiwa area and also in parts of Gembe location. Tertiary sediments are usually in the coastal areas and are of marine and marine deltaic origin. The tertiary sediments in the division are of miocene age consisting mainly of shallow-water locustrine and fluvial deposits with thin limestones. The soils formed out of this rock material are not rich for agricultural purposes.



**LEGEND**

-  STUDY AREA
-  WATER SURFACES
-  RAILWAYS
-  INTERNATIONAL BOUNDARIES
-  PROVINCIAL BOUNDARIES



AKUNGO B-D-O  
M-A PLANNING II  
1979/80



MAP NO. 1





LEGEND

- STUDY AREA
- BOUNDARIES
- INTERNATIONAL
- DISTRICT
- DIVISIONAL
- LOCALATIONAL
- SUB-LOCALATIONAL
- URBAN CENTRES
- RURAL CENTRES
- MARKET CENTRES
- LOCAL CENTRES
- WATER

SCALE 1:50,000  
 AKIINGO B-2-D  
 M.A. PLANNING II  
 1979/80

MAP NO. 3

MBITA DIVISION IN THE CONTEXT OF SOUTH NYANZA DISTRICT

The tertiary volcanics are found on the western part of Mfangano island and also in parts of Gembe and Gwasi locations. Tertiary volcanics in these areas are of middle and upper tertiary age. They are mainly of alkaline type; including basalts; phonolites, nephelinites; trachytes and alkali rhyolites and their pyroclastic equivalents. Most of the volcanic effusion was by way of vents and fissures. Areas of tertiary volcanics are areas associated with the occurrence of volcanic soils which are rich for agricultural purposes. For example, the volcanic masses of Gwasi and Gembe hills have volcanic soils which characteristically are rich in agricultural production because of rich soil nutrients.

The quaternary sediments are mainly found in Lambwe Valley and also in parts of Gembe and Gwasi locations. They consist of thick deposits of lacustrine and fluviatile sediments among which diatomite beds are common. The soils formed out of these rocks are also rich in agricultural production.

Granites are mainly found in Kaksingri location. They are thought to be of precambrian age, and are extensive in other parts of western Kenya i.e. around Bungoma and Butere. Some of these are of true intrusive origin, others are the product of granitization; the alteration in place of original sediments to granitic rocks. Areas of such geology are associated with low hills of granitic rocks which are not easily weathered. Such areas therefore have constraints to agricultural development due to the widespread occurrence of the boulders.

Alkaline intrusives can also be located in Kaksingri and in a small quantity in Lambwe around the Ruri hills. Tertiary carbonate centres are on the Gembe and Ruri hills. Faults also occur along the Mbita channel and along the Kanyamua escarpment.

The geological background in this study area is given according to the classifications in the National Atlas of Kenya (Third edition, 1970).<sup>9</sup>

### 3:3: Soils

Broadly the soils in South Nyanza district have been classified into three main types. These are:-

- (a) "the diver's plateau soils,
- (b) rift valley zone soils and
- (c) lake fringe soils."<sup>10</sup>

The soils in the area of study fall under the third type. Generally the soils here are of the red friable and grey mottled types. These soils are derived from colluvium and generally occur on level to gently sloping land usually between 1,200 m. to 1,800 m. \* above sea level in areas with a rainfall of 600 to 1,000 mm. per annum. The alluvial and colluvial material out of which the soils have developed were washed from the highlands by the numerous streams from the regions of heavy rainfall. These soils are rich in soil nutrients and support the cultivation of cotton, sorghum, sugar cane, wimbi, maize and millet.

However, the above classification is a broad simplification of an otherwise complicated soil types. It would therefore serve here to give a detailed soil type classification in the area. This classification is based on the information obtained from the National Atlas of Kenya (Third Edition 1970).<sup>11</sup>

According to this classification, the area has black clays or the grumosolic soils. These are found mainly in Gembe and Lambwe locations. This soil type consists of a range of black cotton soils and it includes the calcaveous and non-calcaveous variants. These are mainly derived from colluvium and occur on plains varying from sea level to 2,000 m. The rainfall is between 400-1,100 mm. The presence of this type of soil accounts for the growth of cotton in the areas mentioned.

In Kaksingri and Gwasi locations there are the subangular blocky friable clay with rounded iron concretions which become massive with depth. They are derived from volcanic rocks and occur on level land between 1,200 - 2,000 m. with rainfall between 750 - 1,100 mm. per annum. Areas with such soils are also rich for agricultural purposes.

Loamy sands are also found in the study area. These soils are derived from colluvium and occur on level to gently sloping land usually adjacent to black clays between 1,200-1,800 m. with rainfall between 600 - 1,100 mm. The areas where this type of soil is found are western parts of Kaksingri location, Central Lambwe and Gwasi locations.


Other types of soil found in the area, which are however not very useful for agricultural purposes are the grey clays, the dark grey soils and the shallow stony soils. The dark grey soils are found overlying hard lava but their genesis may be developed partly from volcanic ash. They are found on steep slopes between 1,500 - 1,800 m. with rainfall between 750 - 1,100 mm. per annum. They are found in northern Gwasi and Southern parts of Gembe location. The grey clays are derived from colluvium in low-lying bottom lands at 1,500 - 2,000 m. with rainfall between 500 - 1,100 mm. per annum. They are found in western parts of Kaksingri and southern Gwasi location. The shallow stony soils with rock outcrops are variously developed soils which have been subjected to geological and recent accelerated erosion and have lost their original characteristics. They are mostly found in eastern parts of Kaksingri and western parts of Lambwe location. This last type of soil could also explain the type that exists in Rusinga and Mfangano islands and which makes them areas of low agricultural potential. (See map no. 3).

3:4: Relief and drainage

3:4:1: Relief

The area has a diversity of topographical features. Basically the relief features of the division and the neighbouring areas are a product of successive stages of prolonged subaerial denudation, especially large-scale tectonic disturbances and earth movements including regional uplifts, tilting, faulting and

LEGEND

-  BLACK CLAYS
-  FRABLE CLAYS AND VOLCANICS
-  STONY SOILS AND ROCK

LAKE  
VICTORIA



AKUNGO BDO  
M.A PLANNING II  
1979/80



M.P. 00.3

MAJOR SOIL TYPES

volcanicity. The tectonic disturbances have produced and are reflected in the presence of such relief features like the Gembe; Ruri and Gwasi hills.

Other main relief features which result from the disturbances are the presence of a valley in Lambwe; a fault giving rise to the Kanyamua escarpment; plains and lands of gentle slopes. In fact even the presence of lake victoria itself is to be explained by such earth movements.

These various types of land forms present different pictures to agricultural production and development. For example Gwasi, Mfangano and Kaksingri locations which have large areas of hilly masses have agricultural problems related to these features since cultivation in such places is not easy especially when the technological know-how in these places is still very poor. This picture contrasts to the case in Lambwe location which is an area of generally low-lying hills and plains. It should, however, be noted that due to the aerial extent of the division and its climate, these features do not present very great variations in agricultural activities.

### 3:4:2: Drainage

#### 3:4:2:1 Surface water

The area has no major surface water source apart from lake victoria. The presence of the lake greatly affects the lives of the people around the lake shore. The lake is used in fishing; as a source of domestic water supply and also in communication that is; lake transport.

The lake, however is not used as a source of water for irrigation purposes. This means that it is a potential resource which could be utilized in providing water for irrigation in cases of rain failures and/or in order to increase the number of crops which can be grown within a year. The importance of the lake for the economic development of the area is taken up in a later chapter. What is more to point out here is that presently there are areas in the division whose population do not benefit directly from the presence of the lake either in terms of fishing or domestic water supply. This is due basically to the long distances of such areas from the lake. These areas use earth dams and stream waters for domestic supplies. Two examples of such areas are Nyatoto and Ponge in Lambwe and Gembe locations respectively.

There are no major rivers in the area except the Olambwe river which rises in the Kanyamua escarpment and descends to the lake. It is an important source of domestic water supply during the rainy periods. It is also used for fishing during the same periods by the people to whom it is accessible. Several streams also exist in the division and the most important use of these is that they provide sources of water supply for domestic use during the rainy periods. These streams include Owich in Gwasi location; Ogono in Gembe and also Misembe in Gwasi.



### 3:4:2:2 Ground water

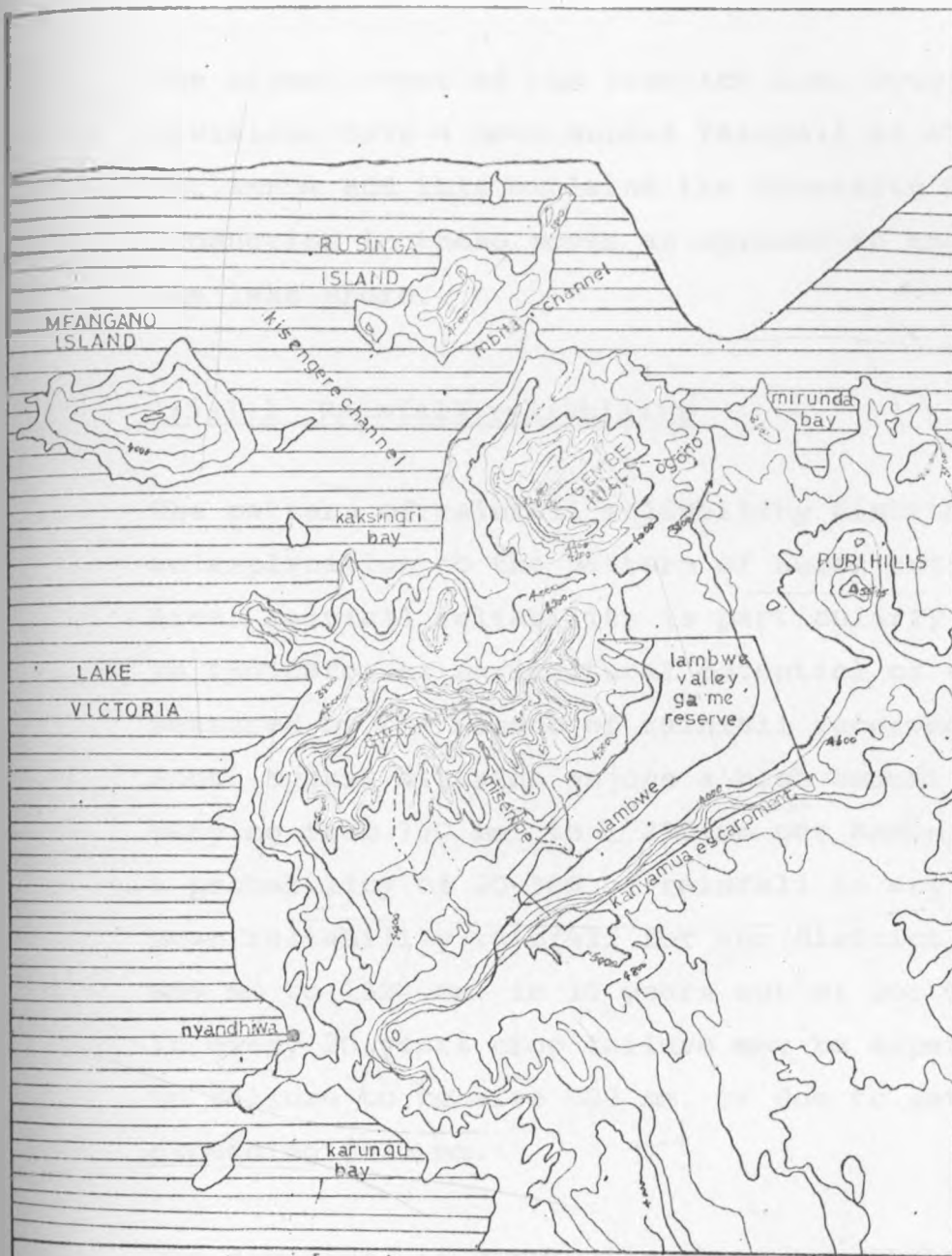
This is not available generally. The reason is that the parent rocks in the area and indeed in the whole of South Nyanza district are mainly of Kavirondian and post Kavirondian intrusive volcanics; whose covering mantle of weathered rock and residual soil is shallow, weathering is quite high and this produces aquifers. This tendency to weather makes the use of underground water expensive and difficult to provide. (See map no. 4).

### 3:5: Climate

#### 3:5:1: Rainfall

The rainfall pattern in this area is part of a larger zonal pattern which covers parts of Ndhiwa, Asego and Kendu Bay divisions of South Nyanza district. This zone is termed the 'Lake fringe' zone (E.A. Meteorological Dept.). The division falls in the eastern sub-division of the zone; an area which has a mean annual rainfall of between 875 mm. to 1,125 mm. per annum.

This rainfall is low and has a direct influence on agricultural activity of the area in the sense that it limits the number of crops which can be grown. Despite the suitability of the soils in most parts, major cash crops like tea and coffee which require heavy precipitation cannot be grown. Crops like cotton; groundnuts; sunflower and sorghum which can resist draught conditions can grow. The rain shadow effects of such hills as Gwasi and Gembe also help to explain the low rainfall experienced in some areas i.e. eastern part of Kaksingri. The low rainfall is



**LEGEND**

-  RIVERS
-  STREAMS
-  CONTOURS

**SCALE**  
1:250000

AKUNGO B.D.O  
M.A PLANNING II  
1979/80

MAP NO. 4 

**PHYSICAL FEATURES**

also a result of the general drift of storms from the highlands to the lake shore.

The higher areas of the district i.e. Oyugis and Kuja divisions have a mean annual rainfall of about 1,250 mm. per annum and this explains the diversity in agricultural production in these areas as opposed to the areas around the lake shore.

### 3:5:1:1 Rainfall reliability

The pattern of rainfall reliability distribution offers an explanation to the pattern of human activity in an area. Rainfall reliability is particularly important as an indicator of agricultural potential of an area; as measured by the amount of rainfall received. Generally South Nyanza district enjoys a high amount of rainfall, varying from 750 mm. to 1,250 mm per annum. It enjoys a probability of 20-30% of rainfall in any one year. Mean reliability rainfall for the district is between 889 mm to 1524 mm. in 19 years out of 20. Thus roughly in every 20 years crop failure may be experienced either to failure to receive 889 mm. or due to getting rainfall exceeding 1524 mm.

The division, in particular shows a probability of receiving 750 mm. of rainfall in any one year.

(1/1/6)

3:5:1:2 Mean Monthly Rainfall and Diurnal Variation

In South Nyanza district as a whole there are two wet seasons in the year, i.e. March to June and August to October. In the division the wet period is from March to June and also a short spell of rain in November. The rest of the year is generally dry. The rainfall is mostly conventional in the form of thunderstorms and showers. (See table).

Rainfall in mm. 1978 - Mbita Division.

Station	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Magunga	29.9	-	42	181	141.05	110.05	770.3	95.23	11.6	86.6	145	221.1
Ogongo	34.5	50.8	67.7	302.8	148.4	134	100.9	100.5	71.6	205	82	-
Mbita	21.5	27.5	29.2	223.5	103.3	99.05	81.4	53.8	36.05	44.1	-	-
Ramba	-	27.5	58.08	154.0	98.5	103.1	63.0	204	188.2	178.2	154	-
Lwanda	43.8	33.2	48.4	164.9	141.9	123.1	83.5	71.4	31.2	58.5	-	-
Sindo		30.9	-	43	214.8	135.0	98.3	68.1	90.0	28.0	51.5	201.1

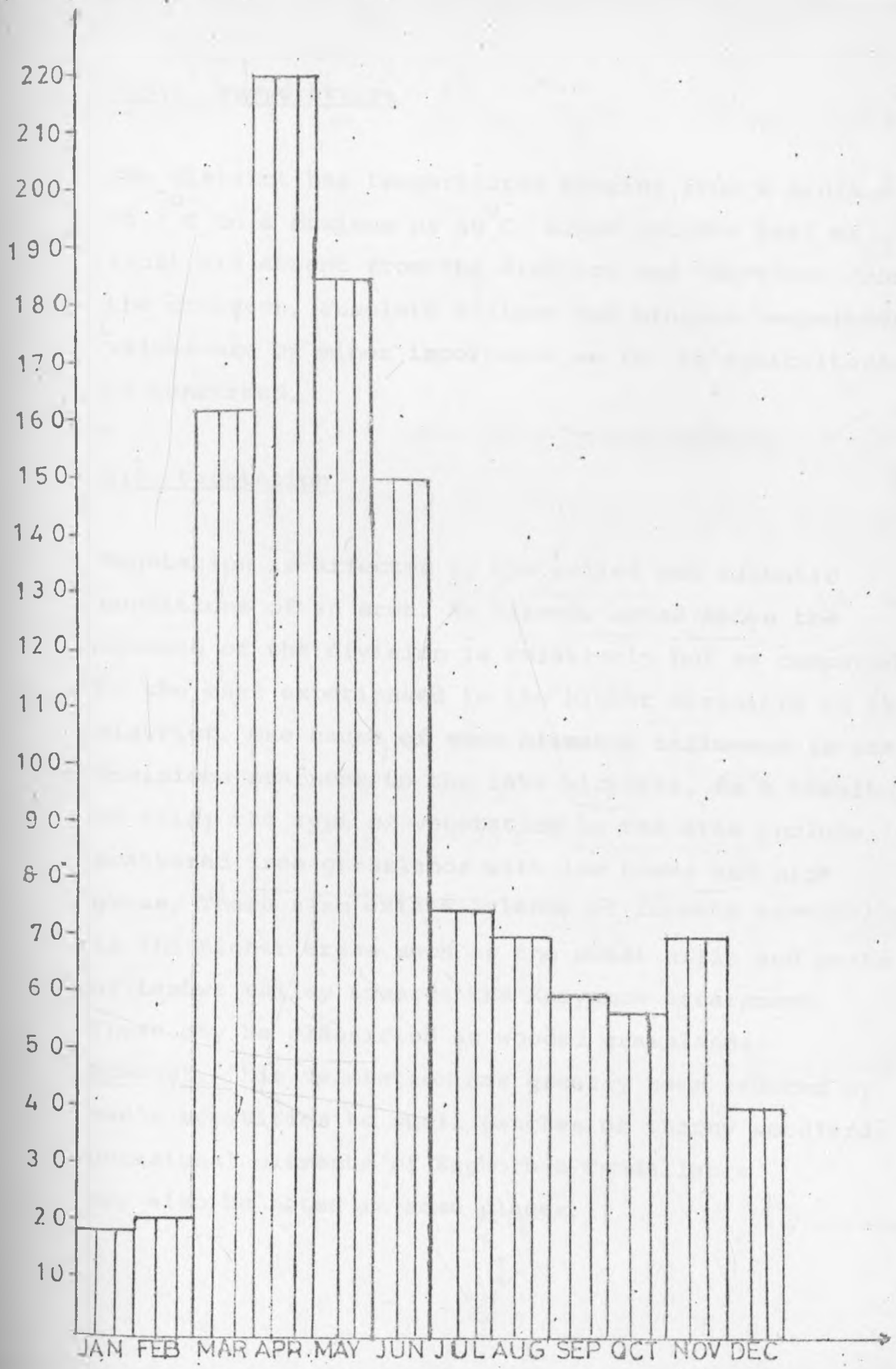
Table 1 : Source : District Agricultural Report 1978.

Rainfall in mm. 1976. Mbita Division

Station	JAN.	FEB.	MAR.	APR.	MAY	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
Mbita	9.3	20.5	282.0	260.4	160.5	60.0	60.5	50.5	0.8	27.5	60.5	2.54
Magunga	8.15	136.2	30.0	289.0	232.5	41.9	110.5	8.4	55.1	20.0	17.0	57.5
Ramba	20.6	156.5	161.0	199.6	110.8	20.0	70.0	70.6	38.95	34.8	14.5	2.5
Oqonqo	1.43	24.0	22.0	292.0	173.0	68.0	72.0	33.0	128.5	90.5	148.5	78.7

Table 2 : Source : District Agricultural Report 1976.

RAINFALL(MM)



MEAN MONTHLY RAINFALL

FIG. NO. 1.

### 3:5:2 Temperatures

The district has temperatures ranging from a minimum of 7<sup>o</sup> C to a maximum of 40<sup>o</sup> C. Since extreme heat or frost are absent from the district and therefore from the division, absolute maximum and minimum temperature values are of minor importance as far as agriculture is concerned.

### 3:6 Vegetation

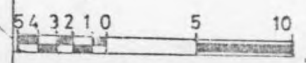
Vegetation is affected by the relief and climatic conditions of an area. As already noted above the climate of the division is relatively hot as compared to the ones experienced in the higher divisions of the district. One cause of such climatic influence is the divisions nearness to the lake victoria. As a result of this, the type of vegetation in the area includes scattered tree grasslands with low trees and high grass. There also exists islands of forests especially in the higher areas such as the Gwasi hills and parts of Lambwe Valley towards the Kanyamua escarpment. These may be classified as wooded grasslands. However, this vegetation has greatly been reduced by man's activities to small patches of thorny woodlands. Occasional elements of *Euphorbia Candellabra* may also be noted in some places.



LEGEND



SCALE KILOMETRES



AKUNGO BDO  
M.A PLANNING II  
1979/80

MAP NO-5



MEAN ANNUAL RAINFALL (MM)

3:7: Population Characteristics.

3:7:1 Size and distribution.

According to the 1979 Kenya Population Census the division had a population of 83,863 people.<sup>12</sup>

The locational distribution of this population in order of number was 23,712, 17,584, 14,304, 12,122, 9,352 and 6,789 for Gwasi, Gembe, Lambwe, Kaksingri, Rusinga and Mfangano respectively. The density of population of the division was 79 persons per sq. km. in 1979. The respective locational densities in order of magnitude were 207, 106, 103, 91, 80 and 57 for Rusinga, Mfangano, Gembe, Lambwe, Gwasi and Kaksingri.

Population, size and densities

Area	Population	Area in Sq. Km.	Density
Mbita Division	83,863	1051	79
Rusinga	9,352	45	207
Mfangano	6,789	64	106
Gembe	17,584	170	103
Lambwe	14,304	291*	91
Gwasi	23,712	271	80
Kaksingri	12,122	210	57

Table 3 : Source : Population Census 1979, Kenya.

\* : 135 Sq. Km. of which is Game Reserve.

Handwritten calculations and notes at the bottom of the page, including:

- 3 x 80
- 68
- 2 50
- 370
- 371
- 317
- 100
- 95
- 773
- 356
- 73
- 1229
- 660
- 356
- 104
- 65
- 16/104

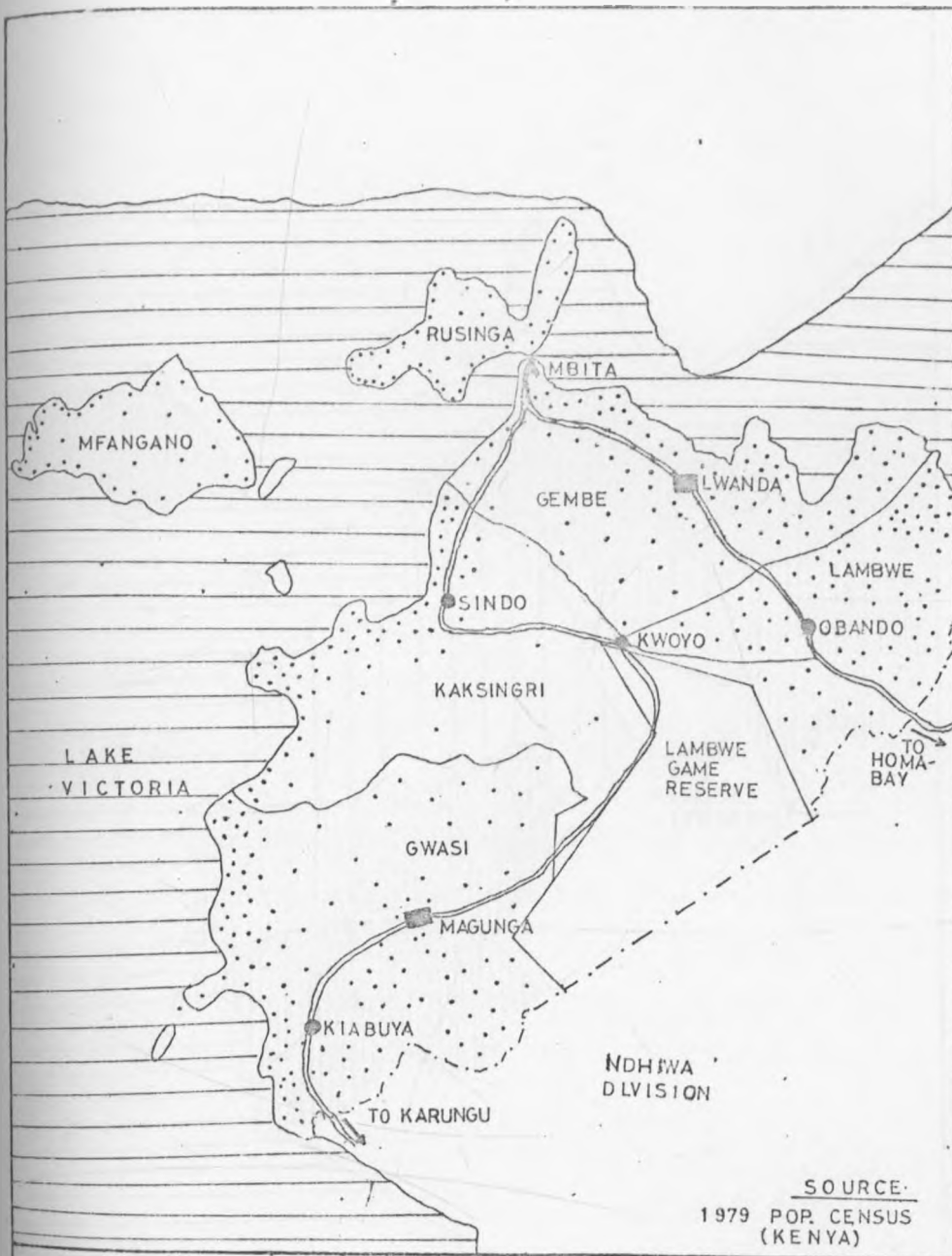
One feature of the population distribution is that within the locations, the population is generally concentrated along the lake shore. This is because of the services which the lake provides (i.e. water supply). In fact in only one location; that is, Lambwe is the population more or less evenly distributed except the game reserve which is uninhabited (See map no.'s 7 & 8).

### 3:7:2: Growth rate:

In 1969 the population of the division was 54,645 people and in 1979 the population was 83,863. The actual increase in population was 29,218 which suggests an annual increase of about 2,921 persons, during the period. The rate of growth of the population during this period was the alarming figure of about 5.3% per annum. This rate of growth is quite high and has a lot of implications for the development of the area, a subject to which attention is given later in this sub-section.

### 3:7:3: Migration, Fertility and Mortality

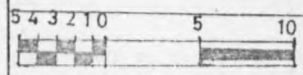
Although accurate data was not available, in-migration in the division seems to be minimal. This is because there are no major industries to attract outsiders. It is also due to the fact that there is virtually no vacant land for occupation and the present occupants are hardly willing to part with parts of their pieces of land in anticipation of future needs, i.e. the future land needs of the children. In-migration in the division was only important in the sixties especially after



LEGEND

• REP. 200 PEOPLE

SCALE (KM)



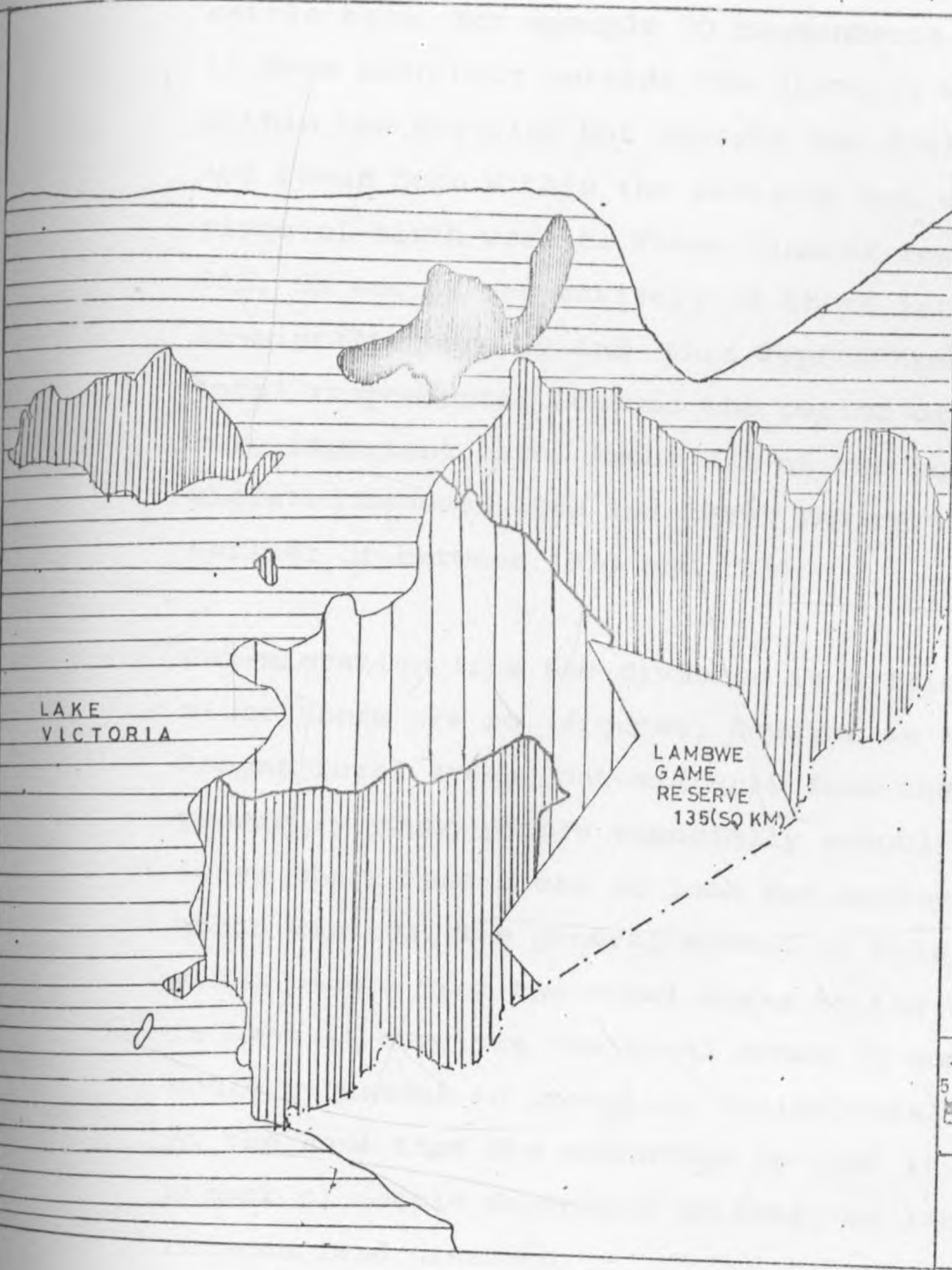
AKUNGO B-D-O  
M-A PLANNING II  
1979 00

SOURCE  
1979 POP. CENSUS  
(KENYA)

POPULATION DISTRIBUTION

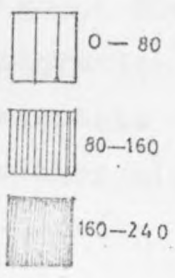
MAP. NO. 7





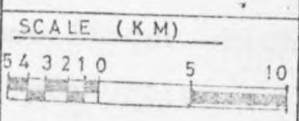
**LEGEND**

DENSITY PER SQ KM



LAKE VICTORIA

LAMBWE  
GAME  
RESERVE  
135(SQ KM)



AKUNGO B-D-O  
M-A PLANNING II  
1979/80



POPULATION DENSITY

MAP NO. 8

independence when Lambwe was made a settlement scheme. Many people from other districts and divisions came to settle here. For example 20 respondents were identified to have been born outside the district while those born within the district but outside the division were 9 and those born within the division but not living in place of birth were 6. These figures represented about 21%, 9% and 6% respectively of those interviewed. In-migrants were 29 and this represented about 30% of total respondents. However the period of migration is very important here. About 75% of the in-migrants migrated between 1960 and 1969. The rest either migrated earlier or between 1970 and 1974.

Out-migration from the division is difficult to assess since there are no figures. However as in most typical Kenyan rural areas, out-migrants from the division are generally young people especially school leavers who leave their home areas to look for employment in the urban centres. The general effect of this movement of young people from the rural areas to the urban areas is that it "deprives the rural areas of some labour which could be useful in promoting agricultural production."<sup>13</sup> At the same time its advantage is that it reduces the number of people depending entirely on land and thus reduces land pressure.

The fertility rate, the average number of children born alive to a woman who survives to the age of 50 is estimated to be 7.5 for South Nyanza district according to the 1969 Census. The life expectancy is estimated at 51 for females and 47 for males, or an average of 49 years for both sexes. Assuming a constant

53  
48

rate of fertility and mortality, the number of children and adults is expected to increase due to the improvement in the standard of living and medical care.

3:7:4: Population projections.

The high rate of fertility and the declining mortality rate due to improved medical care implies that the population will continue to grow at a fast rate.

Using the growth rate of 5.3% per annum the population of the division is estimated at 131,900 by the year 1989 and 540,900 by the year 2,000. These figures suggest a tremendous increase in the population by those years and infact by the year 2,000 the density is estimated at about 524 persons per sq. km. This has social and economic implications for development.

Socially, the dependant child population will increase making it sometimes necessary to divert efforts from economic output into social services. In particular, feeding, providing shelter and clothing the number of increasing people will constitute a great demand on the economy. The increasing number of children will require more schools and other educational facilities.

The population will require increased medical services and facilities. The people will need to be supplied with water especially when the government's objective is to provide every home with water by the year 2,000. <sup>14</sup>

The provision of all the above social services and needs will bear a heavy demand on the economy and might result in a general decline in economic output. To curb this there is need for family planning programmes to be intensified in order to check the number of people to be catered for by the limited resources.

Economically such a high population growth rate means that land pressure is unavoidable in the near future. Land will be subdivided to the extent that it will be economically unproductive. This calls for agricultural planning and intensified land use in order to increase the productivity of land. It also means planning for other areas of development i.e. rural industrialisation in order to offset some of the consequences that are concomitant with high population growth rates.

### 3:8: Land.

#### 3:8:1: Tenure System

A study of the land tenure system of an area is important in assessing the feasibilities not only of agricultural development but any other development project. 50% of the land in South Nyanza district is trust land available for small-holder occupation.

Generally in South Nyanza district many people are still conservative in their attitudes towards modern techniques of agricultural production. Similarly land tenure system is still basically communal although at present land consolidation and registration is taking place.

Only 256 hec. of 573,000 hec. of arable land has been registered.



Under the traditional land tenure system land is apportioned to a given locality, which is usually a clan or a village by the clan or village elders. The land so apportioned is supposed to belong to the clan or village as a whole and no individual has a claim to the land. An individual only gets a portion of that land for private use but has no claim to the absolute ownership of such land. Individuals are therefore simply caretakers of the clan or village pieces of land. The customary law recognises four different types of right on land. These are:-

- (a) right to use, i.e. grow crops, graze; use wood and timber, build upon e.t.c.
- (b) right to allocate land and make parcelling binding. This right is usually held by clan or village elders;
- (c) although rare, there is the right to dispose, sell and alienate land and
- (d) right to determine inheritance and succession system.

According to the Kenyan law, customary land tenure is defined as "the right in land of any Kenyan citizen using or occupying land in accordance with the customs or law of the area which is not repugnant to any written law" All rights under the customary law are by the Kenyan Constitution vested in the County Councils under the freehold titles registered in the name of the County Council.

The traditional land tenure system, however, has some disadvantages with regard to the modernisation and improvement in the level of agricultural production. First, this system is associated with poor methods of farming i.e. mono-cropping year after year and the conservatism against the use of such crop yielding inputs like fertilizers. Also the system is greatly associated with the use of jembes and hoes for digging. It is admitted that the above mentioned methods of production and the implements used have indeed provided the needed crop yields both for consumption and for marketing in certain instances. However, with the high rate of population growth in the area, there is need to adopt more efficient methods of production in order for the increasing population to be fed and be provided with other needs. Secondly traditional land tenure system has the disadvantage of a farmer having to move from one piece of land to another and this wastes a lot of time and energy. Thirdly, although the individual is allowed the use of his piece of land in the traditional system, the fact that he has no absolute control over this land reduces the incentive to develop the land. These are some of the problems to the development of land in places where the ownership of land is still traditional like in Mbita division.

The traditional land tenure system is, however breaking down because there is no more land to allocate to individuals due to the high population growth. This is coupled by the declining or the gradual breakdown in strength of the lineage; family or clan control over individuals and their activities over land i.e. lending, loaning or selling land to outsiders. The decline in the

effectiveness of tribal norms also leaves individuals free of social control and sanctions. Individuals are thus able to hold land and even apply for title deeds without the permission of the elders. Not least is that the introduction of cash crops and more forms of investment in land leads to consolidating one's claim to individual ownership of a piece of land.

The disadvantages of the traditional land tenure system coupled with the fact that this system is itself gradually breaking down necessitates another system of land ownership which would ensure a more effective control and use of land. The Kenya government is encouraging and actually implementing land consolidation and registration under individual title deeds in order to reduce or altogether eliminate the problems to agricultural production brought about by communal system of land ownership.

Land consolidation and registration has several advantages to agricultural production. These include:-

- (a) the ability of the individual title deed holder to apply and acquire loans for the development of land; notwithstanding the fact that the use of such loans are sometimes abused;
- (b) the ability of a higher concentration in agricultural activity as it is easier to work on a single parcel of land rather than many scattered pieces of land in which a lot of time and energy is wasted from one parcel to another;

- (c) the fact that a consolidated land will give the owner a greater incentive to work because he will be sure the product will benefit him directly.

Thus land consolidation and registration will result in a general increase in agricultural output and development. This might in turn attract other facilities for agricultural development i.e. transport, extension workers e.t.c.

### 3:8:2: Land Carrying Capacity

Land carrying capacity defines the relationship between an increase in population in a given area over time and the extent to which the land upon which people depend for their livelihood can cope with such an increase given the existing level of technology of production.

In South Nyanza district, in the medium potential zones, it is calculated that a family of six needs a minimum of 5 ha. to earn a net £100 per annum in addition to 2 ha. to provide subsistence crops. This requirement has however been exceeded by the present demand on land. According to the district agricultural report for 1978 the arable land in the district is 573,000 hectares. With a population of 815,260 according to the 1979 Census and an average family size of 7 it means there were 116,865 families of 7 needing to share the arable land. This means that each family can only get a maximum of 4.9 hectares of arable land. This falls short of the number of hectares needed per family to earn a net

income of £100 per annum let alone the extra 2 hectares needed for subsistence production. It should also be noted that the calculations were based on the assumption of an average family size of six while actually the average family size is 7. The picture given here is that the population has exceeded the expected land carrying capacity. This might explain the fact that the average net farm income is KShs.1,664 per annum instead of the expected £100 or KShs.2,000 per annum. Also since the amount is just an average there are some families with very low net farm incomes per annum which are not enough to provide the basic needs.

Mbita division falls within the medium potential land and with the estimated landholding of about 5 hectares per family and a family size of 7 on average; coupled by the high rate of population growth, it means that land pressure is soon becoming a major problem in the area. This means that apart from undertaking population control measures, there is need for the intensification of land use and the improvement in the level of technology used. This will ensure increased incomes from farm produce and at the same time it will increase the carrying capacity of land. Intensification of land use should include practices like mixed cropping; crop rotation and terracing and the control of soil erosion especially in the hilly areas. The use of crop production technologies like fertilizers should also be encouraged.

### 3:8:3: Land Potentiality

The factors which determine the potential of land in an area are its climate; topography and soils. The climate of the division is generally hot with a mean annual rainfall of about 875 mm per annum. This means that the climate can support only a limited number of crops; especially the drought resistant ones like cotton. The topography is also a constraint in some parts of the division especially the hilly areas like parts of Kaksingri and Gwasi locations. The soils on the other hand, are rich and can support the growth of many crops if only the precipitation was high enough i.e. a minimum mean annual rainfall of about 9,000 mm per annum. According to the above factors, most parts of the division have medium potential land. This fact has already been stated in the section on land carrying capacity but what this means is that notwithstanding the effects of the constraints the division has potential for the development of agriculture. (See map no.9).

### 3:9: Existing agricultural situation.

#### 3:9:1: Crops.

The crops grown in the area are cotton, groundnuts and sunflower among the cash crops. Maize is a double purpose crop i.e. it is grown both as a cash and subsistence crop. The subsistence crops grown include millets, cassava, vegetables, sorghum and fingermillet.

Crops

Cash crops	Subsistence crops
Cotton	Maize
Ground-nuts	Millet
Sunflower	Cassava
Maize	Vegetables/beans
	Sorghum
	Fingermillet
	Serena millet.

Table 4.

According to the District Agricultural Report for 1976 the area under each crop in the division is as shown in table below.

Area under each crop

Crop	Area in (Ha.)
Hybrid Maize	1285
Local maize	3180
Ground-nuts	400
Sunflower	110
Sorghum	2050
Fingermillet	23
Cotton	*
Vegetables/Beans	25
Serena millet	75

Table 5 : Source : District Agricultural Report 1976.

According to the report the total crop area is 7,145 hectares as per 1976. One point to be noted is that between 1976 and 1979 when this study was carried out this hectarage might have increased or even decreased in total and among the crops. According to the table the area under cotton is not given, the inclusion of which should have inflated the total hectarage under crops. Sorghum had the largest area, followed by local maize and then hybrid maize. Maize had the highest total area under crop and this means that it is an important crop in the area. One other important point to be noted is that there is some mixed cropping in the area and therefore the areas given under each crop might be misleading to some extent.

The amount of money earned in a year for each cash crop was not available in the divisional reports. As a result the study relies for this information on the field findings. According to this the following were observed. See table below.



Sale of cash crops

Crop	Ave. Price/bag (KShs).	Ave. of bags/farmer/yr.	Ave. earnings/yr per crop (KShs.)	Ave. Farm Income (KShs.)
Cotton	130	11.9	1547	5
G/nuts	240	7.6	1824	4
S/flower	120	21.1	1460	5
Maize	90	15	1350	1

Table 6.

According to the table groundnuts earned the highest average income followed by cotton, sunflower and lastly maize. Assuming an increasing price per bag of these crops; other factors remaining constant, the increase in the production of the crops may earn the farmers more incomes. In terms of quantity sunflower had the highest average number of bags per farmer in a year, followed by maize, cotton and lastly groundnuts. (see maps no's 10 & 11).

3:9:2: Livestock

Livestock are an important source of wealth in the area. Of the livestock; cattle are the most predominant. They are kept for several purposes. These include:-

- (a) their usefulness for bride price;
- (b) as a means of capital investment;
- (c) for status symbol;
- (d) for production of milk and meat.

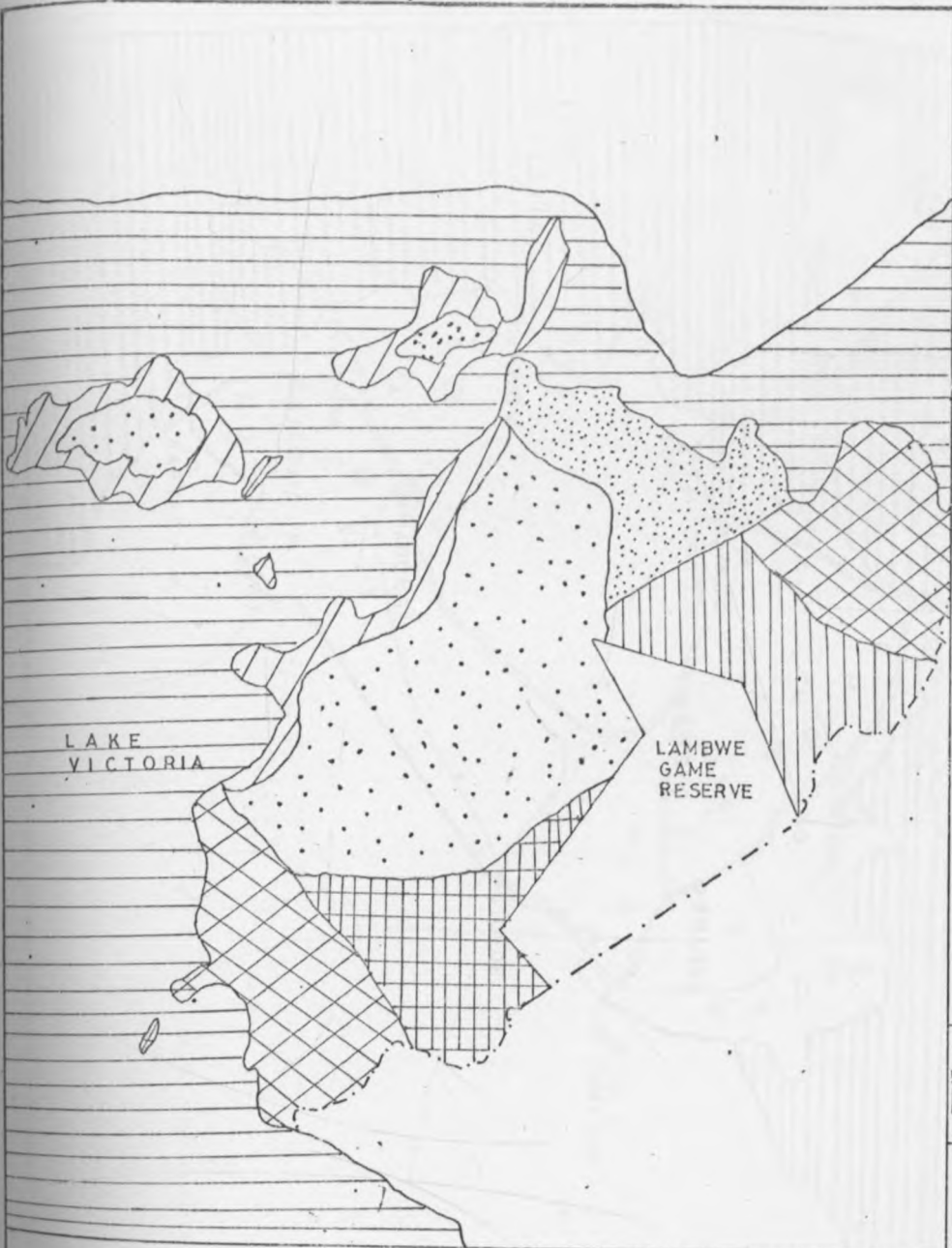
According to the District Development plan for 1974/78 the population of cattle was estimated at about 500,000. The importance attached to cattle should not however, overshadow the contribution made by goats, sheep and poultry especially in the provision of meat.

South Nyanza District est. livestock population  
(1,000 heads 1970).




---

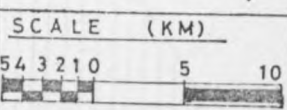
Cattle	Sheep and	Chicken	Donkeys
486,000	120	1775	2

Table 7.



LEGEND

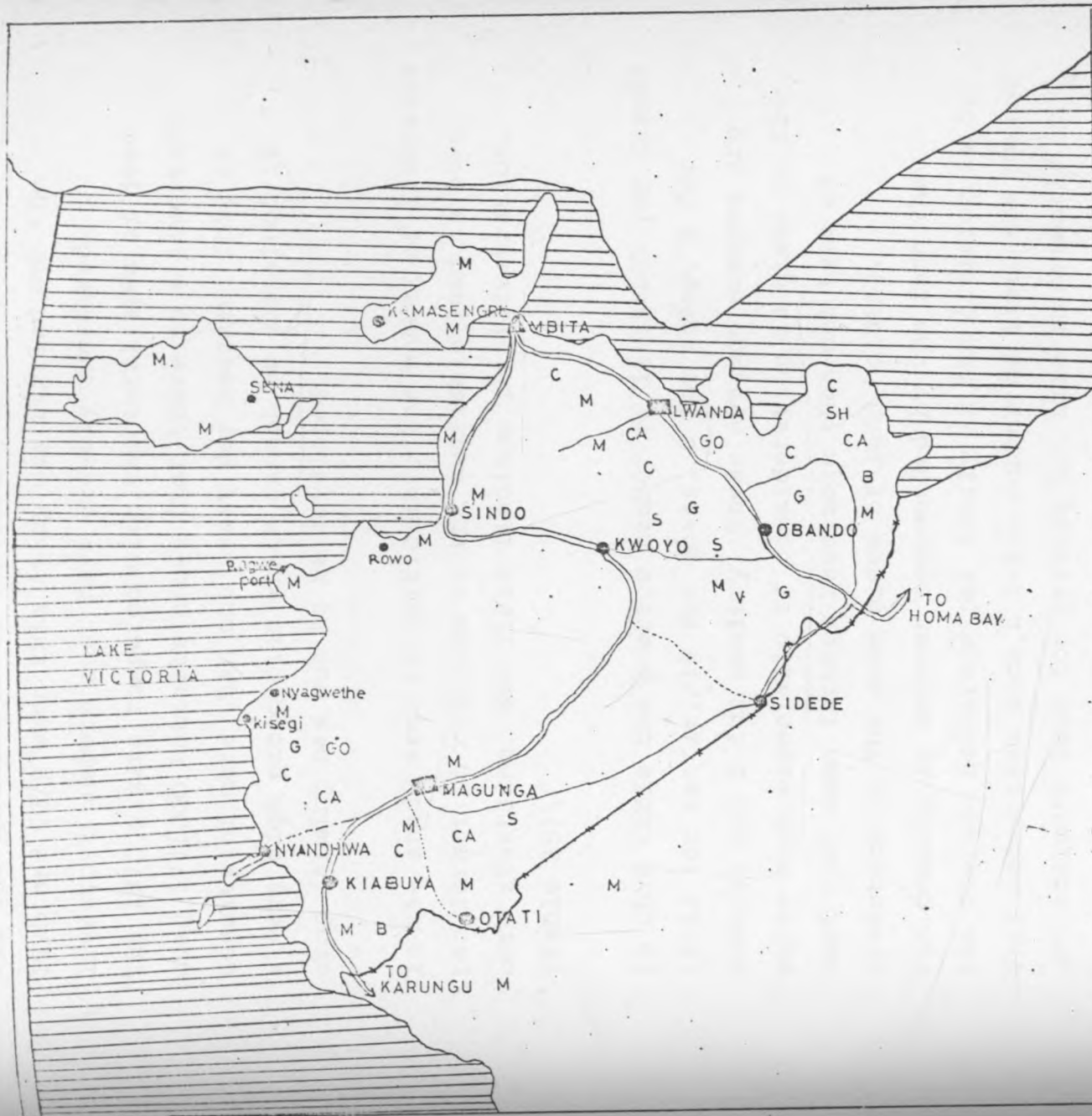
-  MAIZE/MILLET
-  COTTON/MAIZE
-  G NUTS/COTTON
-  SUNFLOWER/G/NUTS
-  MAIZE/SUNFLOWER
-  HILL AREAS




AKUNGO B.D.O  
 M.A PLANNING II  
 1979/ 80

MAJOR CROP AREAS

MAP NO.10



# LEGEND

- M MAIZE/MILLET
- G GROUNDNUTS
- C COTTON
- S SUNFLOWER
- B BEANS
- V VEGETABLES
- CA CATTLE
- GO GOATS
- SH SHEEP
-  DIVISIONAL BOUNDARY

SCALE      KM.

54 3210      5      10

AKUNGO B D O  
M A PLANNING II  
1979/80

MAP NO. 11



In the district estimates of 1970 livestock numbers was 610 thousand heads (excluding chicken). Between 1970 and 1979 when this study was carried out the livestock numbers must have greatly increased. The 1970 figure compared with the total area of just over 571,000 hectares shows that there is a livestock density of more than one beast per hectare. This is a very high proportion which cannot be sustained if crop farming has got to be developed.

In the study area in particular, the number of livestock per farmer in relation to the available land is even more startling. See field findings for illustration. (Table 19).

In that table the average number of livestock per farmer is 12 for cattle, 15 for goats, 8 for sheep, 3 for donkeys and 9 for poultry. These average numbers are quite high especially if consideration is given to the fact that some farmers have more than one type of livestock on the same piece of land holding.

The problem is however compounded by the fact that the average hectareage per family in the division is 5. This means that such a large number of livestock cannot get adequate land for grazing but more importantly it means that the area available for crop production is greatly reduced by the existence of the livestock. Livestock grazing area has however been cheap to get in the division due to the existence of communal grazing practice where some land is allotted for grazing. However; with the onslaught of land consolidation and registration this practice will die since there will be no vacant land spared for livestock grazing and each

farmer will have to find alternative ways of accommodating his livestock. One inevitable way of alleviating this problem is by reducing the number of livestock per farmer. This is not to under-play the contribution made by the large number of livestock i.e. the provision of income through the sale of the livestock themselves for meat and their production of milk for sale. The oxen are also used for ploughing. This loss can however be compensated for through cross-breeding and the improvement in the quality of livestock. This is particularly necessary since the livestock in the area are predominantly the traditional type whose contribution to incomes are generally low. The establishment of more stock handling facilities i.e. dipping and spraying facilities is also necessary. This should be coupled by increased veterinary services in order to control foot and mouth diseases (See map no. 11).

### 3:10: Other sources of income

#### 3:10:1: Fishing

This is an important income earner in the area and even traditionally it formed an important economic activity. It provides a major diet and supplies proteins which are important as nutrients.

The development of the fishing industry from the traditional setting to the modern one was brought about by the development in the means of transport and also the demand for fish in the inland markets where prices were higher. This began especially from the 1930's with the introduction of lorries and motor vessels

*7 2000 m<sup>2</sup>  
→ 1000 m<sup>2</sup>  
→ 1000 m<sup>2</sup>  
5000 m<sup>2</sup>  
x 4*

in the area. The use of cash instead of barter also encouraged the development of the fishing industry and also encouraged trade between the lake shore people and the people living in far areas from the lake, usually referred to as "Joramba". The fish was originary mostly tranported by means of bicycles through the middlemen usually called "Joringi".

The estimate of the number of fishermen was not available in the official records. However, field findings provide some information relating to this. Of the 94 interviewed farmers 27 were identified to be supplementing their farm incomes with incomes from fishing. This represented 28.7% of the farmers interviewed. The most important aspect observed however was that the average income from fishing is roughly KShs.500 per annum. If this is related to the total average incomes of the fishing farmers interviewed, it is found that incomes from fishing contributes about 25.6% of the farmer's incomes. This means that fishing is quite an important source of income to some people in the area.

Fishing as a source of income

No. interviewed	% of total interviewed	Ave. income from fishing (KShs.)	Ave. incomes of the fishing farmers (KSh.)	% of incomes from fishing
27	28.7	500	1,950	25.6

Table 8.

Improvement in the fishing industry is therefore necessary in order for more incomes to be earned from this source. Improvement could be done through the development of beaches, provision of marketing and storage facilities and upgrading feeder roads. Roads are important for the distribution and marketing of fish. An attempt should also be made to improve catches by introducing properly designed boats and improved nets. These measures are important in achieving the government's policy of developing the fishing industry by concentrating on developing selected beaches along the lake shore. There are about 240 licensed fishing boats in South Nyanza district. Some of the most important beaches in the division include Mbita, Lwanda, Sena, Sindo and Utajo.

3:10:2

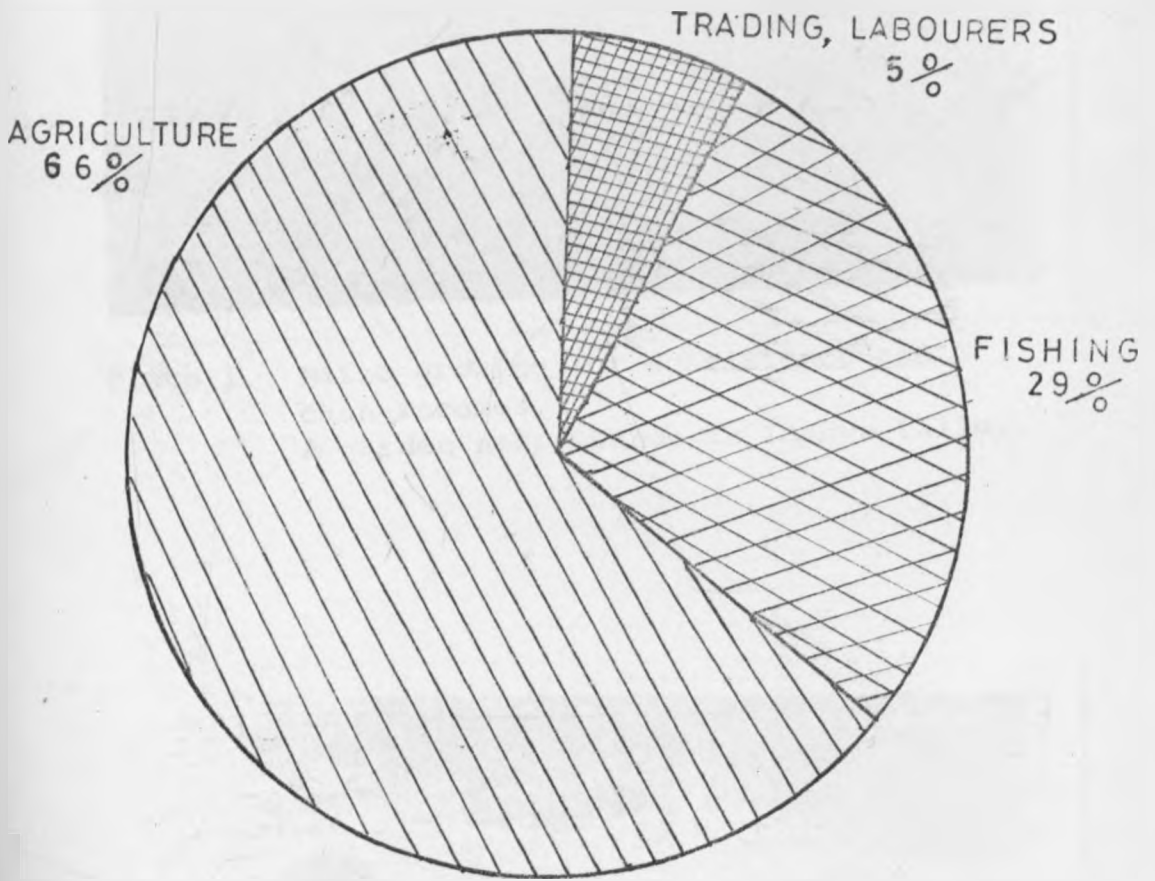
The other sources of income in the area include employment as casual labourers; trading i.e. shopkeeping and fish trading. Some people interviewed were however, identified to be having permanent jobs. These were mostly teachers. See table below.

Other sources of income

Source	No. of Persons	% of total interviewed
Trading	11	11.7
Permanent Job	6	6.3
Labourers	15	15.7

Table 9.





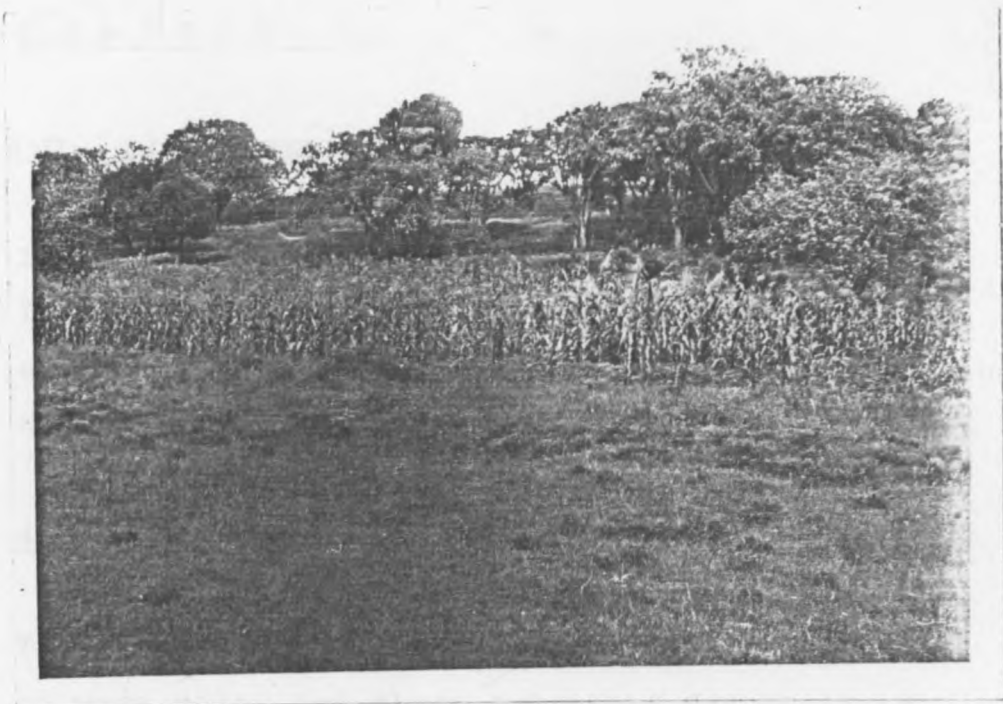


Plate 1. Maize growing for subsistence and cash incomes.  
A garden near Obando in Lambwe Valley.

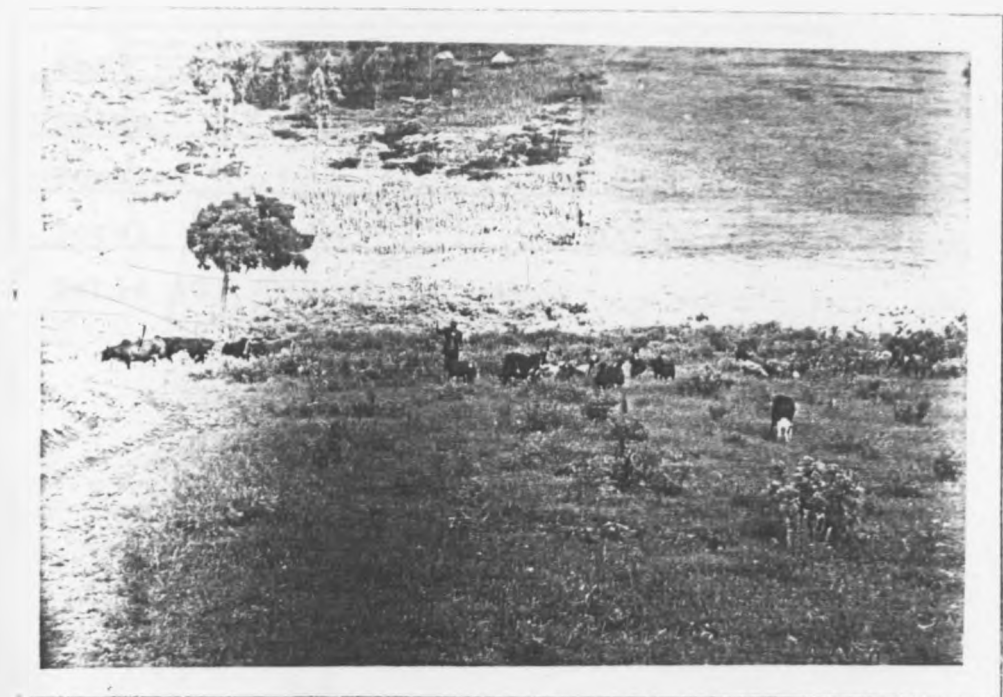


Plate 2. Cattle, goats and sheep as the main livestock kept.  
A farmer in Kamreri, Gembe location looks after livestock.

C H A P T E R 4:

4:0: FIELD FINDINGS AND ANALYSIS

In this chapter the study gives the main field findings and highlights the major constraints to agricultural production and development in the study area.

4:1 Respondents

Total respondents interviewed were 94. Of these 85 were males and these accounted for 90.4% of respondents, only 9 respondents were females who accounted for 9.6% of all farmers interviewed.

Respondents

Sex	Number	Percentage
Males	85	90.4
Females	9	9.6
Total	94	100.0

Table 10.

The age distribution of the farmers is shown in the table below.

Age distribution

Age	Number	Percentage
20-29 yrs.	4	4.2
30-39 yrs.	27	26.7
40-49 yrs.	46	48.9
50-59 yrs.	12	14.7
60 +	5	5.5
Total	94	100.0

Table 11.

The highest number of farmers is concentrated between the ages of 40-49. This is followed by those between the ages of 30-39 years. The explanation to this is that the people below the age of 30 years are young and many of them prefer other kinds of jobs to agriculture. Furthermore due to their age group they don't own land but are still under the guardian of their parents. On the other hand the few number of farmers in the ages from 50 years upward may be explained by the phenomenon that the life expectancy in the area is 49 years and after that age many people are dead. The above explain the concentration of farmers in the years from 30 - 49 years.

4:2: Agricultural activities

The agricultural activities carried out in the area include crop growing and livestock keeping.

4:2:1: Crops

The main crops grown in the division are cotton; groundnuts and sunflower among the cash crops. The subsistence crops grown are millet; beans; cassava; vegetables, fingermillet and sorghum. Maize is grown both as a cash crop and subsistence crop.

Crops grown

Cash crops	Number growing	% of total	Subsistence crops	Number growing	% of total
Cotton	21	22.3	Maize	94	100%
G/nuts	15	15.9	Millet	94	100%
Sunflower	8	8.5	Beans	38	40.4
			Cassava	18	19.0
			Vegetables	24	25.5
			Fingermillet	8	8.5
			Sorghum	6	6.3
Total	44	46.8			

Table 12.

The table shows that the most important cash crop is cotton, seconded by groundnuts and lastly sunflower. Maize and millet are grown by all the farmers since both crops are staple food crops. The table, however; may be misleading in the sense that most of the farmers grow more than one crop in a year. As such there is nothing like a particular number of farmers growing only one particular crop whether cash or subsistence. What is true is that there is mixed cropping in the area and a number of crops are being grown by individual farmers.

The table below shows the pattern of farming and crop combinations.

Cash crop combinations.

Crops	No. of Occurences	% of total cash growers
Cotton/groundnuts	36	72.7
Groundnuts/sunflower	23	52.4
Cotton/sunflower	29	65.9
Cotton/Groundnuts/sunflower	44	100.0

Table 13.

Subsistence crop combinations

Crops	No. of occurrences	% of total
Maize/millet/vegetables	94	100%
Maize/beans/vegetables	94	100%
Millet/beans/vegetables	94	100%
Beans/cassava/Fingermillet	54	57.4
Cassava/Fingermillet/sorghum	48	51
Vegetables/Fingermillet/sorghum	38	40.4

Table 14.

Thus in many cases most farmers grow more than one crop on their pieces of land holdings in a year.

The table below shows the period and the main farm activities in a year. The activities are land preparation (i.e. digging and ploughing), planting, weeding and harvesting.

Period and main farm activities in a year.

Period	Farm activity
Jan - Feb	Land preparation
March	Planting
April - May	Weeding
July - August	Harvesting

Table 15.

The table shows that land preparation is done between January and February of each year. In March planting is done since this is the beginning of the period of long rains. Weeding is done between April and May.

In June most of the crops are ripe for consumption and there is no major farm activity. Between July and August most of the crops are harvested.

One major feature of the farm activities is that between September and January of the following year there are no farm activities carried out. This is because during this period there are no rains and the resulting draught cannot allow for any major farm activities to take place. It can be seen that rainfall limits farm activities in the sense that the period between September and January of the following could be used in growing more crops if only there was rainfall. A crop like maize could yield within this period and could be grown twice a year. Thus rainfall is a problem to agriculture in the division as will be illustrated later in this chapter.

Marketed Produce

Farm Products

Crop	Ave. no. of bags/farmer/year.	Price per bag (KShs)	Number selling	Ave. earnings per crop year (K.Shs.).
Cotton	11.9	130	21	1,547
Groundnuts	7.6	240	15	1,824
Sunflower	21.1	120	8	1,460
Maize	15	90	78	1,350

Table 16.



From the last column of the above table and assuming that most farmers grow a combination of all the cash crops above, the average farm income in a year from marketed produce has been calculated to be about K.Shs.1,545. This level of income is low considering the various needs the farmers would like to satisfy i.e. provision of food; shelter and clothing. In order for these basic needs to be provided adequately the incomes must be raised. This in turn calls for increased agricultural production and development since agriculture is the major source of incomes. This is the gap the study attempts to fill by suggesting ways through which agricultural production and development can be enhanced as discussed in chapter 5.

The table below shows where the produce is marketed.

Marketing Places

Where marketed	No.	% of total respondents
Local markets (within location)	18	19.3
Within division	28	29.7
Outside division	32	34
Wholly subsistence producers	16	17
Total	94	100.0

Table 17.

The means of transport used in taking the produce to the market is a crucial consideration and the table below shows that various means of transport is used. These include foot; bicycle, animal, vehicular and water transport.

Means of Transport

Means	No. of farmers	% of total
Foot	9	11.5
Bicycle	5	6.4
Donkey	4	5.1
Matatu	39	50
Bus	16	20.6
Boat	5	6.4
Total	78	100.0

Table 18.

Table 18 shows that the most used means of transport is matatu. The other important means of transport are buses. The important point to note here then therefore that road transport is crucial for the marketing of farm produce and is therefore an important factor determining the amount of incomes earned from farm products. As table 17 shows both internal (within division) and external transport connections are vital for the marketing of farm produce. About 30% of total farmers interviewed market their produce within the division while an even larger percentage market their produce outside the division. Any transportation problems especially road transport is therefore bound to affect the level of incomes earned from farm produce.

The importance of road transport should however; not overshadow the part played by other modes of transport like the use of bicycles, donkeys and even foot transport. These modes of transport are also important in the division since this is a small scale farming area.

4:2:2: Livestock

Apart from crop farming, livestock keeping is also an important agricultural activity in the division. The livestock are a source of income to some people in the area. The major field findings on livestock are shown in the tables below.

Livestock farming

Livestock	No. of farmers owning	No. of livestock	Ave. no. Per farmer
Cattle	52	624	12
Goats	20	300	15
Sheep	12	96	8
Donkeys	4	12	3
Poultry	6	54	9

Table' 19.

Livestock combinations

As with crop farming, livestock farming is also practiced in a combination of more than one type of livestock per farmer. The table below illustrates this.

Livestock combinations

Livestock	No. owning
Cattle/Goats	72
Cattle/Sheep	64
Goats/Sheep	32
Donkeys/Poultry	10
Cattle/Goats/Sheep/Poultry	94

Table 20.

Sale of livestock products

Product	No. selling
Milk	21
Meat	3
Hides and Skins	24

Table 21.

4:3: The problems identified

Against the background of the major field findings given above; there are some problems which the farmers indicated to be facing them in agriculture. These problems were:-

- (a) The inadequacy of transportation facilities.
- (b) Marketing problems
- (c) Inadequacy of extension services
- (d) Inadequacy of rainfall.

The study went further to examine the nature and effect of each of these problems on agricultural production and development. In the course of this examination, other problems were also identified. These were:-

- (a) Physical constraints i.e. (the topography and the soils).
- (b) Low level of education and lack of skills.

What follows below is the analysis of the nature and effect of all the above problems in order of their magnitude according to farmers responses and field observation.

The table below shows the magnitude of four of the problems as revealed by the responses from the farmers.

Number and percentage of farmers for each problem as first priority

Problem	Number of farmers	Percentage of total
Transport	48	51.
Marketing	22	23.6
Ext. services	14	14.8
Rainfal	10	10.6
Total	94	100.0

Table 22.

In the above table, the second column shows the number of farmers who listed the problem as their first priority among others and the last column shows their percentage out of the total number interviewed. It can be seen that transport was the first priority problem, having the highest number of response. It was followed by marketing problems which in itself suggests that there is a relationship between transport and marketing. The third and fourth problems according to farmers' responses were inadequacy of extension workers and inadequacy of rainfall respectively.

(See figures 2, 3 and chart no. IV).

There are however; farmers who listed the above problems either as their second, third or fourth priority. This gives a different picture of the total number of farmers listing each problem. The table below shows this. (Also see figure 4).

Total response of farmers on each problem

Problem	No. with problem	% of total	No. without problem	% of total
Transport	57	60.63	37	39.3
Marketing	54	57.44	40	42.5
Ext. services	49	52.12	45	47.8
Rainfall	32	34	62	65.9

Table 23.

REF. TABLE 22

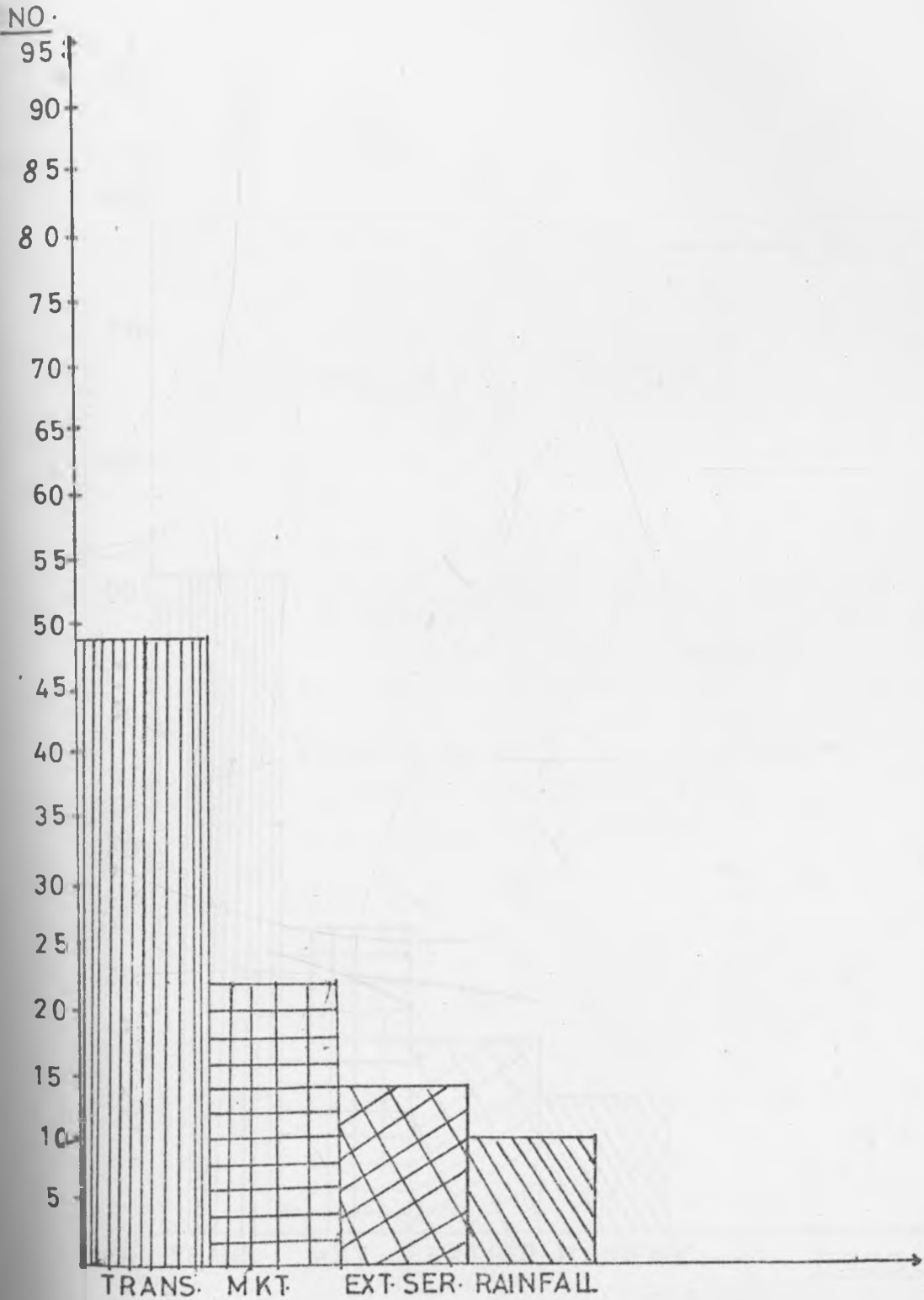


FIG. NO

2

NO. OF FARMERS FOR EACH PROBLEM AS FIRST PRIORITY

REF. TABLE 22

PERCENTAGE

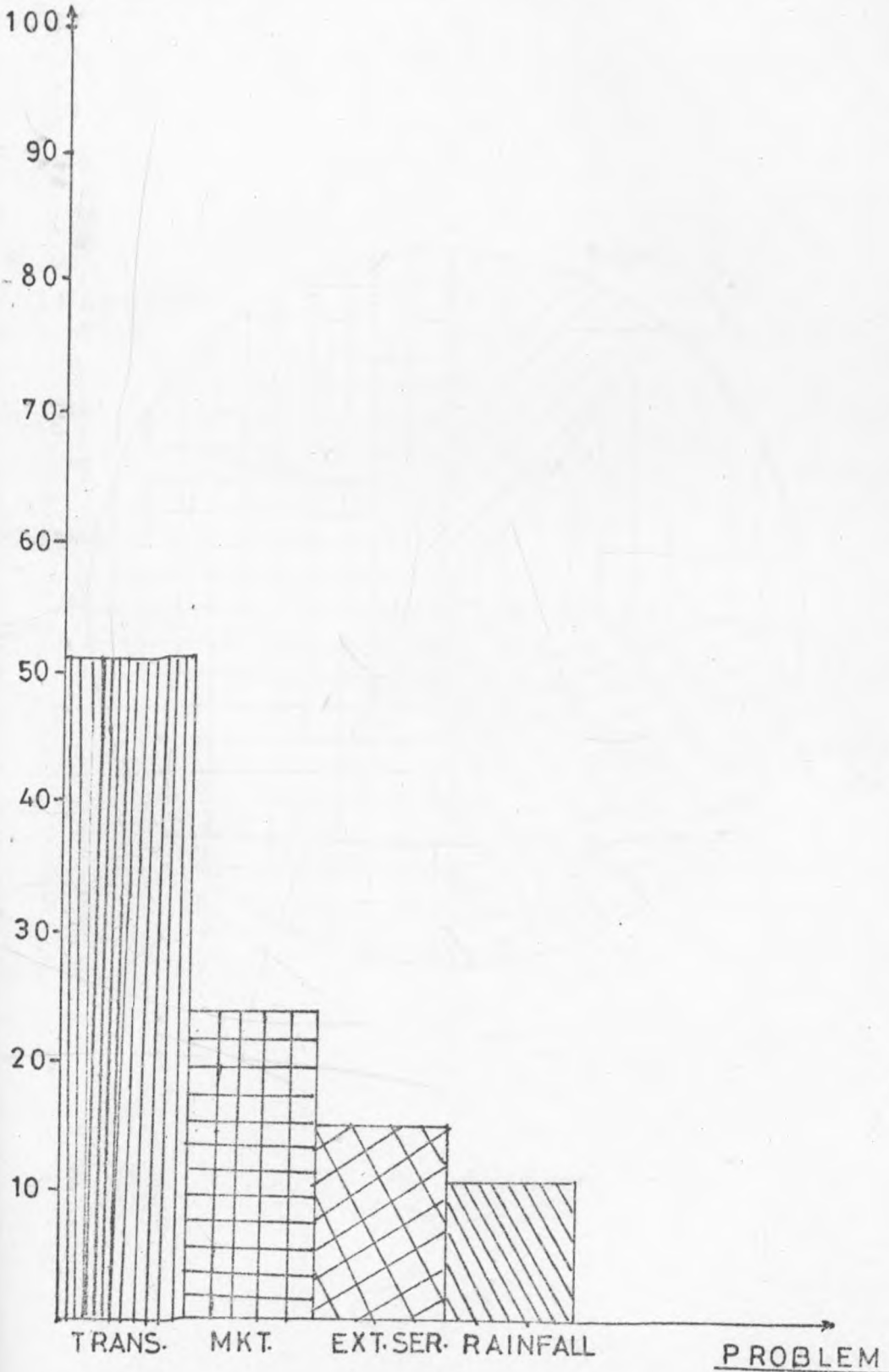


FIG. NO.

3

% OF FARMERS: FIRST PRIORITY PROBLEM



REF. TABLE 22.

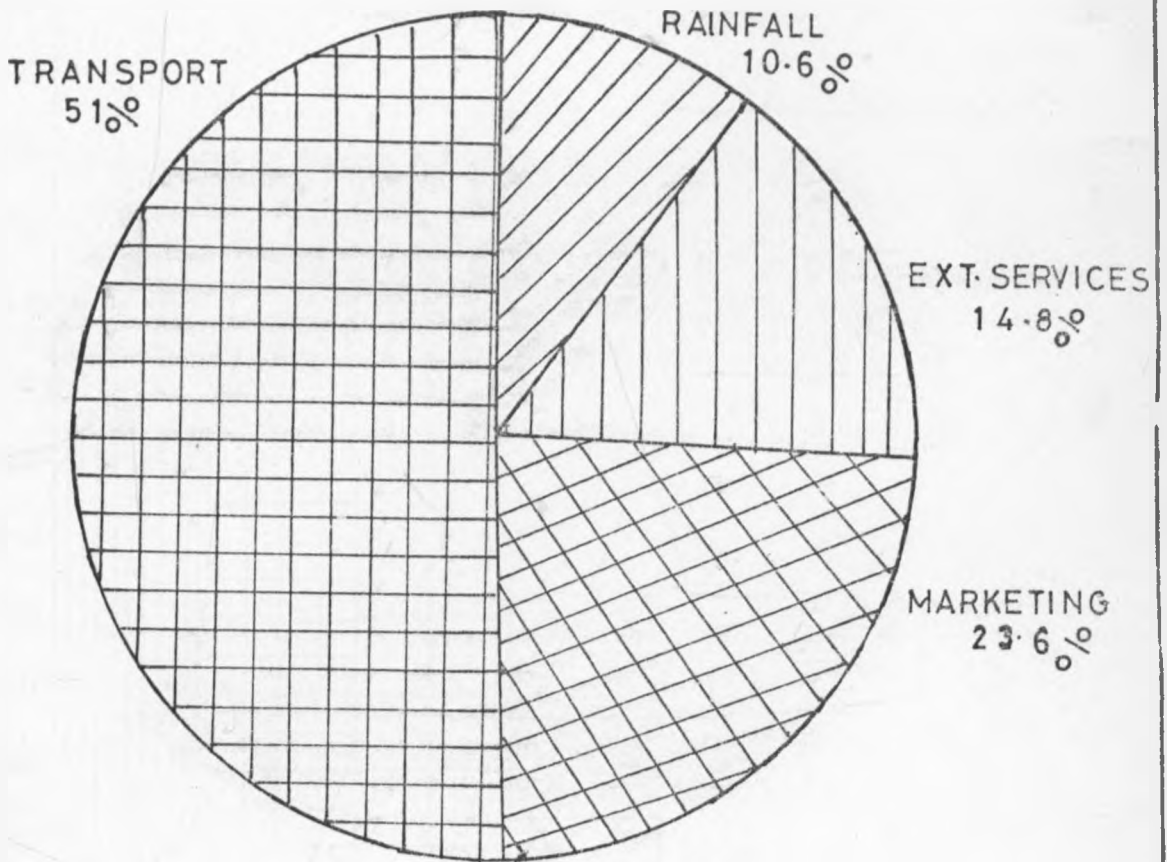
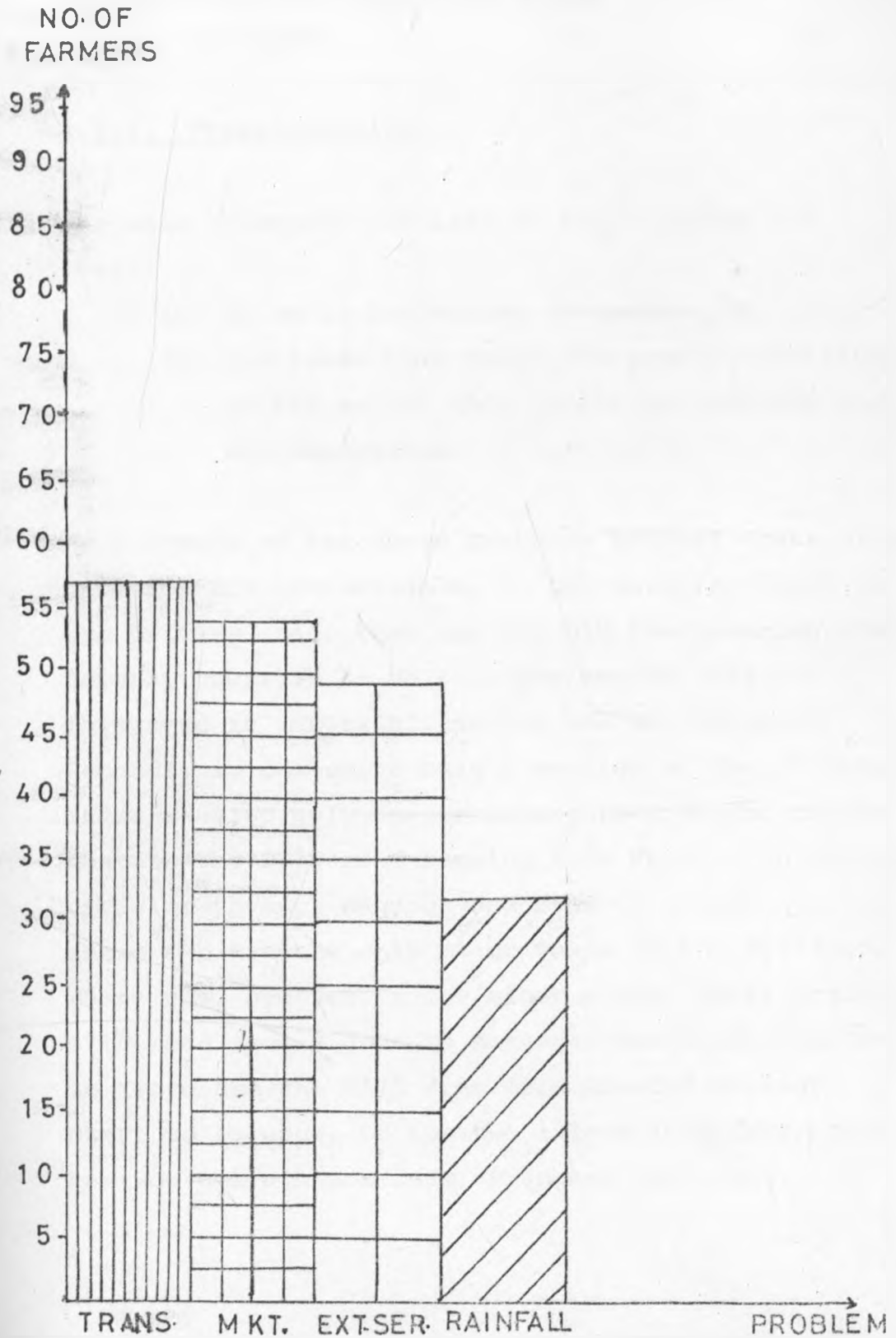


CHART. NO.  
IV

PROBLEM MAGNITUDE BY FARMERS RESPONSES

REF. TABLE 23



J

FIG. NO.

4

TOTAL RESPONSE OF FARMERS ON EACH PROBLEM

Having seen the magnitude of the problems according to farmers responses, here below is a breakdown of their nature and effect.

4:3:1: Transportation

The main transport problems in the division are that:-

- (a) There is inadequacy of roads.
- (b) The roads that exist are poorly maintained, to the extent that in the wet periods they are impassable.

As a result of the above problems several areas of the division are inaccessible. On the mainland there is only one primary road, that is, the C19 road running from Homabay township to Mbita. (See map no. 12).

This road is impassable during the wet periods.

Secondly it can serve only a section of the division. There is also only one secondary road on the mainland, that is the D210 road running from Karungu in Ndhiwa division through Magunga and Sindo to Mbita.









These two are the only major roads in the division.

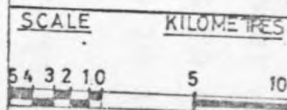
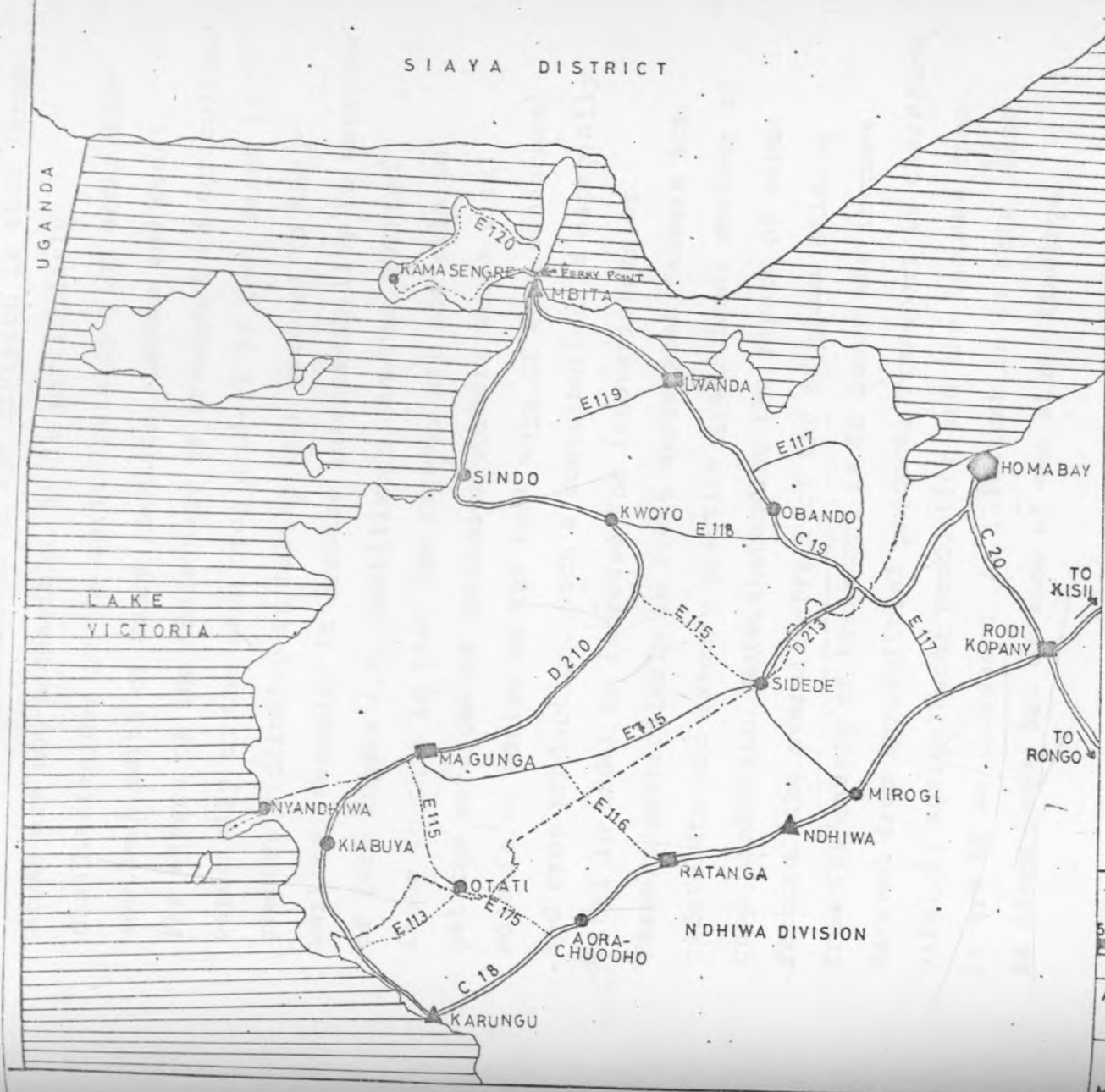
There are, however, a few minor roads. These include the E715 road from Sidede to Magunga, the E118 from Obando to Kwoyo and the E175 from Aora Chuodho through Otati to Magunga. Of the two island locations, only Rusinga has a minor road. Mfangano has none.

In the case of the islands, apart from roads, water transport is another important mode of transport. It is particularly important for the transportation of fish from the islands to the mainland and also to get from the mainland some foodstuffs which are not available on the islands. The transportation problem here is that whereas there are a few private means of transport, these are neither regularised nor adequate to serve the demand. For example between Mfangano island (which is about 25 kilometres away) and the mainland, there are only three days in a week when means of transport is available. These are on Mondays; Wednesdays and Fridays. The Wednesdays schedule is particularly important because it brings people from the island for the market day at Mbita on Thursdays. Since there are only three days in a week when people can easily communicate between the island and the mainland, it means on other days some people have to forgo their businesses and when the favourable days come, the available means may not be adequate to serve all the people who need to travel. Rusinga island is however, better placed because it is nearer, the mainland and there is a ferry connecting it to the mainland. The ferry is, however, only easily accessible to those who live near it. The other people who live in the western end of the island like Kaswanga and Kamasengre have a communication problem in that they have to travel long distances, sometimes on foot in order to reach the ferry point and proceed to the mainland.

SIAYA DISTRICT

LEGEND

-  PRIMARY ROAD
-  SECONDARY ROAD
-  MINOR ROADS
-  URBAN CENTRE
-  RURAL CENTRES
-  MARKET CENTRES
-  LOCAL CENTRES
-  DIVISIONAL BOUNDARY



AKUNGO B.D.G  
M A PLANNING II  
1979/80

MAP NO-12



EXISTING ROAD NETWORK

Spatially therefore the main disadvantage of the road network on the mainland of the division is that large areas are not accessible. It is particularly disadvantageous in the agriculturally rich areas like southern parts of Gembe location, Lambwe and Gwasi. The effect of the inadequacy of transport on agriculture especially to the cash crop growers is that first it creates difficulty in taking farm produce to the markets. Secondly it creates inaccessibility to sources of farm inputs i.e. fertilizers. Another related issue to this is that the farmers are not able to get the services of extension workers whose vital role is to advise on the best ways of farm management and crop production. Such a contribution is especially vital in order to increase the innovativeness of farmers particularly in areas where most farmers are illiterate and largely practice traditional methods of crop production. Notwithstanding the impact of other factors, the overall effect of the problems arising from inadequacy of transport is to lower the incomes derived from agricultural produce. Transport is therefore vital if agricultural production and the incomes from it are to be increased. An illustration of this point is given below out of some of the study findings.

#### 4:3:1:1: Transport and incomes

Out of the 57 farmers who indicated transport as one of their problems it was found that 40 of them had low incomes from farm produce while 17 had high incomes. The income level was determined by the average farm income in a year which was calculated to be KShs.1,545. Of the 37 farmers who did not indicate transport as one

of their problems it was found that 13 had low incomes and 24 had high incomes. The picture which emerged out of this sorting out is shown in table below.

Transport and incomes

Income	<u>Transport</u>	
	non-availability	availability
Low	40	13
High	17	24

Table 24.

With transport as the independent variable and income as the dependent variable, the gamma measure was used in cross tabulation to establish what relationship there was between the two variables. The gamma measure shows the direction and strength of association between two or more cross-tabulated variables. It varies between - 1.00 (indicating a perfect negative relationship) and + 1.00 (indicating a perfect positive relationship). A gamma of .00 or near .00 indicates the lack of any relationship between the variables.

$$\text{gamma} = \frac{(A \times D) - (B \times C)}{(A \times D) + (B \times C)}$$

Where ABC and D refer to the top left cell, top right cell; bottom left and bottom right cells respectively.

In the above table therefore we may check the direction and strength of relationship between transport and income by the gamma measure by:-

$$\frac{(40 \times 24) - (13 \times 17)}{(40 \times 24) + (13 \times 17)} = \frac{960-221}{960+221} = \frac{739}{1181}$$
$$= 0.62$$

Thus the relationship between the two variables is positive and strong. It was concluded that the low incomes among the majority of farmers who indicated transport as their problem and the high incomes of the majority who had no transport problem may have been due to the non-availability and the availability of transport respectively. It can therefore be seen that transport influences the level of income from farm produce. Its development is therefore necessary in order for production to be increased and level of income raised.

#### 4:3:2 Physical factors

The main physical factors which pose a problem to agricultural development in the division are:-

- (a) The hilly nature of the topography in some parts.
- (b) The soils.

1. D)



4:3:2:1: Topography

The problem of the hilly nature of the topography is that some areas suffer from the leeward effects of the hills and this lowers the amount of rainfall received in such areas. This case is particularly experienced in Kapsingri location which lies on the leeward side of the Gembe and the Gwasi hills. For example the mean annual rainfall for Ogongo which is on the windward side of the Gembe hills was 108.1 mm. in 1978 while that of Sindo which is on the leeward side of the hills was only 80 mm. in the same period. (See table 1 and maps no.s 4 and 5).

The leeward effect of the hills thus limits the amount of rainfall received in some parts i.e. Kaksingri location. Consequently this affects the level of crop production in the sense that with less rainfall the yields will be lower, assuming other factors constant.

The second effect of the hills on agricultural production is that they limit the area of land which could be availed for agriculture (See map. no. 4).

This problem could however, be overcome by small-scale terrace farming on the slopes of the hills but the snag here is that most of the hills are steep and further more the farmers have not developed the kind of technology which might enable them to exploit the hill slopes for agricultural purposes. The experience of this topographical problem is mainly in Gwasi location.

With a population growth rate of 5.3% per annum in the division, the available land will soon be inadequate to supply the needs of the people. Some of the rich hill slopes like in parts of Gwasi will have to be developed for agricultural purposes. The ways through which this problem could be solved are suggested in chapter five.

#### 4:3:2:2: Soils

The effects of soil as a constraint to agricultural development is mainly experienced in Rusinga and Mfangano islands.

The soils on these islands are shallow and stony with rock outcrops. (See map no.3). This is basically a result of the geological formation of the areas. More importantly however, is that the soils here have been subjected to accelerated erosion and have lost most of their original nutrients. The soils here are therefore not good or rich for agricultural purposes.

Due to such poor nature of the soils, farm produce is not enough to sustain the people. This calls for the development of other sources of incomes i.e. fishing which is already an important economic activity on the islands. An integrated rural development approach is therefore essential in such areas and this is where the role of district planning for rural development is important.

#### 4:3:3: Rainfall

One of the problems of rainfall in the division has been mentioned in relation to topography. However, the overall problem of rainfall in the division is that generally the precipitation is low. The annual rainfall is about 875 mm. per annum. This low rainfall limits the number of crops which can be grown, and this despite the suitability of soils. Crops like coffee and tea which need large amounts of rainfall cannot be grown. The amount of rainfall received thus favours only the drought resistant crops. As a result the major crops which are grown are cotton, groundnuts, sunflower and maize. Thus since the low rainfall limits the number of crops which can be grown, it is a problem to agriculture.

In the field survey, ten farmers indicated rainfall as their main problem while the total number who listed rainfall as a problem was thirty two. (See tables 22 and 23).

#### 4:3:4: Marketing

The first marketing problem identified was the inaccessibility of markets especially to the cash crop growers. This point has been stated in relation to transport and need no emphasis here.

The second marketing problem is in relation to payments due to farmers after they take their produce to the delivery points. The cotton growers in particular complained of long delays in payments after they take

their produce to the cotton marketing stores. This problem was reinforced by the fact that only 6 of the interviewed farmers belonged to the only Co-operative Society in the area, that is, the Lambwe Cotton Farmers' Co-operative. As a result individual cotton farmers who are not members of this Co-operative find it very difficult to negotiate for their payments. This retards the morale of farmers and contributes to less activity in crop production. The 203 farmers who are members of this Co-operative find it easy for their payments since the organisation negotiates on their behalf. According to the District Agricultural Officer, this Co-operative is open to all cotton farmers in the division and it liasons with the Victoria Co-operative Society which acts for all cotton farmers in the district. Thus according to the situation described above there is need for the formation of Co-operative Societies in order to handle all matters pertaining to agriculture on behalf of the farmers.

The District Agricultural Officer admitted that there is quite a low formation of Co-operative Societies not only in the division but in the district as a whole. Reasons given for the low Co-operatives formation included the ignorance of most of the farmers on the usefulness of Co-operatives. Secondly it is due to the small-scale nature of farming on the part of many farmers. These reasons are true in the light of the high level of illiteracy in the division and also due to the fact that the average farm holdings in the division is only 5 hectares per family of 7.

With this background an attempt was made to examine the effects of the problems of marketing on incomes from agriculture. Out of the 54 farmers who indicated the problem, 31 had low incomes while 23 had high incomes. Of the 40 farmers who had no marketing problems only 12 had low incomes and 28 had high incomes. In cross-tabulating these figures the following picture emerged. See table below.

Marketing and incomes

Incomes	Marketing	
Low	31	12
High	23	28

Table 25.

Using the gamma measure the relationship of the variables is:-

$$\frac{(31 \times 23) - (12 \times 23)}{(31 \times 28) + (12 \times 23)} = \frac{868 - 276}{868 + 276} = \frac{592}{1144} = 0.51$$

Thus according to this result the relationship is positive and strong. It might therefore be said that the low incomes experienced by some farmers is due to the marketing problems encountered. Thus marketing problems are a constraint related to agriculture in the division.

4:3:5: Level of education and lack of skills

Low level of education, illiteracy and lack of skills were identified as constraints to the development of agriculture in the area. Farmers' education is an important determinant of the level of agricultural production in the sense that through education the farmer becomes aware of the best methods of crop production and animal husbandry. Education also increases the farmers' innovativeness.

This means that as the farmer gets more informed of the improved methods of production through education, he gains the knowledge of new technology and skills of farming. Improved technologies and skills are important ingredients in the improvement of agricultural production. It must however be cautioned that it doesn't follow that all farmers who get farming education put it into practice. Also there are farmers who though illiterate, adopt and practice modern methods of farming and infact are having higher returns than even the educated ones. The point here is however; that generally illiteracy is associated with conservation on traditional methods of farming, whose yields are generally low. It is for this that farmers education on the methods of farming becomes important for improved agricultural production.

In the field survey, the majority of farmers interviewed were found to be illiterate. This means that many farmers are still conservative and farming methods are based on traditional practice. Such practices include mono-cropping year after year especially with regard to maize and millet and also the use of cow-dung as manure.

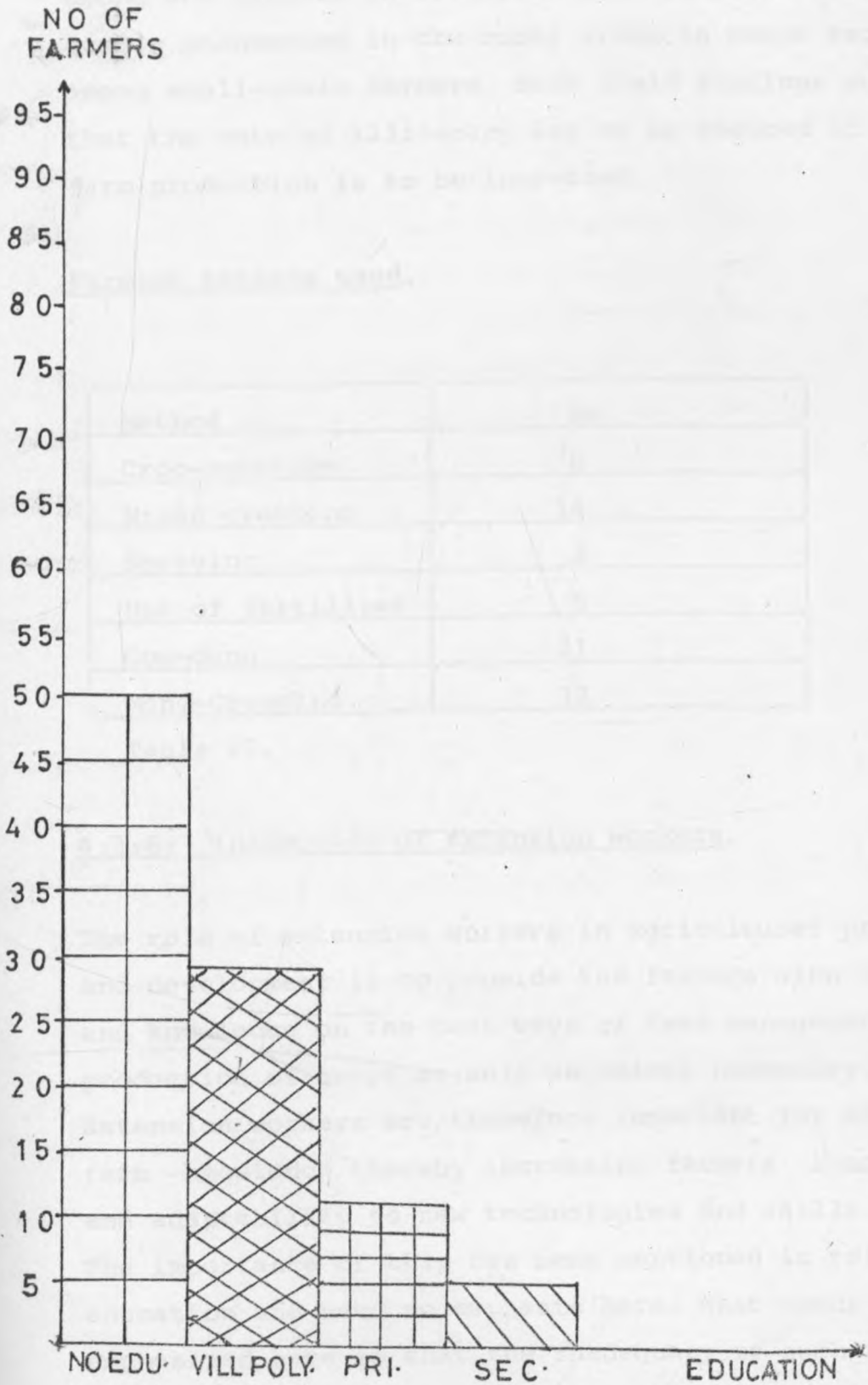
Due to illiteracy on the part of most farmers, the traditional methods of farming are further reinforced by cultural beliefs and values. As a result most farmers are not adaptive to the modern methods of farm management and crop production like crop rotation; intensive mixed farming; spraying and the use of fertilizers. It should be pointed out that some farmers indicated their willingness to use some of these improved methods of production (particularly the use of fertilizers) but that they couldn't meet the costs. Illiteracy therefore contributes to the low level of technology and skills of production used.

The level of farmers' education as revealed by field findings is shown in table below. Also see figure 5.

Level of education.

Level of education	No. of farmers	% of total interviewed
No. formal education	50	53
Craft/Village Polytechnic	28	29.7
Primary	11	11.9
Secondary	5	5.4
Post-Secondary	-	-
Total	94	100.0

Table 26.



FARMERS' LEVEL OF EDUCATION

FIG. NO.

5



Table 26 shows that the level of illiteracy is high among the farmers interviewed. This is however, a common phenomenon in the rural areas in Kenya especially among small-scale farmers. Such field findings suggest that the rate of illiteracy has to be reduced if farm production is to be increased.

Farming methods used.

Method	No.
Crop-rotation	8
Mixed cropping	14
Spraying	3
Use of fertilizer	5
Cow-dung	21
Mono-Cropping	32

Table 27.

4:3:6: Inadequacy of extension workers.

The role of extension workers in agricultural production and development is to provide the farmers with information and knowledge on the best ways of farm management and production of crops as well as animal husbandry. Extension workers are therefore important for disseminating farm -knowledge thereby increasing farmers' innovativeness and adaptability to new technologies and skills. The importance of this has been mentioned in relation to education and need no emphasis here. What needs to be emphasized here is that the inadequacy of such services leads to the ignorance of farmers thereby leading to the practice of less efficient methods and skills of farming.

The study reveals that 49 farmers have never had the services of extension workers while the rest 45 indicated that they get such services at certain times. It is true that the number of extension workers employed cannot be enough to visit individual farmers especially in small-scale farming agriculture where almost every head of a household is a farmer. The dissemination of such services is usually through Chief's barazas. In the division, it was found that only two locations had a resident extension worker. The rest of the locations were served by officers who come from the divisional headquarters. It was also revealed that officers visits from the headquarters are not regular. When they report to the barazas, some farmers are still not able to attend such barazas due to the long distances involved in travelling from some areas to the locational headquarters. This is particularly true in two locations of Gwasi and Gembe which are quite large.

Thus many farmers don't receive these services and since they are essential their absence or inadequacy leads to lack of knowledge and skills of farming.

The table below shows the response of farmers with regard to the regularity of the services they receive.

Regularity of extension services

Period	No.
Weekly	-
Monthly	9
Annually	12
Rarely	24
Total	45

Table 28.

4.4: Other related factors to agricultural development

Notwithstanding the problems to agricultural production and development in the division as analysed above, there are other related factors which are important for consideration in a study of this nature because they more or less directly affect agricultural development. The factors; which are considered below are not only important to support and sustain the agricultural sector but are essential for a viable process of rural development. Thus whereas this study does not go into the details of the factors, their relationship to agriculture and importance to rural development is nonetheless noted.

#### 4:4:1: Rural Industrialisation

Industrialisation of the rural areas is a development intended to transform rural economies and enhance the overall development of the rural areas.

The Kenya government emphasizes that whereas agriculture will still continue to be the major strategy for rural development, the development of rural industries will be encouraged. The strategy is the "dispersion of industry and non-farm activities in the informal sector.....since such activities lend themselves to the use of labour-intensive methods of production"<sup>17</sup>. Emphasis on rural industrialisation is on small and even localized industrial establishments.

Such industries include cottage industries which may use wind and man-power energy i.e. manual cane milling and other small craft establishments. The specific roles such industries are supposed to play are:-

- (a) The provision of employment opportunities and therefore the generation of incomes especially to those who have no land or who cannot find employment in the agricultural and other sectors i.e. quarrying and fishing.
- (b) Through providing employment or wage incomes, rural industrialisation is also meant to safeguard against rural-urban migration which is one of the causes of widespread unemployment in the urban centres in Kenya.

- (c) Rural industrialisation when well developed will provide processing facilities for the raw materials produced from agricultural activities i.e. it will provide milling facilities for maize and processing facilities for such crops as tea and coffee. Rural industries will also provide agricultural inputs i.e. fertilizers; implements like jembes, hoes e.t.c.

Basically therefore the agricultural and industrial sectors are important to each other and together they are crucial for the enhancement of rural development.

In the area of study the development of industries is almost at a nil stage because there was no industry identified either in the field or in the official documents of the administration of the area or the Ministry concerned. Since industrialisation is so vital to rural development, the deficiency of industries in the division implies that most people will still continue to rely on agriculture to earn their living. As such it is necessary that attempts be made at over-coming the problems of agriculture while ways of developing industries are still being sought.

#### 4:4:2: Water

Water is one of the five basic needs and essentials for life to exist anywhere. The essentials in order of importance are air, water, food, heat and light.

It is important to note that among the five essentials, water ranks only second to air in importance.

If simple life cannot exist anywhere without water, this essential of life assumes a much greater magnitude of importance when development issues are taken into consideration. It is for this reason that this study makes a note of the water supply situation in Mbita division.

According to the current 1979/83 Kenya Development Plan, the government intends to supply water to the entire population by the year 2,000. This effort is aimed at improving the health and nutritional conditions of the population.

In Mbita division, water supply for domestic and animal use is provided by the lake Victoria, by streams and earth dams. The water supply situation in the division is such that only those who live around and near the lake are assured of supplies throughout the year. The people living away from the lake do get problems of supplies especially during the dry periods when the streams and earth dams which supply water get dry.

The study does not go into the details of water supply needs and requirements in the division but what would suffice to be pointed out here is that since water is so essential to life the inadequacy of supplies in the division implies that the health and nutritional conditions of the population especially those who live away from the lake are negatively affected. This problem may be reflected on economic activities i.e. agricultural activities which cannot effectively

be carried out in the absence or inadequacy of such an essential of life. It is for this reason that the problem of water supply in the division is related to agricultural activities and whereas water supply demands or needs in the area is not the direct subject matter of this study, it is noted that the improvement of water supplies is essential for the future agricultural development. The proposed Mbita water project when completed and fully operational may go along way in helping to reduce the effects of the inadequacy of water supply.

#### 4:4:3: Health

Health is an important aspect of human life. Health care is meant to safeguard against diseases and other hazzards to human life i.e. air pollution, water pollution, garbage and refuse. To prevent such hazzards to human life the provision of health facilities becomes necessary. This will ensure that the population remains strong and energetic to carry on other important development activities.

The Kenya government is providing free medical services to all out-patients. In the current Development Plan the government intends to increase its health services to the people. It is stated that "the number of doctors and nurses will be expanded from 105 in 1976 to 123 per 100,000 people .....and that there would be improvement in the distribution of health facilities".<sup>18</sup>

The point of concern however, is not over the validity of these noble objectives but rather it is over the contribution these objectives can make to rural development if implemented.

In Mbita division it was noted that such health services are greatly needed if the health conditions of the population is to be improved. There are only seven health care centres in the division.

These are :-

- (a) Mbita Dispensary in Gembe location.
- (b) Kitare Health Centre also in Gembe location.
- (c) Sindo Health Centre in Kaksingri location.
- (d) Magunga Health Centre in Gwasi location.
- (e) Ogongo Dispensary in Lambwe location.
- (f) Sena Health Centre in Mfangano and
- (g) Kaswanga Hospital (Foreign donated) in Rusinga.

The first striking feature of these available health care centres is that the division has only one hospital; that is Kawanga Hospital in Rusinga island. The geographical location of Kaswanga within the division means that this hospital is not accessible to most people in the division because in the first instance Kaswanga is in the far extreme western end of Rusinga island and if the island is detached from the mainland and from Mfangano island, Kaswanga is even more detached. What makes matters worse is the inadequacy of transportation facilities both within the island and between the island and the mainland.

The study did not obtain the patient/bed ratio of this hospital but what is clear is that it is not a large establishment because basically it was meant to serve only the island whose population is now about 9,352 people (1979 Census). The smallness and remoteness of the hospital to most areas of the division therefore means that the division is virtually without an inpatient health care centre and this is critical to the health of the population which now number about 83,863.



The second feature which is of course encouraging is that each location has a health care centre with the exception of Gembe location which has two. These are the ones at Mbita and Kitare. However, looking at the geographical distribution of all these health care centres and with the problem of transportation in mind, it is evident that most of them are inaccessible to most people in the same locations. In considering the available health facilities in the division therefore, one is left with the open impression that the facilities are hopelessly inadequate to serve the total population. Thus whereas the study notes the need for the provision of more health facilities in the division, the most relevant point is that the inadequacy of health facilities is a general problem to development and this may have negative effects on the agricultural sector.

#### 4:4:4: Education

Education is important for economic; social and political development. It creates awareness and exposes people to several areas of knowledge. In short, education removes ignorance. It is therefore to the credit of the Kenya government for having made primary education free.

However, for rural development two aspects of education are important for consideration here:-

- (a) It is necessary that the kind of education given to the primary and secondary students be relevant to the development needs of the rural

areas so that when the students leave school they can be employed in the rural areas to boost the labour force there. This may help enhance rural development but more so the agricultural sector which still forms the backbone of the rural economies. It is in this sense that this study makes a note on the relevance of education to agricultural development.

The question of education and rural labour supply is not a subject matter for detailed discussion in this study. Suffice it to mention that the high level of illiteracy and the lack of relevant education for potential rural labour force are critical issues to agricultural development in the study area. Since illiteracy is a national problem in Kenya; the solution to this problem must be sought within a national framework. It is encouraging that the government is making an attempt at re-directing the educational programmes in schools towards more technical and vocational skills.

- (b) The second aspect of education which is important for rural development is that of farmer education. This has been discussed earlier in this chapter.

#### 4:4:5: Energy

Energy is increasingly becoming an important consideration in rural development in Kenya. For most rural economies the most important sources of energy are firewood, charcoal, timber, kerosine, cow dung and even maize cobs. Of all these sources of rural energy supply, timber and wood are the most important.

In the division of study wood is the most important source of energy. However, wood is in short supply because the original forests and bushes have been cleared either for settlement or for other economic activities especially agriculture. Lambwe Valley which used to be a forest area is an example of an area whose original vegetation has been cleared to give room for settlement and crop cultivation. Thus as far as the future energy supply in the division is concerned, there is every need for the people to begin planting trees so that future needs may be ensured. Tree planting has added advantages in the sense that the trees will safeguard against soil erosion and will also help to conserve water especially if planted in the higher areas like in northern Gwasi where water supply is a problem in the dry periods.

As the rural areas begin and continue to industrialize, there will be need to look for more efficient energy supply sources i.e. oil, gas, solar energy, wind-power and biogas. Thus the important point here is that for rural and agricultural development, energy considerations become important since energy supply makes its own contribution to development.

#### 4:4:6: Housing

The quality of life in the rural areas cannot be improved without improvement in the quality of houses in these areas. Shelter is a basic human need and any development must take this into account. The provision of decent housing for the rural people is therefore a necessity for rural development.

In Mbita division most of the housing structures are of low quality usually of grass thatched roofs and mud built walls. The poor quality of housing structures in the area is a function of the low incomes of most people. Unless the incomes are raised, the quality of houses will remain low and this implies low quality of life. Thus housing in the area is related to agricultural development in the sense that it is through improving agricultural production that more incomes can be earned to provide good quality housing and to raise the standard of living of the population.

#### 4:4:7: Summary

In the fore-going analysis, the main problems or constraints to agricultural production and development in the division have been identified to be the inadequacy of transportation facilities, the hilly nature of the topography and the soils; low rainfall, marketing problems, low level of education and lack of skills and lastly the inadequacy of extension services. There are however, other factors which the study did not examine into details but which were

noted for their relevance not only to agricultural development but to overall development of the division. The factors included water supplies, health facilities, energy supplies, industrialisation, education and housing. The study noted that there are problems and inadequacies in these aspects of development and that for a viable process of development in the division to take place there is need for attention to be given to these sectors.



Plate 3. A section of the C19 Mbita-Homa Bay road. Notice the poor conditions of this section. Such sections make the road impassable in wet periods.



Plate 4. Part of the Gwasi hills, the low lying sections could be cultivated to increase farmland, given technology.

because illiteracy and low level of education have been found to be associated with poor methods of production which leads to the underutilisation of the productive capacity of land and also the labour of the farmers themselves. In order for the resources to be fully utilized and level of production improved, the farmers must be educated to acquire the necessary skills. This is the essence for the provision of extension services and farmer training facilities.

#### 5:1:2 Economic Implications

Economically the implications of the constraints are that the District planning organisation must supply technical personnel to man the technical aspects of the development needs of the division. For example, technicians are required in the construction and maintenance of roads. The second economic implication is that adequate finance must be supplied if the development projects and programmes aimed at overcoming the constraints are to be undertaken. Since rural development cannot be viable with the development of the agricultural sector alone; consideration for the supply of funds and personnel should also include the needs of other sectors of development i.e. health; water supply and energy needs. One other important economic implication is with reference to the soils. The poor soils on the two Islands cannot allow for the development of agricultural production especially of the cash crops. It means that agriculture cannot be relied upon as a strategy for increasing the incomes of the people of the Islands. This calls for a differential development planning emphasis between the Islands and the mainland. The District Development planning organisation must therefore seek ways of harmonising the development

projects and programmes on the mainland and those on the Islands.

### 5:1:3 Organisational Implications

In terms of organisation District Development planning will have to rely heavily on the local people for the success of the programmes and projects aimed at overcoming the constraints. This is because the local people are important for the contribution of labour and even finance for projects implementation. Local level organisations must therefore be strengthened to enhance people's participation in the planning process.

The above are the implications and the issues which the District Development planning organisation must deal with in order for the agricultural problems in the division to be overcome. However, there are certain problems which have made the structure and process of District Development planning less effective in executing the planning and implementation of development projects and programmes. Unless these problems are solved, planning at the district level will not be able to fulfil some of its responsibilities. The problems (which are discussed below) are however not unique to South Nyanza as a district or Mbita as a division, but are widely experienced in other parts of Kenya as well. This is because the rural planning structure and process with the district as the basic planning unit is a national strategy of planning for rural development and therefore the inherent problems or weaknesses of this strategy are spread throughout the country. However, minor variations do exist from one rural area to another depending on development emphasis. Where special cases exist in the study area, this will be noted.



5:2 Problems of District Development Planning  
Organisation and Process.

The problems facing District Development Planning may be divided into historical, organisational, personnel and financial aspects.

5:2:1 Historical

The strategy of planning for the development of the rural areas through District planning is a recent development in Kenya. It is only in 1974 that the Kenya government decided on "the administrative unit of the district as the convenient unit of planning for rural development."<sup>19</sup> One of the aims of this move was "to decentralize planning."<sup>20</sup> At the same time the choice of the district was selected because the government wanted to have a control over the process of planning through its provincial administrative machinery. In this regard the old organisations of the District Development Advisory Committee and the District Development Committee were merged and the latter name retained. The chairmanship of the new committees was then vested on the District Commissioners who then became both the administrative and the nominal District planning heads.

The problems which face District development planning out of the above historical developments are that:-

- (a) Due to the embryonic status of this planning strategy it hasn't had enough time to have a firm foundation and influence in the discharge of its responsibilities. This weakness is reflected, for example in the inadequacy of manpower for running the machinery, a point which will be made clearer shortly below.

(b) The administrative criterion for the choice of the district seems to have been over-emphasized. This is because there are certain objectives which have become difficult to fulfil due to problems of intergration of the economic and social activities within individual districts. To give one illustration to support this statement, one of the objectives of District planning was to decentralize planning so that the rural masses for whom the plans were meant would participate in the planning process. However, in the study District and Division it was found that the people actually don't participate in the planning process because in the first instance of all the six locations of the division, there was none with either a locational or a sub-locational Development Committee. This reflects that the social and economic activities in the area are not intimately linked to the District Rural planning process and machinery since it is the local Development Committees which are supposed to organise the people's identification of development needs and priorities. The district as a planning unit therefore seems a bit detached from the people.

#### 5:2:2 Organisation

Consequent upon the above argument another of the weaknesses of the District Development planning machinery and process is its organisation. Attention is drawn to the reader on the planning information flow chart No. 1 in chapter 2 which summarises the structure of the planning machinery or its organisation.

In understanding the problem related to organisation, reference should also be made to chart No. 2, on the structure of agricultural planning organisation in Kenya.

According to chart No.1 District planning is supposed to begin from the grassroots through the sub-locational Development Committees. Chart No. 2 also shows that the lowest extension-worker is supposed to serve a sub-location in order to be closer to the farmers. The study found that there are no locational and sub-locational Development Committees in the whole of the division. It was also found out that only two locations had resident extension officers. The absence of local Development Committees means that the District Development plans have no grassroots support since there is no way through which the people can take part in decision-making. Thus the only available forums on which the people can air their views are the chiefs' barazas and at the Divisional Development Committee where each location is represented by the chief and the councillor. Whereas these representatives may well present the people's problems and needs, the question is open to debate how representative their views may be of the people's needs and priorities. Even the chiefs' barazas may not be the ideal forums for airing people's views because as is common most people attend barazas simply to hear what the government wants to be done. This information is usually delivered and expected to come through the chief. The lack of locational and sub-locational committees is also confirmed by "Oyugi, W.O."<sup>21</sup>

Thus in the context of the information flow chart of planning, the system is not functional in the division, at least not in the locations and sub-locations. It can therefore reasonably be said that the District planners are divorced from the rural masses and rarely accommodate their views in the planning process. A point to be noted here is that the DDC does not identify development projects. It only ratifies and implements sectorally identified projects and development programmes. Thus in the agricultural sector for one example, it only approves and implements projects and programmes prepared by the District Agricultural Committee. In the context of the flow chart No. 2 on the structure of agricultural organisation, the absence of extension officers at the sub-locational level and their shortage at the locational level therefore means two things:-

- (a) That the farmers are not adequately supplied with extension services.
- (b) That the agricultural projects and programmes identified by the District Agricultural Committee also lack grassroots support because the extension officers are not close enough to the farmers to know their problems.

In order for the District planning process to be fully functional according to charts numbers 1 and 2, there is need to encourage the "formation of the sub-locational and locational Development Committees"<sup>22</sup> so that farmers' and people's views may be given a fair representation. The Divisional Development Committees should also be strengthened through increased representation of the people. If the sub-locational, locational and Divisional development committees are strengthened, District Development planning could have a much stronger and wider

organisational foundation on which to base and rely upon in co-ordinating district development projects and programmes. "Community Development Committees and other such organisations should also be encouraged and directed towards helping to form a strong grassroots planning base."<sup>23</sup>

#### 5:2:3 Personnel

District Development Planning also faces the problem of inadequacy of personnel to man the planning machinery. In the division of study the inadequacy of personnel especially the extension workers has been mentioned in relation to organisational problems and need no mention here again. What is more to add here is that if the local level Development Planning Committees have to be strengthened organisationally there is "need for the deployment of more qualified personnel"<sup>24</sup> to man the local planning machinery especially at the divisional and locational levels. This will go along way in helping to achieve the government's objective of expanding "field staff to provide technical aid in project design; implementation, audit and evaluation."<sup>25</sup>

#### 5:2:4 Finance

District Development Planning has two funds. These are:-

- (a) The Rural Development Fund which is meant for financing small rural projects.

- (b) The District Development Grants. These are supplied by the central government on the application of a particular District Development Committee. They are not attached to any specific sector of development but can be used as the District Development Committee feels necessary.

The point, however is that the funds are not adequate to help in the full implementation of all intended District Development projects and programmes. The problem of finance is not an isolated one in the case of District Development Committees but is a national one. The available funds to the District Development Committees are just not enough to cater for all the development needs of the rural areas especially given the high rate of population growth in most of these areas. The high demand and need for services and facilities are therefore a major cause of the financial constraint.

It is the inability of the government to cope with the people's demands for services i.e. health, education and other infrastructural facilities which has led to the development of self-help initiatives in the provision of services and facilities. This has gone along way in helping the development of the rural areas. Harambee (self-help) schools, hospitals, dispensaries, roads, and churches are examples of such self-help development initiatives. Examples of such self-help initiatives in Mbita Division include, the Kitare health centre in Gembe location, Rowo Secondary school in Kaksingri location and Kakimba Secondary School in Mfangano location.

One important point to be noted for comparison purposes is that the problems pertaining to Mbita division in agriculture and other aspects of development are not unique in the context of South Nyanza district as a rural planning unit. This is because the whole of the district is under the planning care of one organisation and the problems of the District Development Committee as cited by the specific examples from Mbita are also more or less reflected elsewhere in the district. Another factor for the similarity between the divisions of the district in terms of development problems is that there are not sharp variations in the physical, ecological, social and economic characteristics within the district. As a result of the similarities there are no major variations in the level of incomes among the people of different divisions. Therefore the development problems, especially those in agriculture, facing different divisions are more or less the same.

### 5:3 Strategies for Overcoming the Constraints

The attempt to overcome the constraints to agricultural development in Mbita division will depend on the effectiveness of the District Development Planning Organisation. The effectiveness of this organisation will in turn depend on its ability to raise more development funds, to train and supply more technical personnel and to organise grassroots support in the planning and implementation of development projects and programmes.

In understanding the essence of the strategies below, the reader is referred to chapter 4 where the particular problems towards which these strategies are directed are discussed.

5:3:1 Transportation

In order for the transportation problems in the division to be overcome the following suggestions are made:-

- (a) The conditions of the primary road (C 19) from Mbita to Homa Bay should be improved so that it doesn't become impassable during the wet periods. All sections should be murramed in order to facilitate the movement of agricultural goods, services and persons. The essence of this suggestion is that this road is vital for the transportation of cotton, groundnuts, sunflower and maize grown in Lambwe and Gembe locations through which it passes and leads to Homa Bay which is a main marketing place in the district. In the case of maize, however, Mbita and other market places like Obando and Lwanda are important markets especially on the local market days. Similarly the road is vital for the purchase of farm inputs i.e. ploughs, jembes and fertilizers from Homa Bay which is a main commercial place within the district.

Apart from the agricultural reason, this road is vital for the trade between the people of the division and those in outside areas. It is particularly essential for the fish trade for the people of the Islands who prefer to market the fish in Homa Bay and other commercial centres outside the division where they fetch more money. Lastly the improvement of this road is necessary to facilitate passenger transport for business and other trips.

The exercise of improving the conditions of the C 19 road should also include the improvement of



the conditions of the E 119, E 117 and E 118 roads which are important feder and access roads.

- (b) The D 210 road from Karungu through Magunga and Sindo to Mbita should also be murramed and well maintained in order to make it usable in all periods. Its importance for agricultural activity is shown by the existence of cash crops in areas in Gwasi location through which it passes. (see map No. 11). The E 113, E 175 and E 115 roads which connect the D 210 road with its hinterland should also be well-maintained in order to enhance the transportation of produce to the main markets of Magunga and Karungu.
- (c) The E 175 road from Magunga to Sidede should be upgraded to a secondary road in order to make it possible for the people of Gwasi location to have a more direct route from Magunga to Homa Bay which apart from being the district headquarters is an important marketing and commercial centre. This action will shorten the distance and reduce the costs of transportation involved when farmers and other business persons move all the way from Magunga through Karungu and Aora Chuodho to Homa Bay. Secondly, the improvement and upgrading of this road will facilitate the development of the tourist industry in the Lambwe Valley game reserve; an area which has been earmarked for the development of tourism.
- (d) Apart from the existing roads, it is proposed that three new access roads be constructed.

- (1) The extension of the E 119 road to join Sindo in order to take the agricultural produce in the area as shown in map No. 11 and also to facilitate the movement of produce and persons between Lwanda and Sindo which are important market and local centres respectively.
  - (2) The construction of a road from Ragwe port through Rowo to Sindo to provide accessibility for the two areas to Sindo local centre. (see maps 11 and 12).
  - (3) The construction of a road from Nyangwethe through Kisege to Nyandhiwa which would provide the people of these areas with access to Magunga which is a market centre. (see maps 11 and 12).
- (e) For the Islands it is proposed that:-
- (1) The conditions of the minor road in Rusinga Island be improved to facilitate the movement of people both within the Island and between the Island and the mainland.
  - (2) Water transport between the Islands themselves and also between the Islands and the mainland especially with reference to Mfangano should be improved and more organized. Improvement should be in terms of the quality of the boats used and their services which should be regular. The quality of the boats should be improved from the usual traditional canoe to the use of motor boats. The organisation should

be privately and publicly undertaken. More public means of transport should be availed to supplement the present steamer service which though available is irregular.

Apart from the agricultural sector, the development of transport facilities in the division will promote and link growth centres and thereby enhance the overall development of the division. Growth centres are important for economic, social and political development. They act as export and import centres in which raw materials especially agricultural products are sold or gathered for export to outside markets. At the same time they act as distribution centres for various manufactured items and other goods and services required by the population. Government services are planned to concentrate in the growth centres and in this connection it is stated that "growth centres are designated as focii of trade, social services and communications which serve surrounding farm areas and which can significantly alter the pattern of migration and provide more even development of the nation as a whole."<sup>26</sup> As Kimani and Taylor also note, "the use of growth centres would provide an opportunity of linking the developing urban system with the developing rural system."<sup>27</sup> In the context of Mbita division therefore growth centres such as Mbita which is a rural centre, Lwanda and Magunga which are market centres and Sindo, Obando and Kiabuya which are local centres would provide links between local areas in the division and Homa Bay which is an urban centre in the district. The development of transport facilities, roads in particular, is to foster and enhance this relationship. It is for this reason that the improvement in the conditions of the roads in Mbita division is important not only for

agricultural development but the overall development of the areas.

One final remark to be noted is that the construction, improvement and maintainance or primary and secondary roads is not the direct responsibility of the District Development planning. This is the responsibility of the central government (Ministry of Transport and Communications). The District planning organisation concerns itself more directly only with the development of feder and access roads. However, since it is this organisation which is supposed to identify development projects within the district, it is part of its responsibility to make recommendations to the central government in order that the problems of transport within the district may be overcome.

5:3:2 Physical factors

- (a) With regard to the first problem of the reduction of farmland by the presence of hills especially in Gwasii location, it is most necessary that appropriate technologies be developed to help the farmers exploit the lands along the hillslopes since they are rich for agricultural purposes. Such farming practices like terracing and strip farming may go along way in solving the problem associated with the hills. In this exercise the assistance of extension workers is greatly needed.
- (b) With regard to low rainfall as a consequence of the hills, the problem could be overcome through the introduction of hybrid crops such as Katumani maize which yield faster than the local traditional maize and are more resistant to draught. Since such a crop can grow in drier conditions, its development may ensure that the

people have enough crop for subsistence and any surpluses may be sold to generate incomes.

Adoption of such a crop would, however, not be easy because culturally most of the farmers believe that the traditional maize is the best and it would take them some time to accept the new crops. This is another area where the agricultural officers i.e. extension workers should involve themselves in educating the farmers on the need for the change.

- (c) With regard to the soils, since the Islands cannot be productive for commercial crops (cash crops) it is suggested that fishing which is already an important economic activity be more developed in order for the people of the Islands to earn more incomes.

In this regard one measure which may be undertaken is the development of fishing co-operatives so that the distribution and marketing of the fish may be organised. The co-operatives will ensure that the fishermen get the best storage, and marketing facilities and that payments are not delayed. The Mbita Fishing Co-operative Society on Mbita Beach which is formed by some fishermen on the mainland is a young organisation but is a precedent for such an organisation on the Islands.

It is also necessary that loans be advanced to such an organisation in order to make it possible for the members to buy more fishing nets and to acquire more efficient fishing boats. Beach facilities should also be developed in order to ensure that the boats have safe berthing places.

The above measures may go along way in achieving the government's aim of developing the fishing industry and development planners ought to look into this issue as one of the ways of helping to increase the incomes of the people not only of the Islands but even those on the mainland of the division who live close to the Lake Victoria.

Another measure which may be undertaken in order to raise the incomes of the people of the Islands is the development of the Tourist Industry. The Islands have scenic sites which if well developed may attract tourists and thereby create some employment opportunities for the people. This suggestion is not remote especially when consideration is given to the fact that in the nearby Lambwe Valley area there is already a game reserve being developed for the tourist industry. The circuit of this tourist industry development should be extended to include the Islands. The end result is that this industry would provide employment opportunities not only to the people of the Islands but also those on the mainland.

5:3:3 Low Rainfall

- (a) One measure of off-setting the effects of low rainfall in the division has been discussed under physical constraints.
- (b) The other alternative of solving the problem of low rainfall would be the initiation of a water project which would provide water for irrigation. At present there is a proposed water project for the whole division but this project will serve water only for domestic demands. This water project could be extended in terms of capacity to include water for

irrigation purposes. The advantage of the availability of water for irrigation purposes is that it will make it possible for a wide variety of crops to be grown and also the period of growth of crops will not be limited.

However, there are certain problems which make the possibility of water supply for irrigation purposes almost nil. The incomes of most people of the division are low and since such a project will require a huge amount of capital investment, it is almost out of their reach to develop on their own. It will require a lot of external aid of which even the resources available to the District Development Planning cannot be adequate. It means therefore that for such a project to be undertaken other sources of funds and technical personnel must be sought.

In this regard it is suggested that the Lake Basin Development Authority which is charged with the responsibility of developing the resources of the lake basin should carry out feasibility studies in order to determine if such a project can be viable in Mbita division and even in other neighbouring areas. If feasible and undertaken, such a project can go along way in helping the development of agricultural production in Mbita and the other areas near Lake Victoria and would ensure the generation of increased incomes from agriculture.

#### 5:3:4 Marketing

- (a) With regard to the first marketing problem of the inaccessibility of markets, it is suggested that the solutions to the transportation problems will take care of this.

(b) In solving the second marketing problem of delays in payments to farmers, it is suggested that the farmers be encouraged to form co-operative societies through which the payments can be handled. There are several advantages in the formation of co-operative societies:-

- (1) The co-operatives will not only handle the issue of payments to farmers but before this is even done they will ensure that the produce is well marketed on behalf of the members. The co-operative organisations will also negotiate on market prices on behalf of the members.
- (2) The organisations will also provide the members with information relating to farming trends and the whole market situation regarding the individual crops involved.
- (3) Through the co-operatives, the farmers may be able to get credit facilities i.e loans through which they can enhance the cultivation of crops and the development of individual farms. The loans being advanced through the Intergrated Agricultural Development Programme (I.A.D.P.) approach which are meant for small-scale farmers would be very appropriate for the farmers in the division since this is a small-scale farming area. The formation of co-operatives is therefore essential in order for this facility to be taped.



- (4) The co-operatives organisations will also help in educating the farmers on the best ways of crop production and animal husbandry. The use of such crop yielding inputs like fertilizers could be encouraged and adopted through co-operatives' initiatives. Co-operatives can also avail seeds to member farmers.
- (5) Lastly since the co-operative organisations will handle most of the farmers problems, this will spare individual members more time within which they can concentrate on farm activities.

The only existing co-operative society in the division, that is, The Lambwe Cotton Farmers' Co-operative Society should be encouraged to enroll more members. Other societies should also be formed to cater for the farmers in other areas of the division. These societies should not only cater for cotton but also for other crops such as groundnuts and sunflower.

#### 5:3:5 Low Level of Education and Lack of Skills

In order for the above two problems to be overcome, extension services should be intensified. The role of extension workers should include:-

- (a) The encouragement of such farming methods as mixed cropping, multiple cropping, crop rotation and the use of pesticides and insecticides for disease control.

- (b) Encouragement of farmers to diversify their crops. In this regard while attention should be paid to the development of subsistence production, the emphasis should be on cash crop production. In particular the growth of cotton which is favoured by the soil and climatic conditions of the division should be encouraged. This would suit the "Intergrated Agricultural Development Programme Approach which is meant to cater for the development of subsistence and cash crops among small-scale farming communities."<sup>28</sup> It will also increase the "size of the incomes and narrow the rural-urban income gap."<sup>29</sup>
- (c) Advise to farmers should also include soil and water conservation methods.
- (d) The farmers should also be encouraged to attend refresher courses. The Homa Bay Farmers' Training College should expand its training facilities and opportunities to enable more farmers to acquire more knowledge on modern farming methods and technologies. This would lead to "increased farm productivity and more job creations at the farm level."<sup>30</sup>
- (e) On livestock farming, the farmers should be encouraged to attempt reducing the number of livestock kept. The average number of cattle kept is 12 and considering that the population is increasing and the average acreage per family is only 5; this measure is necessary to be undertaken. It is however, noted that the cultural and economic values attached to livestock especially cattle, may make the farmers resistant to such a move. In many instances people tend to be resistant to "such cultural and social changes."<sup>31</sup>

- (f) The quality of the cattle in particular could be improved by cross breeding through artificial insemination. The improved quality of cattle will generate incomes especially from milk and will ensure that the effects of the reduction in the number of cattle as proposed above are minimised.
  
- (g) Veterinary services should be increased to make the two previous suggestions a success. Such services will safeguard against diseases such as foot and mouth disease. In this regard the International Centre of Insect Physiology and Ecology (ICIPE) station at Mbita should do more research to help veterinary officers in curbing livestock diseases.
  
- (h) Local farmers should construct cattle dips through self-help initiatives to ensure that the cattle and other livestock are free from diseases such as those spread by ticks.

One remark to be made in this section is that the success of the suggestions made above depends to a very large extent on land tenure system. As a result the system of land ownership should also change from the traditional communal ownership to individual ownership in order to give individual farmers more freedom on the development of their lands. Thus land adjudication and registration whose advantages are discussed in chapter 3 and which is currently taking place in the division should be completed quickly to enhance the process of agricultural re-organisation and change.

### 5:3:6 Inadequacy of Extension Services

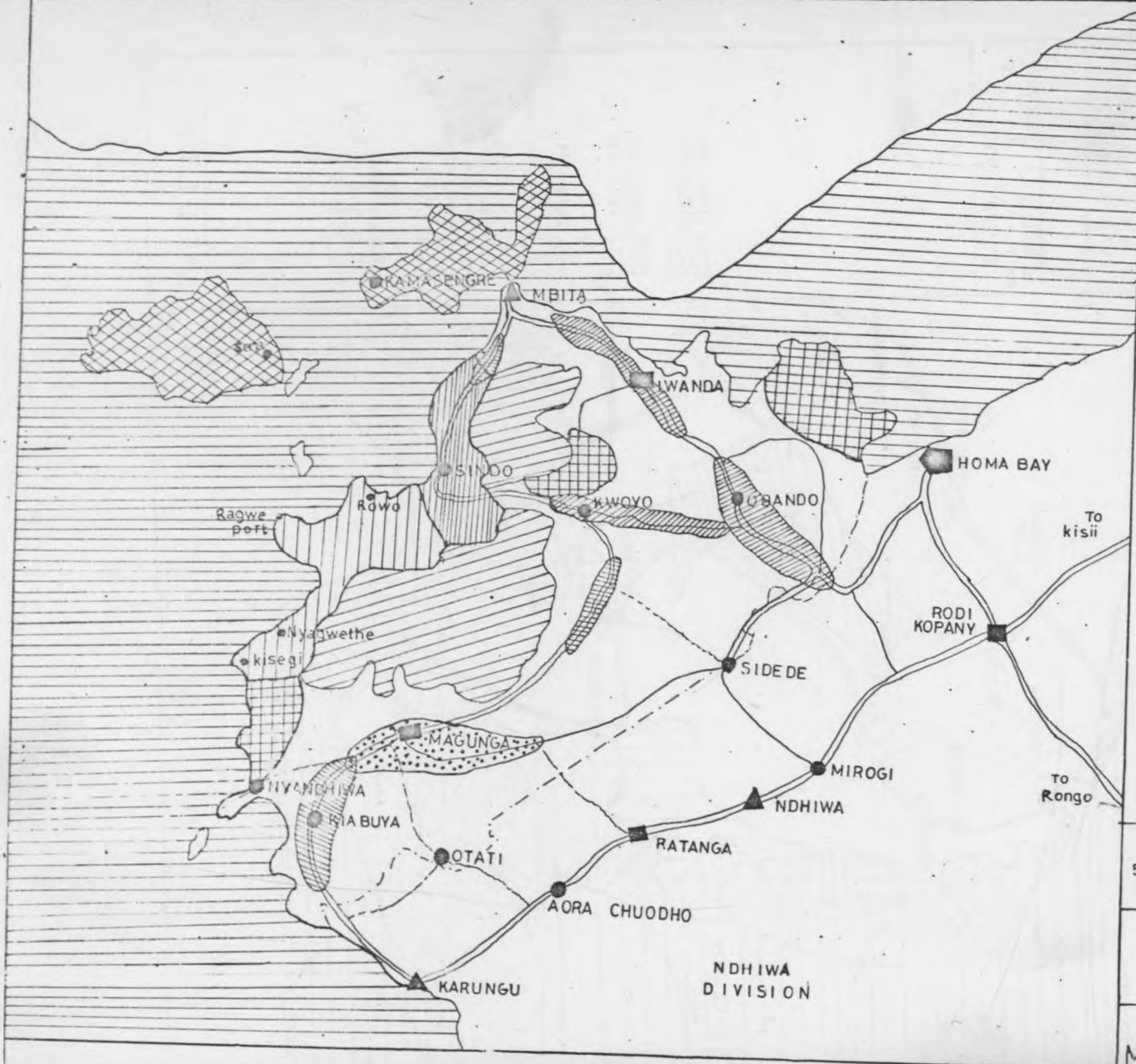
In order for this problem to be overcome, more extension workers should be supplied in order that an increased number of farmers can receive such services. Also the quality of the extension workers should be improved through training in order to make them deliver quality information and services.

### 5:4 Summary








One final remark to be made is that notwithstanding the weaknesses of the District Development Planning, the author feels that planning for the rural areas should still continue to be exercised from the District headquarters. The essence of this opinion is that the resources available in the country cannot be adequate to supply the needs of each division if every division in the country were to be made a rural planning unit. There is scarcity of finance, technical personnel and other resource requirements for a viable planning process at the district level. This means that the task of the supply of resources for planning would be more difficult if every division were to be made a planning unit. Furthermore some divisions (not Mbita in particular) are too small to form any meaningful geographical, economic and social units of planning. What therefore needs to be done at present is the strengthening of the lower level planning hierarchies while the district remains the basic planning unit.

Despite the problems of the District Development Planning, the government should make an attempt at supplying trained personnel and more funds in order to reinforce the effectiveness of this organisation. In the case of the farmers' problems in Mbita division

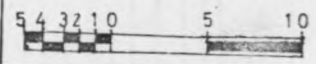
unless the problems facing the District Development Planning Organisation and process are solved, the problems to agriculture in the division will take along time to be overcome.



### LEGEND

-  IMPASSABLE IN WET PERIODS
-  LACK OF TRANSPORT
-  LOW RAINFALL/LACK OF TRANSPORT
-  LOW RAINFALL
-  TRANSPORT AND MARKETING PROBLEMS
-  POOR SOILS
-  HILLY TOPOGRAPHY

SCALE (KM)








AKUNGO B D O  
M A PLANNING II  
1979/80

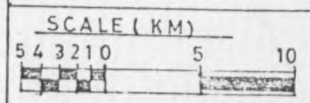
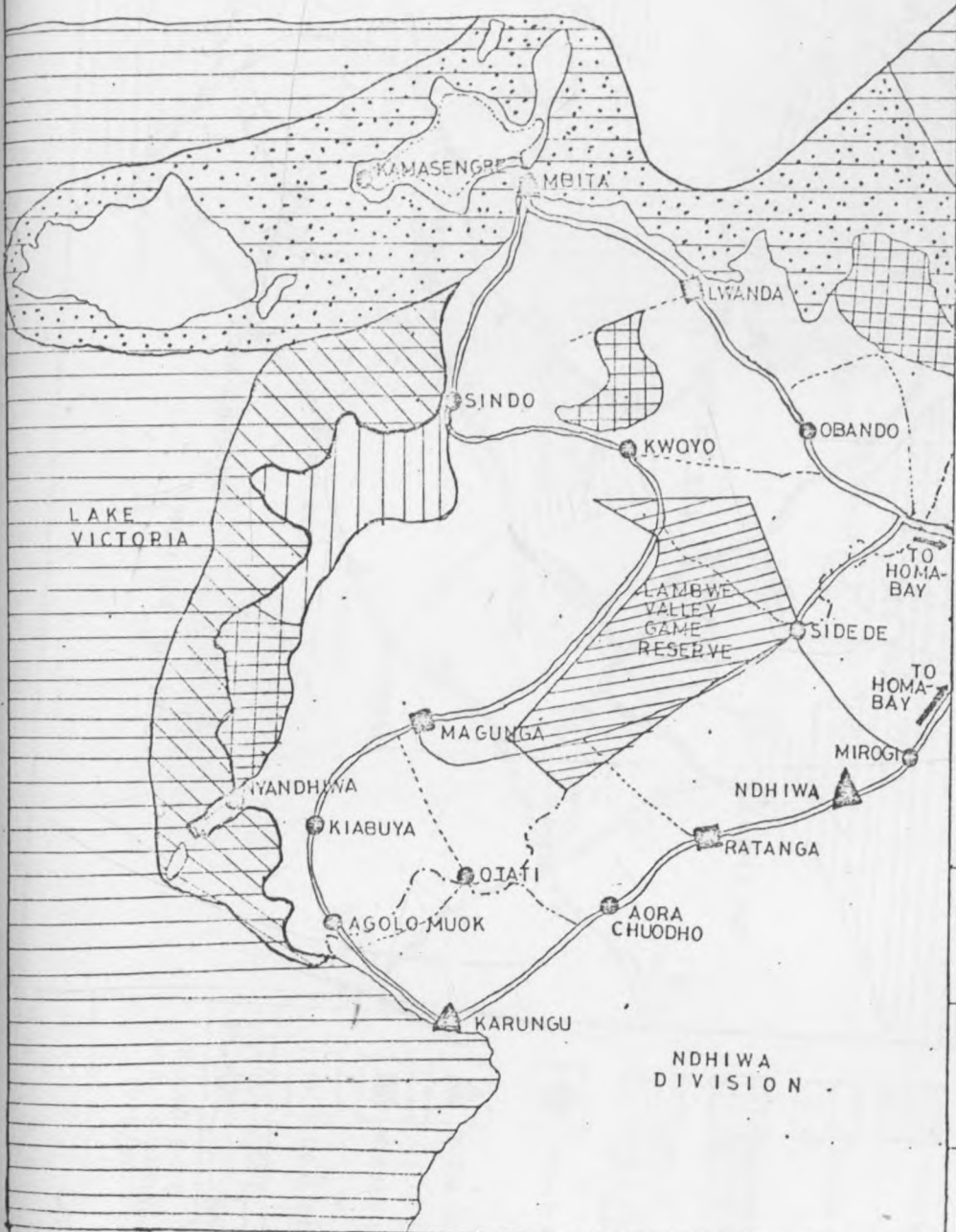
MAP NO.13



## CONSTRAINTS

# LEGEND

-  POTENTIAL AGRICULTURE/ NO ROADS
-  POTENTIAL AGRICULTURE/ NO ROADS/ LOW RAINFALL
-  POTENTIAL FISHERIES AND TOURISM
-  POTENTIAL FISHERIES
-  POTENTIAL TOURISM

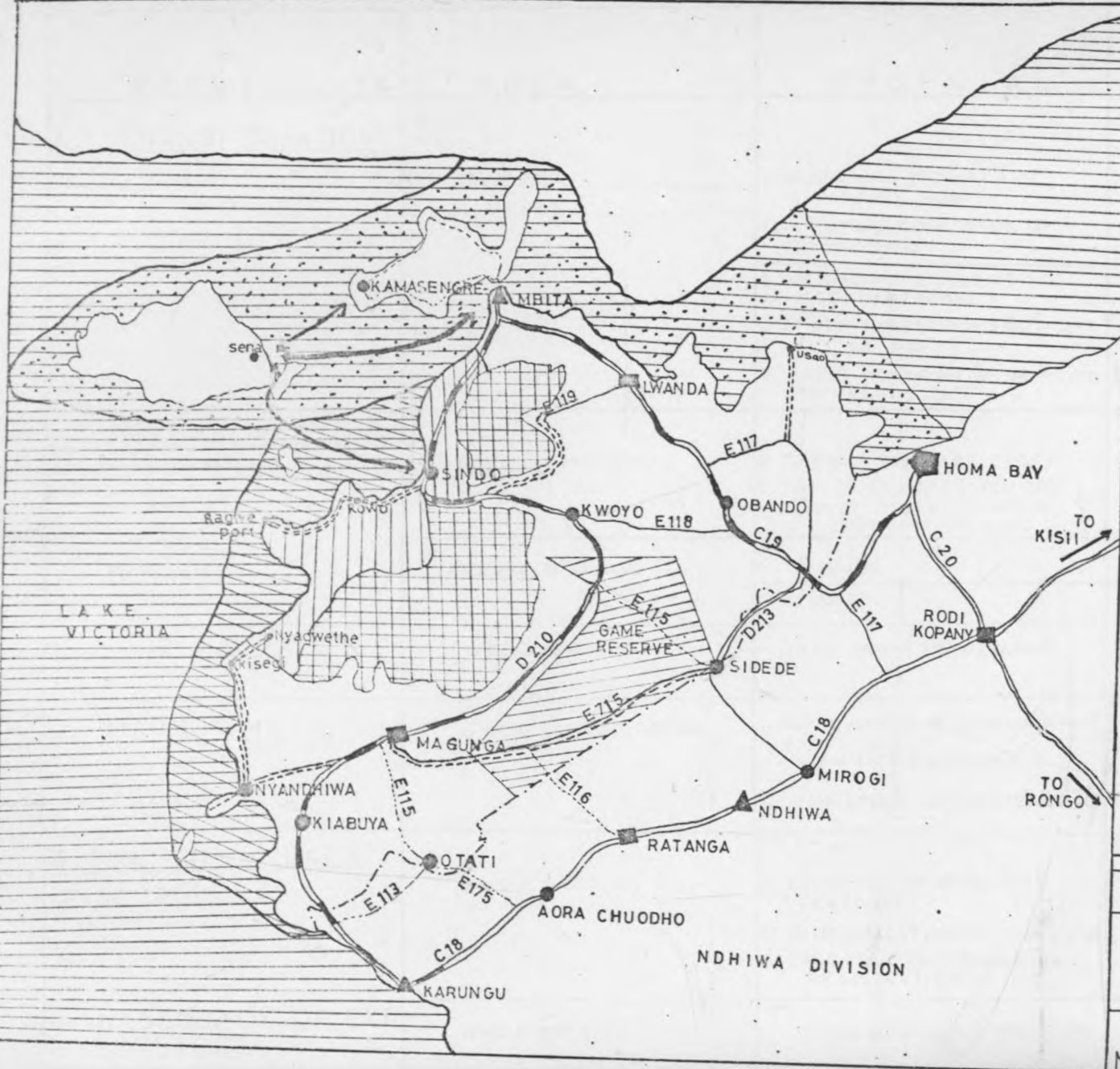


AKUNGO B.D.O  
M A PLANNING II  
1979/80



MAP NO14

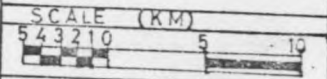
## RESOURCE POTENTIAL



- LEGEND**
- MURRAMING
  - UP GRADING
  - PROPOSED
  - FISHING AND TOURISM
  - FISHING
  - TOURISM
  - WATER TRANSPORT
  - ENCOURAGEMENT OF DRAUGHT RESISTANT CROPS
  - DEV. OF TECHNOLOGIES FOR EXPLOITING HILLSLOPES
  - URBAN CENTRE
  - RURAL CENTRES
  - MARKET CENTRES
  - LOCAL CENTRES

TO KISII

TO RONGO



AKUNGO B-D-O  
M-A PLANNING II  
1979/80

MAP NO.15



CONSTRAINTS	AREA	PROPOSAL	PLAN PERIOD
1. <u>TRANSPORTATION</u>			
ROADS	MAINLAND	1. MURRAMING PRIMARY AND SECONDARY ROADS	SHORT TERM
WATER TRANSPORT	ISLANDS	2. IMPROVING CONDITIONS OF MINOR ROADS	
		3. UP GRADING E 715 ROAD TO SECONDARY ROAD	LONG TERM
		4. 4 NEW ACCESS ROADS PROPOSED see map 15	
		5. WATER TRANSPORT BE IMPROVED AND ORGANISED	
2. <u>PHYSICAL FACTORS</u> TOPOGRAPHY (HILLS)	GWASI, KAKSINGRI	1. DRAUGHT RESISTANT CROPS 2. DEV. OF TECHNOLOGIES OF EXPLOITING HILL SLOPES (short and long term)	SHORT TERM
POOR SOILS	RUSINGA MFANGANO	1. FISHING	SHORT AND LONG TERM
		2. TOURISM	LONG TERM
3. <u>LOW RAINFALL</u>	WHOLE DIVISION	(SEE UNDER TOPOGRAPHY)	
4. <u>MARKETING</u>	GWASI LAMBWE GEMBE	1. IMPROVEMENT OF TRANSPORT FACILITIES (see under transportation)	SHORT TERM
		2. FORMATION OF CO OPERATIVES	LONG TERM
5. <u>LOW EDUC. / LACK OF SKILLS</u>	WHOLE DIVISION	1. EXPANSION OF EXTENSION SERVICES 2. INTENSIFICATION OF LAND USE 3. LAND ADJUDICATION AND REGISTRATION	SHORT AND LONG TERM SHORT AND LONG TERM SHORT TERM
6. <u>INADEQUACY OF EXT. SERVICES</u>	WHOLE DIVISION	1. MORE EXTENSION WORKERS	SHORT AND LONG TERM

## C H A P T E R 6

### 6:0: SUMMARY AND CONCLUSION

In this chapter the study summarises the major field findings in relation to the problem which the study set to examine and the objectives which were aimed at.

#### 6:1: The Problem

The main problem which necessitated the choice of study is the low level of agricultural production and development in Mbita division of South Nyanza District. The average net farm income in the division is only KShs.1,545 per annum. This income is inadequate to supply the basic needs of food, shelter and clothing given the fact that the average family size in the division is 7. The study therefore set to examine the causes of the low level of production and development in the division.

#### 6:2: Objectives

The study objectives were:-

- (a) To identify the constraints to agricultural production and development in the division.
- (b) To examine the relationship and implication of the constraints to the rural planning organisation and process.

- (c) To suggest planning strategies for overcoming the constraints with the aim of improving agricultural production in the division.
- (d) To suggest policy recommendations for ensuring sustained overall development of the division.

6:3: Major research findings.

The main problems or constraints to agricultural production and development in the division were identified as:-

- (a) The inadequacy of transportation facilities.
- (b) Physical constraints (Topography and soils).
- (c) Low rainfall.
- (d) Marketing problems.
- (e) Low level of education and lack of skills.
- (f) Inadequacy of extension services.

Apart from the above factors which are directly related to agriculture, the study also noted problems in other aspects of development which were considered important and necessary to be taken into account for future agricultural and overall development of the division. The problem areas noted were in relation to water supplies, health facilities, energy, housing, education and the need for industrialisation in the area to supplement incomes from the agricultural sector. It is important to note that the study did not go into the details of these problems but only noted them for their relevance for agricultural development in the division.

In relating the above constraints (a to f) to the rural planning organisation and process the study found that there are problems which incapacitate the District Development Planning organisation and which make this organisation unable to effectively plan and undertake development projects and programmes aimed at developing the rural areas.

The problems are:-

- (a) The weak organisational structure of District Development Planning especially the lack of grassroots developments organisations i.e. the locational and sub-locational development committees.
- (b) The inadequacy of technical personnel.
- (c) The inadequacy of development funds and lastly
- (d) The newness of the District Development Planning strategy is partly a cause of the first three problems.

#### 6:4: Recommendations

In order for the constraints to agricultural production and development in the division to be overcome, the following recommendations are made:-

##### 6:4:1: Transportation.

(a) Short-term

- (1) The conditions of the existing primary and secondary roads be improved by murraming and thereafter be well maintained.
- (2) The conditions of the feder roads to be improved.

(b) Long-term

- (1) That the E715 road be upgraded to a secondary road.
- (2) Three new access roads to be constructed as shown in Map no. 15.
- (3) That the water transport for the islands and between the islands and the mainland be improved and more organized. (This is suggested to be a short and long-term exercise).

Implementation

- (a) The District Development Committee to supply finance and personnel to implement work on the feder and access roads.
- (b) Local initiatives to be encouraged in the supply of labour and finance where possible to supplement the DDC efforts.

- (c) The DDC should co-ordinate with the Central government (Ministry of transport and communications) in ensuring that the primary and secondary roads are improved and well maintained.
- (d) Local initiatives to be encouraged in the water transport industry.

6:4:2: Physical factors

(a) Short-term

- (1) Drought resistant crops i.e. Katumani maize to be introduced and encouraged to off-set the effects of low rainfall.
- (2) The fishing industry to be encouraged in order to generate more incomes to the people of the division especially those living on the islands to off-set the effect of poor soils. This should also be a long-term exercise..

(b) Long-term

- (1) Technologies to be innovated to help the farmers to exploit the hill slopes and increase the area of land available for crop cultivation.
- (2) The development of tourism to be encouraged on the islands in liason with the already existing Lambwe Valley Game Reserve Tourist development.

Implementation

- (a) The Central government (Ministry of Tourism) to co-ordinate with the DDC in the endeavour to develop tourism.
- (b) The DDC, particularly the District Agricultural planners to help the farmers to innovate appropriate and inexpensive technologies.

6:4:3: Low level of education and lack of skills

(a) Short-term

- (1) Expansion of extension services i.e. the increase in the number and quality of extension workers.
- (2) Land adjudication and registration.

(b) Long-term

- (1) Intensification of land use.

Implementation

- (a) The DDC, in particular the District Agricultural Committee to supply more extension workers.
- (b) The Central government (Office of the President, Department of Lands) to complete land adjudication and registration which is presently underway.

6:4:4: The District Development Planning

- (a) From the study observations and findings the author's opinion is that the district should continue to be the basic planning Unit for the rural areas.
- (b) The government should increase efforts to reinforce District Development Planning through the provision of more development funds and the training and supply of technical personnel.
- (c) Local Development organisations i.e. the Sub-locational and locational Development Committees plus the Divisional Development Committees to be strengthened to provide District Development Planning with a strong organisational base in the planning process.

6:5: Future research areas.

From field observations and findings, one aspect of development which could fundamentally help to increase agricultural production in the division is the development of an irrigation scheme. There is enough water which could be availed from the lake.

At the same time the soils especially on the mainland can allow for the growth of a variety of crops. Research on the feasibility of an irrigation scheme in the division is therefore an exercise which might contribute to the development of agriculture in the area. Such a scheme if undertaken may also help



to overcome the problem of domestic water supply which this study noted but which was not investigated due to the scope and time limitations of the study.

Another area which could be an interesting follow-up to this study is research on the impact of land adjudication and registration on agricultural development. Land registration is taking place in the division at present and it would be interesting to find out what organisational and production changes in agriculture this exercise would have.

#### 6:6: Conclusion

This study set out with the assumptions that transport and physical constraints were factors contributing to the low agricultural production and development in the division. According to the field findings it has been proved that the two factors have a relationship and indeed negatively affect agricultural production. In the course of field research however, other factors were also identified to be related to the low agricultural production and development in the division (See 6:3).

Thus notwithstanding the presence of any other factors negatively affecting agricultural production and development in the division, it can be said that the identified constraints as outlined in 6:3 are the major set-backs to agricultural and overall development of the division.

The measures proposed in this study if undertaken may go along way in helping to overcome the constraints and thereby make a contribution to the improvement of the level of incomes of the local population.

REFERENCES

1. Kenya Government  
Development Plan 1979/83  
(ii), P. 11.
2. Ibid P. 14.
3. Ibid P. 43.
4. Ibid P. 15.
5. Alela, J.E.N. The role of roads as a means of economic development : A Case Study of Kakamega District.  
Unpublished M.A. Thesis,  
University of Nairobi, 1976.  
P. 93 - 95 and 187 - 192.
6. Madugha, J.K. The role of roads in rural and regional development in East Africa : Case Studies in Kenya and Uganda.  
Unpublished M.A. Thesis,  
University of Nairobi, 1975  
P. 111 - 121.
7. Ocharo, A.O. The role of rural transport systems in agricultural development: A Case Study of South Nyanza District  
Unpublished M.A. Thesis,  
University of Nairobi, 1977  
P. 140 - 141.
8. Op Cit. P. 44.
9. National Atlas of Kenya : Third Edition 1970,  
P. 23.
10. Ominde, S.H. Land and population in the Western District of Nyanza Province, Unpublished Ph.D. Thesis, London University, 1963.
11. Op. Cit. P. 27.
12. Central Bureau of Statistics, Ministry of Finance; Kenya. Population Census 1979.

13. Mbithi P.M. Rural Sociology and Rural Development - Its application in Kenya. East Africa Literature Bureau, 1974 P. 70.
14. Op. Cit. P. 107.
15. Jackson, T. "The laws of Kenya" E.A.L.B. 2nd Edition, P. 212-240.
16. District Development Plan 1974/78 South Nyanza District.
17. Op. Cit. P. 14.
18. Ibid P. 103.
19. Kenya Government, Development Plan 1974/78 P. 112. Para. 4. 20.  
  
See also Ndegwa Commission 1971  
Chapter 8.
20. A Manual For Rural Planning  
Institute of Development Studies, University of Nairobi, June 1974, P. 2.
21. Oyugi, W.O. in Rural Administration in Kenya, P. 72.
22. Ibid P. 72.
23. Ibid P. 71.
24. Ibid P. 72.
25. Op. Cit. P. 45 (Development Plan 1979/83).
26. Op. Cit. P. 87 (Development Plan 1970/74).
27. Kimani S.M. and Taylor D.R.F. The role of growth centres in rural development.  
Institute for development studies, University of Nairobi, Working Paper No. 117, 1973, P. 7.

28. Op. Cit., Development Plan 1979/83,  
p. 246.
29. Mbithi, P., Op. Cit. P. 71.
30. Ibid. P. 72.
31. Ibid. P. 115.

BIBLIOGRAPHY

1. Ann Siedman: Comparative Development Strategies In East Africa, E.A.P.H., 1972.
2. Central Bureau of Statistics, Kenya. Population Census 1962, 1969 and 1979
3. Clerk P. 6, Development Planning in E. Africa, E.A.P.H., 1965.
4. Goran, H. Development Administration : The Kenya Experience. Oxford University Press, 1970.
5. Government of Kenya. Integrated Rural Survey 1974-75 Basic Report, Central Bureau of Statistics.
6. Hans, R. Agricultural History Of Kenya, Weltforum Verlag Munchen.
7. Heyer, J. Rural Development In Kenya. E.A.P.H., 1971.
8. Institute for Development Studies, University of Nairobi. Second Overall Evaluation of Special Development Programme. Occasional Paper No. 12, 1975. Unpublished.
9. Institute for Development Research; Denmark: Dualism and Rural Development In East Africa, 1973.
10. I.D.S., University of Nairobi, Introductory Research Methodology; East African Publications; Occasional Paper No. 10, 1974.
11. I.D.S., University of Nairobi, The Lake Victoria Basin : Ecological Land Productivity as a Critical Policy Issue.

12. I.D.S., University of Nairobi,  
Strategies for Improving Rural Welfare, Occasional Paper No. 4, 1971
13. I.D.S., University of Nairobi,  
"The Special Rural Development Programme", Occasional Paper No. 8, Nairobi, 1973.
14. I.D.S., University of Nairobi,  
The Lake Victoria Basin : Resource(s) For Integrated Industrialisation.  
Series Paper No. 20, 1979,  
By Ogendo R.B.
15. I.D.S., University of Nairobi;  
Methodology Issues in a Study Of Resource Allocation Decisions Among Embu Farmers, July, 1979,  
By Haugerud A.
16. James, R.W., Land Tenure And Policy In Tanzania,  
pp. 38 - 47.
17. Kimani, S.M., Growth Centre and Rural Development In Kenya, Thika, 1973.
18. Kenya Government: Development Plans 1966/70 - 1979/83.
19. Leonard, D.K., Rural Administration In Kenya,  
E.A.L.B., 1973.
20. Mbithi, P.M. Issues In Rural Development,  
Discussion Paper No. 131, I.D.S.,  
University of Nairobi, 1971.
21. Muiruri, W., Rural Environment Data For Physical And Regional Planning in Kenya,  
Position paper prepared for Government of Kenya/UNEP/UNDP project on Environment and Development,  
February, 1979.
22. Mcloughlin, J.B., Urban And Regional Planning : A Systems Approach, February, 1979.

23. Nyanza Province Regional Physical Development Plan: Town Planning Department, Ministry of Lands And Settlement, 1970.
24. Njenga, F.X., African Land Tenure Concepts In Kenya, Dar-es-Salaam Law Journal (Formerly Journal of the Denning Law Society) Vol. 1 no. 1.
25. Omari, C.K., Strategy For Rual Development: The Tanzanian Experience E.A.L.B., 1976.
26. Okoth H.W.O., Property And Land Use In Kenya. I.D.S., Dp. 209.
27. Ojany F.F. and Ogendo R.B., Kenya : A Study In Physical And Human Geogrphy, Longman, 1973.
28. Ominde, S.H., Land and Population Movement In Kenya, Heinmann, 1968.
29. Obara, D.A., Cotton Production In The Lake Victoria Basin, I.D.S. Seminar Series On The Lake Basin Development Authority.
30. Raanan Weitz (Editor) Rural Planning In Developing Countries. Routledge and Kegal Paul 1965.
31. Swynnerton, R.J.M., A Plan To Intensify The Development Of African Agriculture.
32. South Nyanza District, Annual Agriculatural Reports 1973-78. Annual Agriculatural Reports (Mbita Division) 1977-78.
33. Sheffield, J.R., Education, Employment And Rural Development. Report Of The Kericho Conference of 1966, E.A.P.H., 1966.



34. Uma Lele: The Design For Rural Development, Lessons from Africa, John Hopkins, University Press, 1975.
35. Wanga, M.A., The Role Of Agricultural Co-operatives In Rural Development : A Case Study Of Kakamega District. Unpublished M.A. Thesis; University of Nairobi, 1978.
36. World Bank; Kenya, Appraisal Of The Integrated Agricultural Development Programme.

146  
9

APPENDIX

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

JULY - SEPTEMBER 1979

Constraints to agricultural development.

Mbita Farmer Questionnaire

Name of location.

Date of interview.....

Name of interviewer .....

Respondent.....Male.....Female.....

1. How old are you?

2. Where were you born?

- (1) Within Location                      (2) Outside Location
- (3) Within the Division                (4) Outside the Division
- (5) Other (specify)

3. If not born within place of residence, what are  
(a) reasons for migration?

- (1) Famine                                      (2) Draught
- (3) Land problem                            (4) Ethnic/Family quarels
- (5) Others (specify)

(b) When did you migrate?

- |                       |                       |
|-----------------------|-----------------------|
| (1) Between 1950 - 54 | (2) Between 1955 - 59 |
| (3) Between 1960 - 64 | (4) Between 1965 - 69 |
| (5) Between 1970 - 74 | (6) 1975 onwards      |

4 (a) How many members are in your family?

(b) How many males and females?

Males.....

Females.....

5 (a) Do you have any education?

- |        |    |
|--------|----|
| 1. Yes | No |
|--------|----|

(b) If yes, of what level?

- |                   |                        |
|-------------------|------------------------|
| 1. Informal       | 2. Village polytechnic |
| 3. Primary        | 4. Secondary           |
| 5. Post-Secondary | 6. Others (specify)    |

6 (a) How much land do you own?

- |                |                   |
|----------------|-------------------|
| 1. 1 - 4 acres | 2. 5 - 9 acres    |
| 3. 10-14 acres | 4. More (specify) |

(b) (i) Do you own land elsewhere?

- |        |       |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

(ii) If yes, how much?

- |                  |                   |
|------------------|-------------------|
| 1. 1 - 4 acres   | 2. 5 - 9 acres    |
| 3. 10 - 14 acres | 4. More (specify) |

(c) Do you have a title deed?

- 1. Yes
- 2. No

(ii) If no, would you like to have one?

- 1. Yes
- 2. No

(iii) If yes, why?.....  
 .....

7. How much land is under agriculture?

- 1. 1 - 4 acres
- 2. 3 - 4 acres
- 3. 5 - 9 acres
- 4. More (specify)

8. What crops do you grow?

Subsistence

Cash

- |    |    |
|----|----|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |
| 5. | 5. |

9. When do you grow these crops.....  
 .....

10. How much of each cash crop do you produce per season/year?

Crop

Bags/baskets

- 1.....
- 2.....
- 3.....

11. How much is a bag/basket of each of the crops?

Crop

Price/bag/basket (KShs.)

- 1.....
- 2.....
- 3.....

12. Where do you sell your produce?

- |                    |                     |
|--------------------|---------------------|
| 1. Within location | 2. Outside location |
| 3. Within division | 3. Outside division |

13. What means of transport do you use?

(a)

- |           |                     |
|-----------|---------------------|
| 1. Foot   | 2. Animal           |
| 3. Matatu | 4. Bus              |
| 5. Boat   | 6. Others (specify) |

(b) Do you face any transport problems?

- |        |       |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

If yes, what are the problems?

- 1.....  
2.....  
3.....

14. What agricultural inputs do you use?

- |                |                     |
|----------------|---------------------|
| 1. Jembes/hoes | 2. Ploughs          |
| 3. Tractors    | 4. Fertilizers      |
| 5. Cow-dung    | 6. Others (specify) |

15. (a) Do you keep livestock?

- |        |       |
|--------|-------|
| 1. Yes | 2. No |
|--------|-------|

(b) If yes, which ones?

- 1.....  
2.....  
3.....  
4.....





22. (a) Have you ever been given any loan for farming?

1. Yes

2. No

(b) If yes, how much?.....

(c) If no, why not?.....

23. What problems do you face in agriculture?

1. Rainfall

2. Pests

3. Transport

4. Marketing

5. Extension services

6. Others (specify)

24. What other problems do you face in this area?

1. Health

2. Education

3. Water

4. Others (specify)

25. How do you think some of these problems could be solved?

.....  
.....  
.....  
.....