

(i)

A STUDY OF PROBLEMS FACING A RECENTLY
SETTLED AGRICULTURAL COMMUNITY : A CASE
STUDY OF NJORO LOCATION.

BY

TIMOTHY WAIYA MWANGI

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

JUNE 1987



UNIVERSITY OF NAIROBI
LIBRARY

(iii)

DEDICATION

dedicated to my parents

Esther Nyagathii Mwangi

Paul Mwangi Waiya.

ACKNOWLEDGEMENTS

In carrying out my field work and writing this thesis many institutions and individuals were of great assistance to me.

I would like to record my appreciation to my supervisor Mr. S.V. Obiero who worked closely with me right from the stage of identifying my research topic upto the compilation of the work. He brought to bear his previous experience as supervisor as well as his knowledge in the field of planning in aid of my research and compilation of this project. I would like to thank Messrs. Maleche and Ngugi as well as Dr. Ndegwa for their assistance especially in the early stages of my work and for holding brief when my supervisor was out of the country on an academic assignment.

I wish to express my sincere appreciation of the assistance given to me by various government ministries, farmers and the local administration during my field work. I am especially indebted to the Chief of Njoro location who despite his tight schedule as an administrator gave audience to me. I also wish to thank Mr. Paul Njuguna the Technical Assistance attached to Gichobo Settlement Scheme for his useful information on the dynamics of settlement process in the area,

I am indeed grateful to the German Academic Exchange Service for providing me with a scholarship that enabled me pursue my studies.

I would also like to thank Mrs. Mary M. Muthigo and Mrs. Sarah K. Lugusa whose agony it was to decipher my script into something more legible.

Finally, any errors or omissions in this thesis are solely my responsibility.

ABSTRACT

Rural development has and still is a major emphasis of the Kenya Government since attainment of independence. Agricultural development is one way in which the state has attempted to improve the livelihood of Kenyans. This is because the majority of our nationals reside in rural areas (Sessional Paper No.1, 1986). This trait is expected to continue into the the next century.

Towards the end of the colonial period, due to prevailing population pressure and low incomes in the so called native areas where the indigenous people resided, the then colonial government decided to alleviate the problem by opening up the former white highlands for African settlement. Hence, since 1960 people have moved from native areas into the former scheduled areas to acquire land, settle cultivate and raise their standards of living. Settlement schemes were started by the state as institutions through which people would be settled in the former scheduled areas. From mid 1960s land buying companies were started by the wananchi with very little involvement by the central government. The government encouraged wananchi to form these institutions because it could not settle everybody who wished to through state sponsored settlement schemes.

This study attempts to point out some of the problems facing the settled community taking a case study of Njoro location where the above three categories of settling people are represented.

The study found out that whereas the government had full control of the settlement schemes, its control in the land buying companies and co-operatives was minimal. The result is that settlement schemes are well planned and provided with infrastructural facilities while the situation in the land buying company and cooperative society farms is pathetic. In some cases in the latter case, the number of shareholders exceeded the land acreage. Hence, little or no land was set aside for communal facilities. If there had been a greater control by the state during the early stages of planning such problems would have been avoided.

There is a tendency in all land buying companies and co-operatives of selling off all farm machinery and other assets when land is being sub-divided. This has created more problems for the farmers in farm preparation. Land preparation is being done late and this affects yields tremendously. The study found out that there is a change in the provision of infrastructural facilities after the farms are sub-divided. Most of the facilities existing before sub-division are either not there or are in disuse. In the government sponsored

Settlement schemes (hereafter referred to as schemes) no provision was given for ensuring that farmers would be assured of obtaining machinery on time. There was an over-emphasis on community facilities and yet the settled community would be agricultural in practice. Land tenure is stable in the schemes but not in most of the company and co-operative farms. In Company and Co-operative farms some shareholders are not yet sure whether the land they are settled on is theirs or not. Such uncertainty has resulted in people's unwillingness to invest seriously in farming. In some land buying companies and co-operatives the state has withdrawn extension services as farmers are not responsive because they are pre-occupied with solving land disputes. In this respect therefore the settlement schemes have an advantage over them. They receive the best extension services because of stability of tenure there. Other problems facing the community include shortage of fuelwood, shortage of farm inputs especially fertilizers, and seed, long distances to water points which affect milk yields and inefficient A.I services.

The study therefore concludes that there is need for a comprehensive approach in planning for settlement. Even where people through their own initiative create institutions for settlement there is need for the state to have control especially in the

initial stages of planning. The study proposes that co-operatives for managing machinery be created to ensure adequate supply of the same after sub-division, co-operatives be encouraged to own some assets even after sub-division. In this respect, dividends should not be the aim of such investments instead they could be mortgaged and the funds so obtained be used to provide services to shareholders e.g. water cattle dips, etc. Agricultural Extension officers should have their travel claims settled quickly otherwise they may lose morale for working. Today claims take too long to be settled and some are not settled at all. Wherever possible a few farmers can be licensed by the Ministry of Livestock Development to rear bulls to supplement A.I. services. Co-operative societies in collaboration with the Department of Agro-forestry at Egerton College and Forest Stations in the Division can supply seedlings to the farmers. The societies can make arrangements to collect seedlings and sell to the people. In this way the farmers will be ascertained of wood-fuel in future.

If the constraints facing the said community are solved people could now start developing the area which is now a home to most of them who have no land in the former so called native areas where they come from.

TABLE OF CONTENTS

	<u>Page</u>
TITLE OF PAGE	(i)
DECLARATION	(ii)
DEDICATION	(iii)
ACKNOWLEDGEMENTS	(iv)
ABSTRACT	(vi)
TABLE OF CONTENTS	(x)
LIST OF MAPS	(xiii)
LIST OF TABLES	(xiv)
LIST OF PLATES	(xv)
LIST OF FIGURES	(xvi)
 <u>CHAPTER ONE"</u>	
1.0 INTRODUCTION	1
1.1 STATEMENT OF THE PROBLEM	1
1.2 JUSTIFICATION FOR THE STUDY	24
1.3 STUDY OBJECTIVES	26
1.4 HYPOTHESIS	27
1.5 ASSUMPTIONS	28
1.6 SCOPE OF STUDY	28
1.7 METHODS OF DATA COLLECTION, RESEARCH LIMITATIONS AND ANALYSIS	30
1.8 LITERATURE REVIEW	35
1.9 OPERATIONAL DEFINITIONS	45

	<u>Page</u>
<u>CHAPTER TWO</u>	
2.0 OVERVIEW OF NATIONAL POLICIES	47
2.1 LANDS AND SETTLEMENT	47 / 7
2.2 AGRICULTURE	48
2.3 RURAL DEVELOPMENT	50
<u>CHAPTER THREE</u>	
3.0 STUDY AREA	53
3.1 LOCATION	53
3.2 PHYSICAL CHARACTERISTICS	56
3.3 HISTORICAL BACKGROUND TO SETTLEMENT IN THE AREA	63
3.4 INDUSTRIAL ACTIVITIES	68
3.5 MEDICAL FACILITIES	69
<u>CHAPTER FOUR</u>	
4.0 DATA ANALYSES	70
4.1 PATTERNS OF SETTLEMENT	70
4.2 EDUCATIONAL FACILITIES	81
4.3 EXTENSION SERVICES	83
4.4 ARTIFICIAL INSEMINATION SERVICES	90
4.5 FARM MACHINERY	95
4.6 FARM INPUTS	99
4.7 WATER SUPPLY	100
4.8 FUEL	103
4.9 LAND TENURE	105

CHAPTER FIVE

	<u>Page</u>
5.0 CONCLUSIONS, FINDINGS AND RECOMMENDATIONS	116
5.1 CONCLUSIONS AND FINDINGS	116
5.2 RECOMMENDATIONS	125
5.3 FIELD FOR FURTHER RESEARCH	131
BIBLIOGRAPHY	133
APPENDIX 1	137
APPENDIX 2	139
APPENDIX 3	140

LIST OF MAPS

		<u>Page</u>
1	Kenya Highlands	2
2	Njcro Location within Nakuru District	54
3	Njoro Location Infrastructure, and Landuse	55
4	Njoro Location Vegetation and Drainage,	60

LIST OF TABLES

		<u>Page</u>
1	Distribution of Settlers and farm sizes in 1920	4
2	Distribution of Settlement Schemes by area	17
3	Chemical Qualities of Njoro Soils	58
4	Mean Monthly Rainfall in Lower parts of Njoro Location	61
5	Mean Monthly rainfall in Higher parts of Njoro location	61
6	Respondents utilisation of Water Sources	101
7	Respondents Utilisation of Various Energy Sources	103

LIST OF PLATES

		<u>Page</u>
1	Typical Njoro Landscape	57
2	An area that was once under forest but is now cleared to give way to cultivation	62
3	Shopping Centre that has developed on a private plot	74
4	A shopping Centre that has developed on a road reserve	75
5	Kiosk on a private farm plot that provides low order goods	76
6(a)	A disused combine harvester on a land buying co-operative society	96
6(b)	A disused harrow on one of the land-buying co-operative society	97
7	A squatter settlement on one of the Settlement Schemes.	106
8	Pipes for a water project on one of the well managed farms.	113

LIST OF FIGURES

	<u>Page</u>
1 Evolution of patterns of Settlement	71

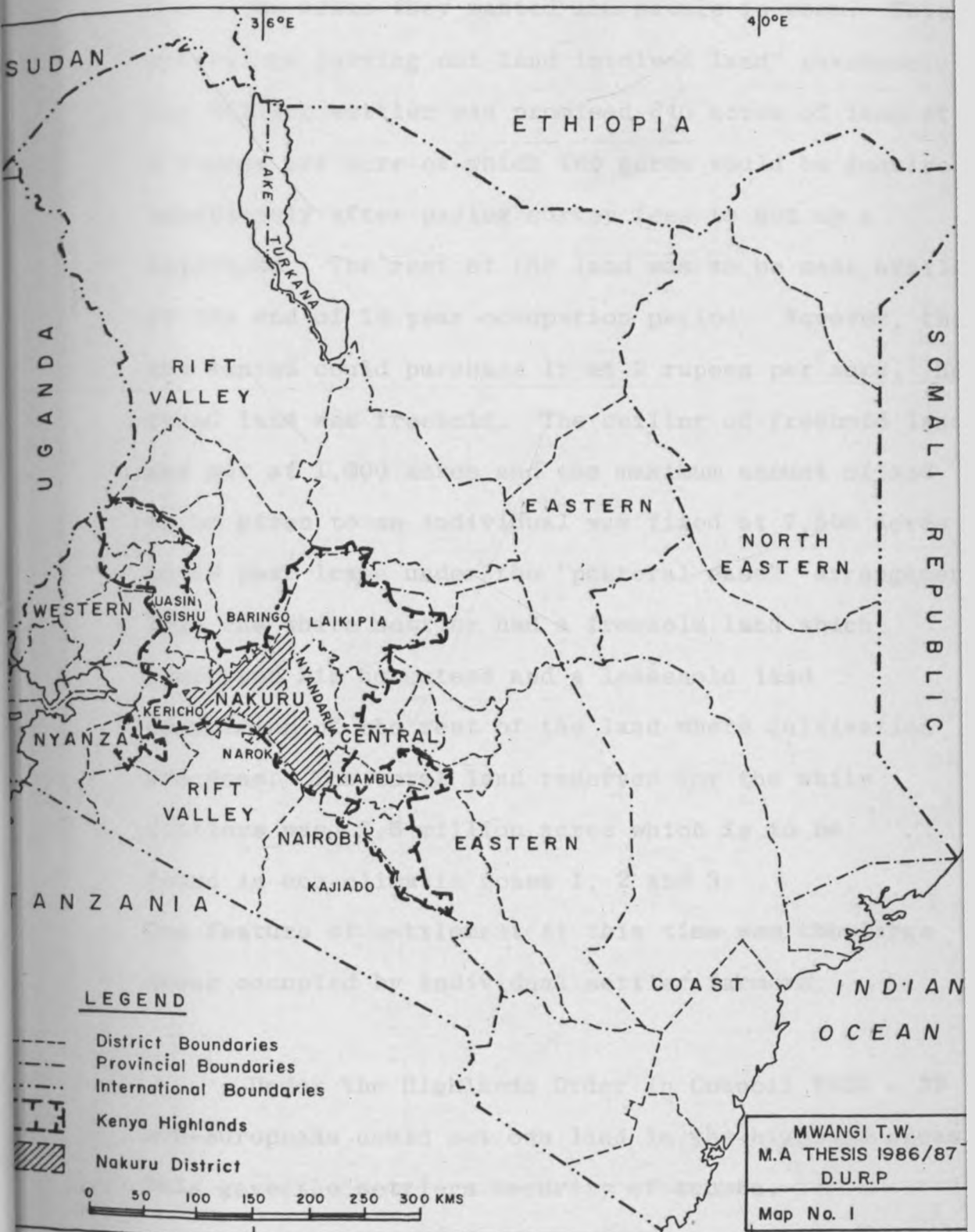
CHAPTER ONE

1.0 INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

With the attainment of independence our agricultural sector including the settlement sub-sector has experienced dramatic changes. One of them is the opening up of the former white highlands for settlement by the indigenous people.

The white highlands covered the districts of Laikipia, Nakuru, Trans Nzoia, Uasin Gishu, Kericho, Nandi, Nairobi, Machakos, Kiambu, Murang'a and parts of Nyeri district (Map 1). European settlement followed the coming of the Uganda railway which reached Kisumu in 1902. Various reasons were given to justify European settlement in the highlands (Odingo, 1971). First the colonialists argued that if Europeans settled here, then they would engage in commercial farming that would utilise the railway to transport agricultural produce hence making it easy to repay the initial investment in its construction. Secondly, the climate here was mild and almost similar to that in the temperate zones in Europe hence conducive for their settlement. Thirdly, they feared that unless they settled, and took control of the country Indians would immigrate in large numbers and would control Kenya. The Crown Lands Ordinance of 1902 put all land under the Crown which made it easy for the British to



LOCATION OF NAKURU DISTRICT AND THE HIGHLANDS WITHIN KENYA

curve out areas they wanted and settle in them. This process of curving out land involved land purchase. Any willing settler was promised 640 acres of land at 2 rupees per acre of which 160 acres would be acquired immediately after paying survey fees to set up a homestead. The rest of the land was to be made available at the end of 16 year occupation period. However, those who wanted could purchase it at 2 rupees per acre. Homestead land was freehold. The ceiling on freehold land was set at 1,000 acres and the maximum amount of land to be given to an individual was fixed at 7,500 acres on 99 year lease under the "pastoral ease" arrangement. Thus the white settler had a freehold land which comprised his homestead and a leasehold land comprising of the rest of the land where cultivation was done. The total land reserved for the white settlers was 7.5 million acres which is to be found in eco-climatic zones 1, 2 and 3. One feature of settlement at this time was the large areas occupied by individual settler farmers,

Under the Highlands Order in Council 1938 - 39 non-Europeans could not own land in the highland areas. This gave the settlers security of tenure.

Table 1:

DISTRIBUTION OF SETTLERS AND FARM
SIZES IN 1920

District	No. of Occupiers	Average hecta- age per occupier
Laikipia	20	1,676
Nakuru	86	2,564
Baringo	130	1,543
Trans Nzoia	76	936
Nandi	5	426
Nyeri	57	1,269
Machakos	42	2,953

Source: Odingo, R.S. - 1971 The Kenya Highlands :
Land Use and Agricultural Development.

Most of the settler farms were isolated except those near the railway. This was because of the large sizes that characterized them. The areal appearance at that time, was a homestead with a lot of machinery which formed the farm nucleus from which the entire farm was managed. The rest of the land was under cultivation with very few physical structures. Each farm was managed as a single unit and thus benefited from economies of scale in their operations.

Since the indigenous people were not allowed to settle in the highland areas, they were thus

restricted to the so called native land areas. As a result, any increase in population had to be contained within these reserves creating landlessnesses and causing population pressure (Ogendo and Odingo, 1973). These native areas were to be a source of labour for the white settler farms and migration out of these areas was to be under control. It was argued that this would make it easy to control the indigenous people than would be the case if they were scattered all over the country. There is a close correlation between the present day economic development with the white settler activities. The most developed parts of this country coincide with the Kenya highlands where the settlers focused their attention because they anticipated quicker returns from their investments. This set the basis for development.

In 1954, the colonial authorities through the Swynnerton Commission prepared a report on the improvement of agriculture in the white highlands with an emphasis on African agriculture. Swynnerton emphasised the need, to focus attention on the progressive African farmer arguing that it would be better to have a few progressive farmers who would maintain productivity rather than have numerous subsistence farmers. The then government was now beginning to focus its attention on the rural people who were and are still the majority. The aim was to help reduce the increasing tension and

danger of political unrest in the country. One realises that the plan never mentioned about moving and resettling Africans in the scheduled areas to release pressure in the latter. The landless would reside in registered villages from where they were expected to provide labour to the surrounding farms owned by progressive farmers. This was the beginning of an emphasis on rural development.

Rural development was and still is one of the vehicles through which the livelihood of the people can be improved. Rural development is a concern of academicians and policy makers. The importance and emphasis on rural development lies in the fact that majority of Kenyans reside in rural areas and even by the year 2000, 71.5% of Kenyans are estimated will be residing in these areas (Sessional Paper No.1 1986). Rural areas which are largely agricultural have a fourfold role in national development namely provision of food to Kenya, provision of jobs, provision of raw materials to industries as well as providing foreign exchange once agricultural produce are exported. Therefore, the development levels of our rural areas are to some extent a reflection of the overall national development efforts. Rural under-development will to some extent, cause urban problems. For example if the rural resource base is unable to provide jobs and other social amenities, then people will migrate into

the urban areas. This will cause a strain on the existing facilities in urban areas like schools, housing, water etc., causing people to reside in squalor conditions. Underdevelopment in the rural areas is therefore a push factor causing people to move into urban areas where the pull factors of employment and better social amenities exists. The urban population in Kenya will increase from 20% in 1986 to 28.5% in 2000 (Sessional Paper No. 1, 1986). The Government in the 1979 - 83 Development Plan, emphasises the need for a harmonous relationship between rural and urban areas. In this plan it is noted that urban areas have to depend on rural areas have to depend on rural areas because they cannot provide their own food. On the other hand, rural areas have to rely on urban centres for farm inputs, consumer goods and market for agricultural produce. If urban areas develop faster than rural areas then people will migrate to urban areas in search of brighter prospects. If on the other hand urban areas develop very slowly, rural areas will suffer because of lack of access to supplies and weak demand for their products" (Development Plan 1979 - 83, pg. 45.).

Approaches to rural development vary from country to country (Sowani, 1979). Such approaches involve land reform programmes as well as the introduction of support services to the people. These support services

are crucial as noted by Harbinson (1966) who argues that rural development does not just involve attempts to increase agricultural production, but also should consider other support services like marketing systems, infrastructure, credit etc. According to Dickenson et. al. (1983) rural development "is an effort to increase social justice and improve quality of rural life in such a way that the ecological basis for subsistence is not threatened". Mutiso (1981) considers rural development as including improvement of both human and physical infrastructural facilities which are vital components of rural development. Such components include health, recreation, educational facilities, extension services and agricultural inputs".

"Rural development therefore is a process in which there is a visible improvement in the methods of production culminating in a situation whereby everybody benefits from the activities occurring in the society.

One way through which the livelihood of the rural people can be improved, is through the provision of support services like agricultural research, extension services, credit, etc.

The Kenya Government puts much emphasis on agricultural research with the aim of raising productivity per unit area through development of better crop varieties. Attempts have been made to develop such varieties like triticale and "Katumani" maize breeds that allows people living in drier parts of the country to grow their own food. Commercialisation of agriculture has also been attempted. This is in line with the Swynnerton Plan of 1954 that allowed Africans to grow cash crops hence transforming their agricultural practices from subsistence farming. The Government has established such bodies like Kenya Tea Development Authority (K.T.D.A.) Coffee Board of Kenya and other similar institutions, to improve crop husbandry of the people. In the Pastoral areas the government has introduced Livestock Marketing Division to help pastoralists sell their livestock. Group ranches have been started and support services like dips, water points and veterinary services are now provided. Small scale irrigation schemes based on traditional methods are now being rehabilitated for example along the course of River Kerio where the Keiyo Marakwet people are growing crops using traditional methods with the assistance of Kerio Valley Development Authority.

In the field of social services, the Government has since independence provided some of these facilities.

Health services have been provided free of charge. In the 1979 - 83 Development Plan the Government states that the improvement in health status of Kenyans is an investment in human capital. In the field of education the state has continued to invest heavily because it is considered a vital tool in national development. This is because as people get more enlightened, they become more adoptive to new ideas. As of 1984 the state invested upto 34% of its annual budget expenditure on education (1984/85 Budget Estimates). Infrastructural facilities have also been improved. The development of this country is seen as requiring adequate facilities to support such a process. In 1979 - 83 Plan period, the Government intended to spend K£ 203m. on road improvement. The provision of these facilities is an important requirement in the development process and allows resource exploitation to be easier as innovations are introduced through them. (Obiero, 1978). The Harambee movement is also an important method of providing social services. Through it a community is able to reduce the costs of developing facilities (Mbithi, 1970). Harambee as a movement contributes upto 10% to the national development (1983 - 88 Development Plan). In the Sessional Paper No. 1 of 1986 the Government now changes its policy a little and favours cost sharing in the provision of basic needs in which case the people

will be expected to contribute as well hence relieving the Government of the need to bear the burden alone.

The other method used to raise the standards of living of people is thorough resettlement. Such a process involves large scale movements of people.

Migration of people did not begin after the creation of formal administrative systems. Pre-colonial migration patterns were largely based on ethnic factors in which an ethnic group moved to another area in search of new settlements, or to escape hostile neighbours. The colonial authorities stopped this kind of movement because it interfered with the already established administrative machinery. It would also make it difficult to collect taxes. Unlike the pre-colonial era, economic reasons largely accounted for such a movement after colonial times (Oucho, 1981).

Onido (1968) notes that people migrate because of economic disparities between regions. In the source areas, push factors such as lack of employment and shortage of land make people migrate. Migrants will move towards those areas in which their desires will be met. The areas of destination must have a stronger attraction power than the intervening opportunities that may exist. In Kenya, push factors

in overpopulated rural areas of central and western Kenya include lack of jobs and shortage of land. The latter cause is very important considering the fact that land is crucial and has social, cultural and economic significance to the people. I.K.O. report (1960) notes that with an increase in economic development of an area, the propensity to migrate decreases. In Brazil people have migrated from impoverished rural - areas where small farms provide low incomes to the coffee plantations of the central region. Jansen (1969) found out that migration is a demographic, economic and social phenomena. With the movement of people into a new area certain spatial patterns develop which induce more movement of people (Abbler, 1972). The resultant patterns so produced are vital because the village centres so produced can be points in space where marketing is done. Through them farmers can be supplied with necessary farm inputs as well as other goods and services.

Doxiadis (1967) identified five types of rural settlements:-

- (a) Nomadic settlements which are temporary in their temporal dimension and are usually very small in size and are usually composed of

nucleation of about one hundred families.

- (b) Farmsteads which are usually composed of one family residing on a permanent point in space. They may live together with their relatives and labourers. Such villages usually compose of ten inhabitants to about 2000. Usually such settlements normally portray the nature of urban areas.
- (c) Villages or composite permanent rural settlements. Majority of the rural people inhabit these settlements.
- (d) Semi-nomadic settlements whose inhabitants move from place to place during certain times of the year and hence practice transhumance. Their movements are largely determined by the climatic conditions.
- (e) A cross between semi-agricultural, semi-urban settlements, rural-urban centres but which largely look like rural settlements.

Rural settlements all over the world are characterised by people who live by cultivating the land or by exploiting resources in the lithosphere

and the hydrosphere.

The white settlers also seem to have liked to reside in rural areas in rural settlements that were characterised by individual homesteads with a few labourers residing in labour lines.

The white settlers desired to control the activities of Africans residing in the native areas especially those of Central Province. To control the Mau Mau revolt, the colonial authorities concentrated people in camps. The consolidation programme as recommended by Swynnerton Plan aimed at creating a situation in which a few progressive and capable Africans would purchase land from subsistence farmers. The result was that many Africans lost land during the exercise.

After the emergency period of 1952 - 59, some people who returned to their native lands found that they had been rendered landless by the consolidation programme of 1954 - 57. Political pressure was now beginning to rise. To relieve such a pressure the British government decided to settle 6,000 peasant families in the former white highlands. This was therefore the beginning of the opening up process of the former white highlands for African

settlement and also the establishment of the settlement schemes; process which aimed at transferring land to indigenous people without a drop in productivity. In 1962, 1.3m. acres was decided upon as a start to the resettlement process and was called the million acre settlement scheme programme. The land was to be bought from the settlers and then used to settle Africans. This scheme was aimed at settling 35,000 families at a cost of K£ 25m, (Odingo, 1966). The investment included K£ 715 per family settled. Of the total investment, administration of the scheme took 22% farm purchase 48%, and money available for development was 30% of the funds available. These schemes were well planned and provided with the necessary facilities in line with Swynnerton Plan that such facilities were necessary for resource exploitation. Standards were set, against which planning was to be done. A settlement officer, clerks and extension officers were also provided and productivity per unit area was expected not to fall but hopefully raise after land transfer (Apthorpe, 1984).

There were two main categories of settlement schemes namely low density and high density. The high density schemes account for 62% of the settlement area. They are found in areas where ecological

conditions favour sub-division into 4 - 6 ha. in high potential and 11 - 16 ha. in low potential areas. They were aimed at the landless in the adjacent native areas and would help reduce the population pressure problem in Central and Western Kenya. It was estimated that over 25,000 families would be settled in this category of schemes (Odingo, 1971). Most of the settlers in this category had little knowledge in farming. The aim here was to settle as many as 13 families in every 100 acres (Adams, 1979).

The low density schemes were intended for the more educated farmers with some agricultural knowledge. In this category farm plots were to be bigger averaging 8 - 16 ha. or more. The densities here would be 3 - 5 families settled on every 100 acres.

Co-operative settlement schemes were also started in areas with low potential ecological conditions which militated against sub-division and this made it economical to farm the land as a single unit. This was true for such areas as ranches in Machakos, the "Vlei" Country in Ol Kalou where wheat farming and sheep rearing was emphasised (Odingo, 1971).

The spatial location of these schemes was such that most of them were to be located in Kinangop plateau and Nyandarua. By 1966, settlement schemes in

Central Province had 218,125 ha. with 16,114 plots. Mosts of the schemes are in Central Province because the population pressure here was serious and political tension higher than in other parts of Kenya. In Western parts of the Rift Valley schemes were set up in Trans Nzoia, Uasin Gishu, Muhoroni and Sotik to ease population pressure in Western and Nyanza provinces. This zone had a total of 67,880 ha. with 6,742 plots. Other parts of Kenya had fewer schemes because the population pressure problem was less severe. Such zones included Cherangani and Ainabkoi to serve the Keiyo people while the Nandi salient would serve the Nandi people.

Areas suited to large scale farming were left out and included Uasin Gishu and parts of Nakuru districts. The table below summarized the distribution of schemes in the country,

Table 2:

DISTRIBUTION OF SETTLEMENT SCHEMES
BY AREA

Settlement Area	Total No. of Schemes	Total Land area for Settlement (ha.)	Total No. of plots estimated
Western	18	67,931	6,742
Eldoret	13	34,940	2,588
Sotik	20	45,240	2,917
Nakuru	13	39,675	3,192

Table 2 continued:

Settlement Area	Total No. of schemes	Total land area for settlement (ha.)	Total No. of plots estimated
Dundori	11	31,432	2,524
Kinangop	11	31,432	3,054
Kipipiri	6	34,847	3,054
Nyeri	10	33,204	2,661
Nyahururu	10	28,355	2,811
Nairobi	11	12,331	832
Ol Bolossat	1	4,385	150
Ol Kalau	1	69,703	1,256
Co-operative schemes	15	487,551	33,496

Source: Odingo, R.S. - Kenya Highlands : Land Use and Agricultural Development page 203.

At this time also other land transfer programmes started which included:-

- (a) Land purchase by individuals through loans provided by the World Bank.
- (b) Land purchase by companies or co-operative societies in cases where the cost was too high for an individual to purchase land.
- (c) The state purchased land and set up the A.D.C. to run these farms on behalf of the government as state property.

Co-operative and company farms are now a feature in this country. They were formed by wananchi with the sole purpose of purchasing land from the white settlers. In Nakuru district there are about 106 such farms with a total of 246,400 ha.

Therefore, the settlement process was seen as a way of not only alleviating population pressure in native areas and also easing political pressure that was beginning to increase due to landlessness, but also as a tool for development. Odingo (1970) views settlement schemes as a vehicle through which the livelihoods of people can be improved because it allows them venture into new horizons. Athorpe (1984) views land settlement in three ways:-

- (a) As a planned social change:
- (b) Involving selection of the target people
- (c) Involving re-distribution of population and also population control.

In the case of Kenya the above three conditions were met in the process of re-settlement.

By the late 1960's, the spatial organisation of the Kenya highlands had been drastically changed. Instead of the extensive farming that existed during the colonial era we now see small scale farmers. The new scene has brought with it various problems.

Before land purchase and sub-division, the large white settler farms enjoyed economies of scale in their operations. They could hire inputs, machinery and labour as a single unit. After land transfer, the government has continued to encourage people to practice mixed farming as a way of reducing risks and in fact did provide dairy animals to farmers in the schemes. Small scale farmers today still prefer to continue growing the same crops as the settlers did. Hence, one finds crops like wheat, maize, barley etc, alongside dairying. This has brought its own problems. Reduction in farm sizes makes it difficult to mechanize the land and this has largely affected wheat farmers. After farm sub-division, most of the company and co-operative farms sold out farm machinery. Such situation is likely to cause some problems if the new settlers need machinery for some of their activities later for example wheat farming.

One thus sees that the spatial distribution of facilities during the white settler period was adequate. The labourforce working on the European farms needed not travel to the surrounding urban centres for their basic needs as the employer used to purchase foodstuffs for his employees and then ration to them. One such urban centre was Njoro township

which has been in existence since the Europeans came, could provide for the services of the small population existing then. With the indigenous people settling in the area, the scene has changed drastically. Njoro township cannot provide for the services of the increased population. Hence non-designated centres have sprang up close to the people to provide for their basic needs. The designation exercise done by the Physical Planning Department in the sixties provided the entire division with one urban centre and one local centre. These centres are inadequate for the division. After take-over, especially in the company and co-operative farms, very little space was left for public purposes because of the very large number of shareholders. As a result, some of these facilities have had to be located in Njoro township where there is adequate space. The result is that in the case of schools pupils have to walk very far to attend school. With an increase in population, the situation in future may be very serious. There seems to have been little control to regulate the number of shareholders who could be registered in the company and co-operative farms. This could be one of the causes of the difficulties experienced today. Kamwaura land buying company has 200 members who share 200 acres while Njokerio land buying company has 1,135 members who share 521 acres (Divisional

Agricultural Report of 1986). Such problems do not face settlement schemes because the registration process was carefully controlled to ensure that the new settlers have enough of the necessary facilities. Mismanagement of some farms e.g. Kamwaura has forced the government to take over their management. (Nakuru District Development Plan 1979 - 83).

Elsewhere the government has had to intervene e.g. Mbo-I-Kamiti company (which produces 1% of Kenya's coffee) because of mismanagement (Daily Nation 19th December, 1986). Extension services provided to the farmers tend to favour those in settlement schemes because of the stability there. Most company and co-operative farms are still involved in solving minor issues like wrong surveying of farms which make it difficult for them to adopt new ideas easily. In the sub-divided farms there are also the problems of water shortage, overutilized cattle dips and water points as farmers increase their herds, lack of title deeds, unorganized marketing systems among others (Nakuru District Development Plans for 1979 - 83, 1983 - 88). The Ministry of Agriculture does not have adequate records of the number of cattle dips in the area (District Development Plan 1979 - 83) hence indicating the magnitude of the problem of lack of a clear inventory of services

Poor roads in some areas of the district has meant that the A.I. services cannot reach some farms and farmers have been forced to use bulls some of which are of poor quality which may affect milk production because of the appearance of poor low yielding offspring. The Ministry of Agriculture has also identified sub-division of farms as a hindrance to extension services and this interferes with prevailing programmes and targets. Also squabbles in some of these farms have resulted in a situation in which, shareholders spend more time solving their internal problems and hence it is very difficult for them to adopt new ideas easily. This has a negative effect on agricultural development of the area. In some instances farm sub-division has resulted in some people not getting land. An example is Mutukanio company and Kamwaura where the shareholders who never got land, have had to be compensated. In the case of Kikapu land buying Co-operative society, the farm was sub-divided last year but the new district administration feels that there is need to re-survey the farm (Field Survey).

In summary therefore a number of observations are seen as highlighting the problem under investigation as well as indicating the framework within which to work. The level of provision of basic services is

different in the three categories of settlement. The settlement schemes tend to be better served with such facilities like schools, extension etc. unlike the company or co-operative farms. This shows a dichotomy in terms of comparison between the government sponsored schemes on one hand and the land buying companies and co-operatives on the other. The sponsorship (or nature) of the scheme affects the performance of the said institution. This is strengthened by the observation that instability of land tenure in some of the company and co-operative farms affects the performance of the same. On the other hand government sponsored schemes have a more stable land tenure and their performance is better.

1.2 JUSTIFICATION FOR THE STUDY

Land and its management have been great concerns for the state as indicated in the National Development Plan 1979 - 83. In this plan the government is concerned about poor land policies that could be disastrous to this country noting that 70% of Kenya's total exports come from agriculture. Thus on this basis a study of any agricultural development programme of which re-settlement is one is necessary

The new community faces problems some of which are:

- (a) Poor provision of facilities close to the farms necessitating the location of such facilities far away for instance Njoro town.
- (b) Inadequate machinery for land preparation and crop harvesting because such machinery have already been sold out during land sub-division.
- (c) Poor roads that affect delivery of produce to markets.
- (d) Mismanagement of companies and co-operatives
- (e) Environmental problems like soil erosion and inadequate rainfall
- (f) Lack of title deeds which means that farmers cannot get loans easily among others.

There is thus a need to examine in detail the genesis of the above problems and provide solutions if the community under study is to uplift its standards of living. It is for example necessary to know why little land or none was left in some farms for the location of schools, shops, etc. Some centres like Gachuhi and Ndeffo are located on private plots in which the owners have curved out portions of their land to start business premises. Others like Kihingo is located on the road reserve. Lack of machinery is an acute problem facing farmers especially those who grow wheat. The problem is at times so serious that

- (a) Poor provision of facilities close to the farms necessitating the location of such facilities far away for instance Njoro town.
- (b) Inadequate machinery for land preparation and crop harvesting because such machinery have already been sold out during land sub-division.
- (c) Poor roads that affect delivery of produce to markets.
- (d) Mismanagement of companies and co-operatives
- (e) Environmental problems like soil erosion and inadequate rainfall
- (f) Lack of title deeds which means that farmers cannot get loans easily among others.

There is thus a need to examine in detail the genesis of the above problems and provide solutions if the community under study is to uplift its standards of living. It is for example necessary to know why little land or none was left in some farms for the location of schools, shops, etc. Some centres like Gachuhi and Ndeffo are located on private plots in which the owners have carved out portions of their land to start business premises. Others like Kihingo is located on the road reserve, Lack of machinery is an acute problem facing farmers especially those who grow wheat. The problem is at times so serious that

some farmers harvest their wheat too late when the short rains have come. Such wheat may either be rejected by N.C.P.B. or the farmer charged a lot of money to dry it.

Njoro location was taken for study because all the three categories under study are found here (settlement schemes, land buying companies and co-operatives). It is also in the former white highlands and hence might illustrate the issues under study better.

Also although a lot has been written concerning the settlement schemes, little has been done on land purchase companies and co-operatives. They have of late been a subject of much debate even drawing the attention of the government. They therefore, alongside settlement schemes deserve a thorough study. In this regard it would be necessary to look into people's attitude towards communal ownership of land and property that existed before land sub-division..

1.3 STUDY OBJECTIVES

This study will attempt, to make a critical analysis of the problems stated above.

The study will attempt to examine the general Problems of rural development be they economic or

social as they apply in their relevance to Njoro location. The study will also provide solutions to the identified problems. The main study objective will therefore be:-

- (a) To examine the settlement pattern including service centres in the study area and also level of services provided in them.
- (b) To identify and examine settlement problems facing the newly settled community as regards the provision of services and infrastructure as well as the major agricultural problems facing farmers that act as constraints to resource utilisation.
- (c) Finally, the study will suggest policy strategies/ guidelines on settlement of agricultural communities through land-buying companies co-operatives and similar institutions.

1.4 HYPOTHESIS

There is no significant difference in the provision of infrastructural facilities before and after land sub-division.

In the hypothesis the over-riding situation being

examined is that; with farm sub-division communal ownership of property like machinery is stopped and shareholders operate independently. Most of them cannot afford to purchase such machinery and have to rely on hired ones which are difficult to get. Also especially in the badly managed farms (in some cases to be cited in the study) never left land for community facilities. The study will give reasons for this. Settlement schemes however had greater government control and special attention was given during planning to give provision for community facilities.

1.5 ASSUMPTIONS

- (a) That the community will continue being agriculturally based.
- (b) That the programme of settling people in settlement schemes was the best considering the prevailing circumstances.
- (c) There is need, to propose strategies in the light of existing constraints in order to maintain a good livelihood for the people.

1.6 SCOPE OF STUDY

The study will focus its attention on Njoro location because due to shortage of time and other resources it will not be possible to cover a wider

area. The study will put more emphasis on co-operative and company farms although mention will be made on settlement schemes as well. Most of the work will focus on farms below 20 hectares which according to the Ministry of Agriculture Large Scale Farm Sector Survey of 1977 are categorised as small scale farms. Most farmers in the area fall under this category and they face special problems which severely constraint their operations.

The study will attempt to highlight the lessons we can learn from the said re-settled community. The scope of the study will include:-

- (a) Brief review of the settlement policies and strategies including the agricultural and rural development policies.
- (b) Review of the historical development of the three categories and the settlement of the communities in the study area.
- (c) Evaluation of the services and infrastructure in the study area.
- (d) Appraisal of physical and human resources of the area including the settlement patterns.

(e) Finally, the study will propose solutions to the identified constraints and also highlight lessons learned through settling people in a new area especially through land buying companies and co-operatives. It is hoped that the findings of this study together with recommendations made will help solve the problems facing the said community and improve its standards of living.

1.7 METHODS OF DATA COLLECTION, RESEARCH LIMITATIONS, AND ANALYSIS

There were two main sources of data namely primary and secondary.

1,7,1 Primary Data

Primary data was obtained from interviewing farmers, government officials and direct field observations.

A sample of 100 farmers was decided on out of 13,077 farmers in the location. Due to shortage of time and other resources it was not possible to take a larger sample.

Three sampling techniques namely stratified, simple random as well as systematic sampling were used,

A simple random sample is one in which everyone has an equal chance of being sampled, "a chance equal to the size of the sample divided by the size of the population" (Prewitt, 1974). In case of a stratified sample, the population is classified into categories depending on the phenomena the researcher chooses. Samples are then taken from these categories. In this case, some objects will have a greater chance of being chosen than others. In the case of systematic sampling selection is done at intervals.

In this particular study the farms were grouped into three categories namely company, co-operative and settlement schemes. The total number of all farms was twenty two. This was done to allow the use of stratified sampling technique in order to determine the number of respondents to choose from each category. By using this technique, 66, 4 and 30 respondents were to be interviewed from the company, co-operative and settlement scheme categories respectively. The next stage was to determine from which of the farms in each category would we interview the respondents for instance from which of the company farms would we get 66 respondents to interview. To achieve this 15 out of 22 farms was decided upon as a good working sample. Stratified sampling technique was again used this time to determine how many farms from each

category would be picked. Through this system 8, 3 and 4 farms were to be picked from the company, co-operative and settlement scheme strata (Appendix 1). After this a table of random numbers was used to pick out the farms in each category. To determine, the number of farmers to interview from each picked farm in each category the following formular was used (Appendix 1).

$$F = \frac{x}{P} \times Q$$

where F = number of farmers to be interviewed

P = total number of farmers in the sampled farms.

Q = Number of farmers to be interviewed in the said category for example settlement scheme category.

X = number of farmers in the picked (farm) scheme.

After this stage the number of farmers to be interviewed, the category and farm they would come from had been determined. Questionnaires were then administered to farmers in the field and the systematic sampling technique was used to pick out the farmers for interview.

The level of services provided at each service centre in the location was also recorded in a table

prepared earlier.

Secondary data was obtained from records kept in government offices.

As indicated in the next section, it was not easy to get data on company and co-operative farms except one. This is because after farm subdivision most of these offices closed down. Hence, it was decided that whenever it was necessary to cite a case to enhance an argument, such data would be obtained from Rumire Co-operative Society where a detailed study had been done earlier. In this particular farm, a total of 46 out of 48 shareholders had been interviewed during the Rural Implementation Project.

1.7.2 RESEARCH LIMITATIONS

The field work faced some limitations:

- (a) The location is a new one within Njoro division which was opened in late 1982 having earlier on been part of Molo division. As a result, the boundary changes are still arbitrary and have to date never been gazetted. I had to rely heavily on the local chief to determine the boundaries, since no locational map existed at either the district surveyors office or survey headquarters in Nairobi.

(b) Due to the change in boundaries, it was not possible to use the 1979 population census figures as recorded by the Central Bureau of Statistics. To estimate the total population, results in the field were used. Among the interviewed respondents, the average household size was five and the total number of shareholders was 13,077 give a total population of 65,385 in the rural part of the location. The population in the Njoro rural centre is about 6,000 and therefore the total population in the location is about 70,385 people

(c) It was not easy to obtain records on production in the farms before sub-division with the exception of one farm that has kept such records. For comparison purpose of production before and after sub-division I had to rely on this one farm - Rumwe Co-operative Society. A possibility of bias in the information which may not be representative of the situation in the area cannot be entirely ruled out.

(d) Some of the government officials who could have given me the necessary information I needed were not available at the time of the survey.

1.7.3 METHODS OF DATA ANALYSIS

In analysing the data collected in the field, descriptive statistics will be applied. To support these, tables, maps drawings, photographs will be used. Discussion which will be largely qualitative will be used.

1.8 LITERATURE REVIEW

Much has been written on migration, land tenure, rural development as well as settlement schemes. However, not much has been written on institutions of re-settlement that are not government sponsored for example land buying companies and co-operatives.

Rural to rural migration is a phenomenon that has received much less attention as compared to rural-urban migration. The study area has been affected by rural-rural migration with people moving from other rural areas with population problems.

Ogungo (1971) puts it that rural-rural migration is due to economic social and psychological factors. Population pressure can also act as a push factor as is the case with Bunyore where people have decided to get land or jobs elsewhere (Matende, 1985). Khasiani, (1978) considers movement of people as a function of adjustment by the population from areas of less opportunities to areas of more

opportunities. The area under study, can be seen as an area where people moved in to look for better opportunities of self improvement in the form of land. Oucho (1981) concludes that movement of people from Nyanza to the Kericho tea estates was largely due to the desire for jobs. However the movement into the study area differs in this respect because the need to acquire land was the major reason given behind migration and not jobs as shown in the field survey findings - 100% of respondents said they migrated into Njoro to look and settle on land. In Brazil people have moved from impoverished rural areas where small farms provide low income to the coffee plantations of the central region where incomes are higher. In view of the above arguments, one can thus conclude that people move in order to try and get something better. In this country where land is considered an important asset to have (no matter how small or low its potential is), people will desire it. The conclusion one draws is that movement into the area was largely for land acquisition and not to seek employment. It is probably because of this reason that some farms are underutilised and management by telephone farmers - as indicated in the District Development Plan - 1979 - 83 because most people wanted a portion of land, and the economic benefits derived from it was of secondary importance.

Hence the study agrees with Ogungo's argument that some of the reasons behind migration into another rural area is social and psychological. Abbler (1972) argues that with the movement of people into an area certain spatial organisations develop which induce more people to move in.

Resettlement has been used by most governments as planned change with the aim to increasing productivity and incomes. In Indonesia, the state embarked on a massive programme of resettling rice farmers in Lampung Province (Brammah, 1977). The government started by settling people on the best land and once such land was no longer available, they focused their attention on lower quality land. In Kenya, government sponsored settlement schemes are to be found in areas of much higher potential within the Kenya highlands. Co-operative and company farms which are a much later phenomenon are located in some cases in much lower potential land for example Ng'arua in Laikipia and Naivasha Rift valley floor. Brammah (1977) further states that in planning for a newly settled community one must try and establish a system almost similar to what the community was used to before migrating. In Phillipines the settlement schemes introduced by Americans failed because peoples traditional ways of

life were not considered. However, in a country like Kenya where people have varying traditions some of which are quite different from each other one wonders whether it is really possible to design a system that is similar to what every member in the scheme was used to. Elsewhere land reforms and re-settlement of people have been undertaken.

In Ghana, the Volta Project resulted in evacuation of 80,000 people. The state was to resettle these people in new communities that would be more modern and people would produce in a commercial way. Butcher and Afriyie (1971) record that 60% of the households were of the opinion that their livelihood was not improved with the resettlement process. Thomi, 1984 argues that this programme failed because the goals set out were very ambitious but the implementation period short. 59% of the settled people migrated to other areas due to their dissatisfaction

In Ethiopia the government embarked on a villagisation programme to ensure that people were well supplied with social services at a minimum cost than would be the case if they lived in dispersed rural homesteads. The government has to-date resettled 6 million people (Mengistu's revolution day speech 12th August, 1986). However, the

programme was done so drastically that it brought with it problems. Some people were forced to move in the middle of the planting season leaving behind an immature crop. Due to poor planning families that used to cultivate around their homes now live in villages and have to go far to their farm plots to cultivate. This results in waste of a lot of time. Hence without proper preparation, large scale resettlement process may disrupt agriculture.

In China Mao introduced a land reform in 1949. Prior to this land revolution, land was in the hands of a few people who rented land to the people. The end result of the revolution was that land was distributed to the peasants. Communes were created which resulted in the creation of larger portions of land through agglomeration of smaller plots. This allowed mechanisation which Mao believed to be a necessary requirement for agricultural development. The communes are not only engaged in agricultural production, but also in industrial concerns. Industries are now located in rural areas which allow backward and forward linkages (Zuvekas, 1979). However, the Chinese experience was a success because it developed through a gradual evolution and may not be copied by other countries wholesale because the social condition under which it succeeded.

are different. The Chinese model is based on the marxist view that development process is the ability by which the state mobilises the resources of labour and land to raise the standards of living of the people (Mabogunje, 1980).

In Russia, land reformation aimed at developing the country was more violent. The desire of the state was to turn Russia into a modern and industrialised country without foreign assistance. They decided during the fifteenth congress of the Communist Party in 1928, that small peasant farms be converted through re-organisation into large farms in which the land would be cultivated co-operatively. This was achieved in four years time through the use of force. Although productivity per head rose by 60% (Mabogunje, 1980) the frequent reports in the press about their desire to purchase wheat from the west makes one feel that there is room for improvement of their agriculture.

One therefore sees that in these two countries revolution through land consolidation succeeded because the land was in the hands of minority while the majority never owned any land at all and could easily welcome a revolution.

In the spatial re-organisation of rural settlement, Chisolm (1979) argues that the locationⁿ of farm plots is crucial because the more scattered^d they are the more time a farmer spends in cultivating them. This was the same view Swynnerton Plan (1954) had when he recommended land consolidation in native areas. He further argues that dispersed settlements increase the costs of providing infrastructural facilities. In planning for human settlements in rural areas, he advocates a pattern in which farms adopt a square shape and locating houses for both labourers and landlords on one part of the farm with a discouragement on land fragmentation. In this pattern, the homesteads adopt a linear pattern. In Kenya the government has voiced concern on land sub-division and construction of houses on fertile agricultural land arguing that it will reduce agricultural output (1979 - 83 National Development^t Plan).

The Swynnerton Plan of 1954, focused its attention on native areas with a view to increasing^g production. It emphasised the need to amalgamate^e dispersed land units to create economic units of land. This process was carried out during the emergency period. Swynnerton Plan proposed a situation in which the:

"energetic or rich Africans would be able to acquire more land and poor or bad farmers less, creating a landless class" (Page 10 of the Swynnerton Plan, 1954).

He further argues that the creation of a landless society is a normal process in the evolution of a country. He proposed the creation of villages to act as residences for people who would provide labour to the farms near them. The plan hence emphasised and put more attention to the progressive farmer, arguing that resources invested in such a farmer would be recovered much easily. Thus, even at the time of colonial rule there was a plan to improve the native agricultural areas leaving the scheduled highland areas for white settlement. Even with the coming of the new settler generation there lacks a proper plan focusing its attention onto the new settlement areas especially those occupied by company and co-operative farms.

The National Development Plan - 1966 - 70 argues that the settlement schemes had by then achieved their target by settling the landless. The governments attention according to the plan would be turned to the native areas because this would provide more jobs and raise the living standards of more people than in settlement schemes. However, one quickly points out

that the new settlement area was to and still is experiencing population increase and there is need to plan ahead and set strategies to improve the livelihood of these people.

An investigation of settlement schemes and the problems they face (Thomi 1984) concludes that in most schemes in the world there is political over-publicity of government sponsored programmes and poor implementation. Other problems include lack of adequate personnel, machinery and spare parts.

Martin (1976) argues that public utilities exist before people arrive but social facilities are an after-thought. This was so in the case of the study area where such utilities like electricity, telephone and water reticulation system existed before indigenous people came in. Such facilities like schools etc. are coming much later and in some cases there is no space for their location.

Lewis (1954) says that success or failure of any settlement programme can be judged against:

- (a) Choice of right
- (b) Choosing right settlers
- (c) Right acreage per settler
- (d) Conditions of tenure.

- (e) Settlers capital
- (f) Organisation of group activities.

Akungo, (1980) found out that in Mbita division lack of transport facilities, poor soils and low skills were causes of low production in farms. Administrative weakness caused by poor organisation structure were other factors causing low production. Ndebele working in Maun District, Botswana identified poorly developed infrastructure, poor marketing facilities, inadequate extension as some of the problems facing farmers.

This study will attempt not only to identify the problems facing the said community in Njoro, but also try to understand the root causes of the problems. The study will also be done within the planning framework and will therefore provide possible recommendations to solving these problems. Since from the sited literature much of the work done is largely on government sponsored schemes in various parts of the world and in native areas the research alongside focusing on state sponsored schemes in Njoro will also focus its attention on co-operative and company farms which have received little attention before.

1,9 OPERATIONAL DEFINITIONS

Labovitz and Hagedron (1979) point out operational definitions, help indicate how a concept or term is used in the text.

- (i) According to the National Environment Secretariat "a human settlement is a built up environment where human beings can provide themselves with housing and its components, food and other supplies and services which human life needs to satisfy or create its own vitality. In as much as it is a place where man can settle himself to live, it can be a farm, a village or small town or city".
- (ii) Inseminators - These are agricultural officers who provide cows with artificial insemination services.
- (iii) Infrastructure - Is a foundation on which the economy is supported. According to Bernard and Walter (1971) it includes various forms of transportation, credit facilities, an education system and a network of research and extension services.

- (vi) Agricultural Extension Services - Are programmes aimed at advising farmers on better methods of production and farm management to increase yields. They not only involve educating farmers but also the provision of such farm inputs like seeds, credit, fertilisers, etc.

CHAPTER TWO

2.0 OVERVIEW OF NATIONAL POLICIES

2.1 LANDS AND SETTLEMENT

In the 1984-88 Development Plan the government aims at ensuring optimal land utilisation. In order to encourage increased investments on the land thereby raising productivity freehold system of land tenure will be pursued. In the former white highlands the transfer of land from foreigners to landless indigenous people will be encouraged. This clearly indicates the desire of the state to transfer land to the indigenous people. Farm sub-division will be encouraged and title deeds issued. Basic infrastructural facilities will be provided to allow an all-year-round movement of inputs to the farm and outputs to markets. It is also emphasised that the new settlers will be expected to "contribute part of the development resources and to mobilize and use local resources" (Development Plan 1984-88 pg. 158). In the study area where people have already moved in, little has been done on most of the farms to ensure that there are enough infrastructural facilities. Although the state has legal powers with which to control landlords even when they possess freehold titles little seems to have been done to ensure that enough space has been left for the location of infrastructural facilities on farm sub-division (Appendix 1). This issue is discussed later in the report.

The Sessional Paper No. 1 of 1986 points out that although demand to acquire will increase there is need to set limits of farm sub-division to avoid emergence of uneconomic units. Whereas this is a welcome move, especially if there will be any more farm purchase and state sponsored schemes in the country one wonders what will happen in the cases where people have already purchased land. If this policy was pursued during the drafting of the Sessional Paper No. 10 of 1965 probably some of the difficulties facing people would have been avoided. This is because there would have been more control of the operations of the company and co-operative farms.

2.2 AGRICULTURE

It is the aim of the country to continue increasing agricultural production and also modernize the sector. In the plan period 1984-88 it is hoped that agricultural production will grow at 4.5% per annum rising to 5.0% in 1988. Intensification of land use will be the aim. To achieve this the state intends to optimise resource allocation to the sector; provide adequate credit; ensure an efficient operation of the market system and to guarantee such a land tenure that will give people enough confidence thereby raising their incentive to invest on their

land (Development Plan 1984-88). It is also suggested that agricultural policy guidelines be flexible enough, to allow co-ordination with general national development policies. Pricing tool will be used as an incentive to farmers to produce more. Farm prices will continue to be revised upwards from time to time. In the cereal growing areas, this has been done. The prices of cereals have been revised periodically. An observation one makes is that the prices of wheat is much higher than that of maize. The reason is that wheat requires much more inputs than maize and also the state desires that the country achieves self sufficiency in wheat production. However, with farm sub-division into at times land-holdings as small as 2.5 acres or less it is difficult to grow wheat. Also, inadequacy of farm machinery especially tractors and combine harvestors militate against successful wheat growing.

The Training and Visit Programme will be emphasised as a system of disseminating information to farmers. This emphasises the desire by the government to prove wrong skeptics who believed that productivity would fall if Africans were allowed to take over farms from the white settlers. However, as indicated later the programme which was proposed

by the World Bank is facing difficulty in the area. This is because of insecurity of land tenure in some of the company and co-operative farms which makes it difficult for people to adopt information quickly. What one learns from this is that in planning for an agricultural community all sectors should integrate all sectors instead of considering the sectors in isolation. It is vital that other support facets are looked into for instance ensuring adequate machinery, good land tenure system etc. for the state to achieve self sufficiency in food production. Reviewing prices of agricultural produce and ensuring a good extension officer to farmer ratio may not necessary ensure that productivity is increased.

2.3 RURAL DEVELOPMENT

The state aims at ensuring that there exists a rural-urban balance with the former receiving their rightful share of the national cake. The state notes that there has been an overemphasis on development of urban areas by the colonial authorities and even a few years after attainment of independence. However, since the majority of people reside in rural areas there is a need to focus attention to these areas. Effects of decentralisation of planning activities faced problems because of unwillingness

of the centre to release power to the districts (Ougu 1975). Re-settlement and other development packages for the rural community were attempts by the state to increase the pace of development in rural areas. Since there was much population pressure in the native areas, there was an increasing danger of poverty persisting if not increasing. This together with the desire, to prevent political pressure in the native areas provoked the state to open up the former white highlands for African settlement. There is the need to continue maintaining the bulk of the population in the rural areas to avoid excessive exodus of people into the major towns. Hence, the need to ensure that all support services necessary for increased agricultural production are provided for to ensure that the sector is able to provide incomes for the farmers as well as provide jobs. Small scale industrial establishments need to be established in rural areas to provide off-farm employment as well as raising the value of agricultural products through processing them. There is need to consider the possibility of locating such establishments on the farms themselves rather than bigger towns. Small scale plants like dairies could be established on the farms to produce such

products like cheese and butter which could be marketed. However, for this to occur there is need to alleviate constraints to increased milk production. The state also encourages co-operatives to diversify into other fields and invest so as to raise the standards of living of the shareholders. If for instance land buying co-operatives and company farms invested in other fields, they could use the increased incomes to provide members with such services like water, electricity, cattle dips etc. Provision of these services would be cheaper because of the advantages accruing from economies of scale.

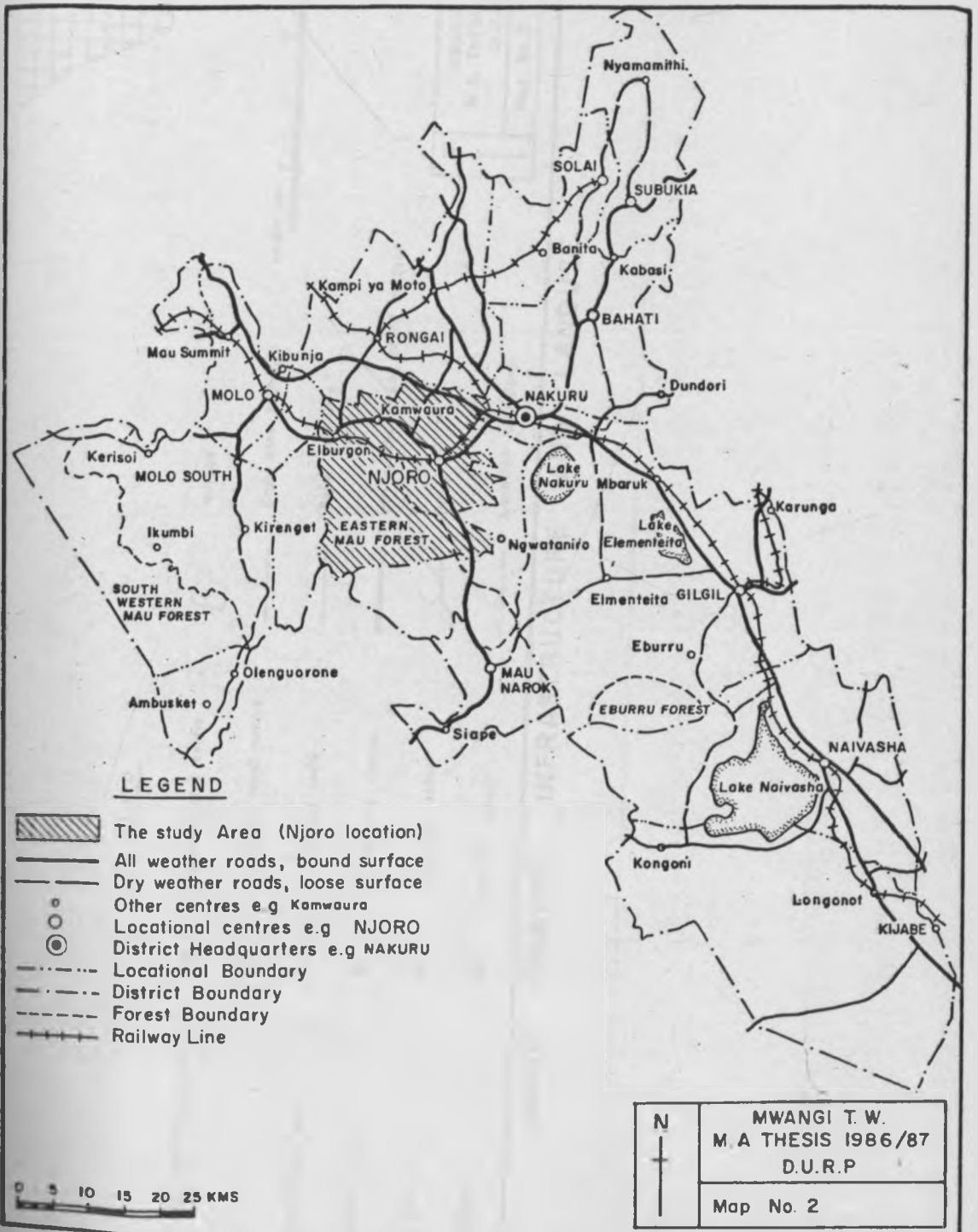
CHAPTER THREE

3.0 STUDY AREA

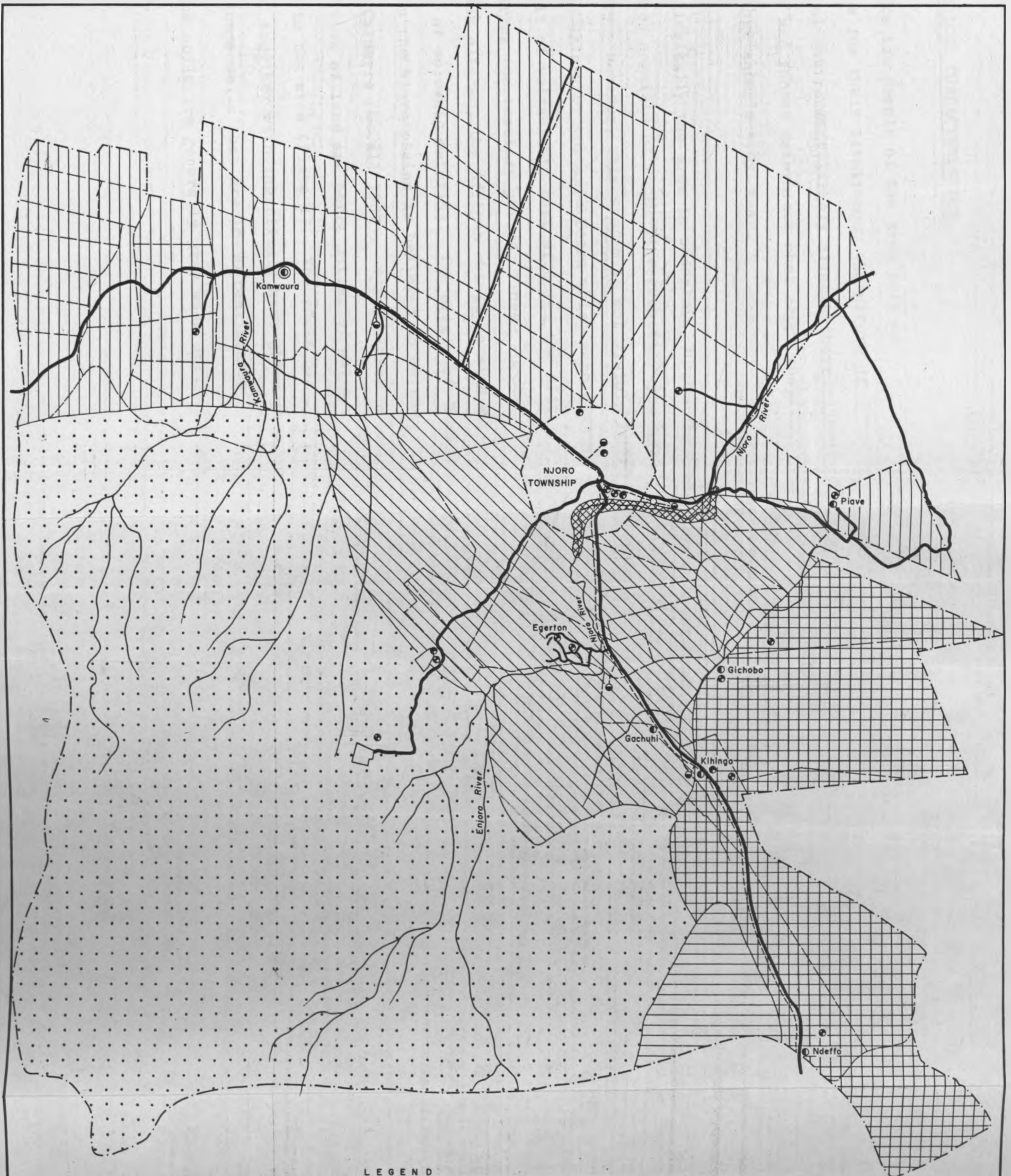
The community under study is an agricultural one and is therefore much attached to the land. It is therefore vital to look into the physical and human geography of the study area. This chapter attempts to do that.

3.1 LOCATION

Njoro location is situated in Nakuru district of the Rift Valley Province. It lies between $35^{\circ}51'$ and $36^{\circ}03'$ south and longitude $0^{\circ}12.5'$ and $1^{\circ}23'$ east. The location has three sub-locations namely Njoro, Nessuit and Ngata. The location is to the western part of the district bordering Mau Ranges (Map 2). The total projected population of the area is 70,385 as of 1986. The location has eight service centres two of which are designated while the other six are non-designated. The centres are Njoro (designated urban centre), Kamwaura (designated local centre) while the non-designated centres are Gichobo, Piave, Gachuhi, Kihingo, Stoo-Mbili and Ndeffo. It is worth pointing out at this stage that some farm plots in most farms also have shops that provide low order goods to the people (Map 3).



NJORO LOCATION WITHIN NAKURU DISTRICT



LEGEND

- | | | | | | |
|--|--|--|-------------------------|--|---------------------------------|
| | Pyrethrum / Potato / Horticulture zone | | Non designated centre | | Village |
| | Maize / Wheat zone | | Designated local centre | | Crop zone boundary |
| | Beans / Maize / Sunflower zone | | A.I service route | | Farm boundary |
| | Maize / Wheat / Dairy zone | | A.I service crutch | | All-weather road, bound surface |
| | Sheep / Dairy zone | | Secondary school | | River |
| | Riverine vegetation | | Primary school | | Location boundary |



MWANGI T.W.
 M.A THESIS 1986/87
 D.U.R.P.
 Map No. 3

NJORO LOCATION INFRASTRUCTURE AND LANDUSE

3.2 PHYSICAL CHARACTERISTICS

Since the people of the area rely on agriculture for their livelihood, the nature of the physical environment largely affects their operations and indeed determines what crops they grow and what animals they rear.

Geologically the area is underlain by the basement system which consists of rocks like granites, gneisses and schists. However, this system is not visible today as it is overlain by volcanic rocks which were ejected as a result of volcanicity that affected the Rift Valley during the tertiary period. These forces drastically altered the African shield causing a piling up of volcanic material. The origin of Pumice and ash on the Njoro plains is believed to be the Menengai Calderra (McCall 1967). Njoro plains allow mechanisation of land and hence attracted white settlers to the area (Plate 1). The rocks of the area, together with the climate have given rise to dark loamy soils that are 15-30 centimetres deep. The soils are generally grey when dry and black when wet.

3.2 PHYSICAL CHARACTERISTICS

Since the people of the area rely on agriculture for their livelihood, the nature of the physical environment largely affects their operations and indeed determines what crops they grow and what animals they rear.

Geologically the area is underlain by the basement system which consists of rocks like granites, gneisses and schists. However, this system is not visible today as it is overlain by volcanic rocks which were ejected as a result of volcanicity that affected the Rift Valley during the tertiary period. These forces drastically altered the African shield causing a piling up of volcanic material. The origin of Pumice and ash on the Njoro plains is believed to be the Menengai Calderra (McCall 1967). Njoro plains allow mechanisation of land and hence attracted white settlers to the area (Plate 1). The rocks of the area, together with the climate have given rise to dark loamy soils that are 15-30 centimetres deep. The soils are generally grey when dry and black when wet.



Plate 1. Typical Njoro landscape. Note the smoothly undulating nature of the landscape which allows mechanisation and extensive farming, largely based on wheat.

Njoro soils according to research done at the National Plant Breeding Station have the following traits in general.

Table 3: CHEMICAL QUALITIES OF NJORO SOILS

Quality	Percentage
Exchangeable Calcium	0.352
Lime requirement	0.130
pH value	5.230
Specific Acidity	6.300
Humus content	2.280
Total nitrogen	0.24

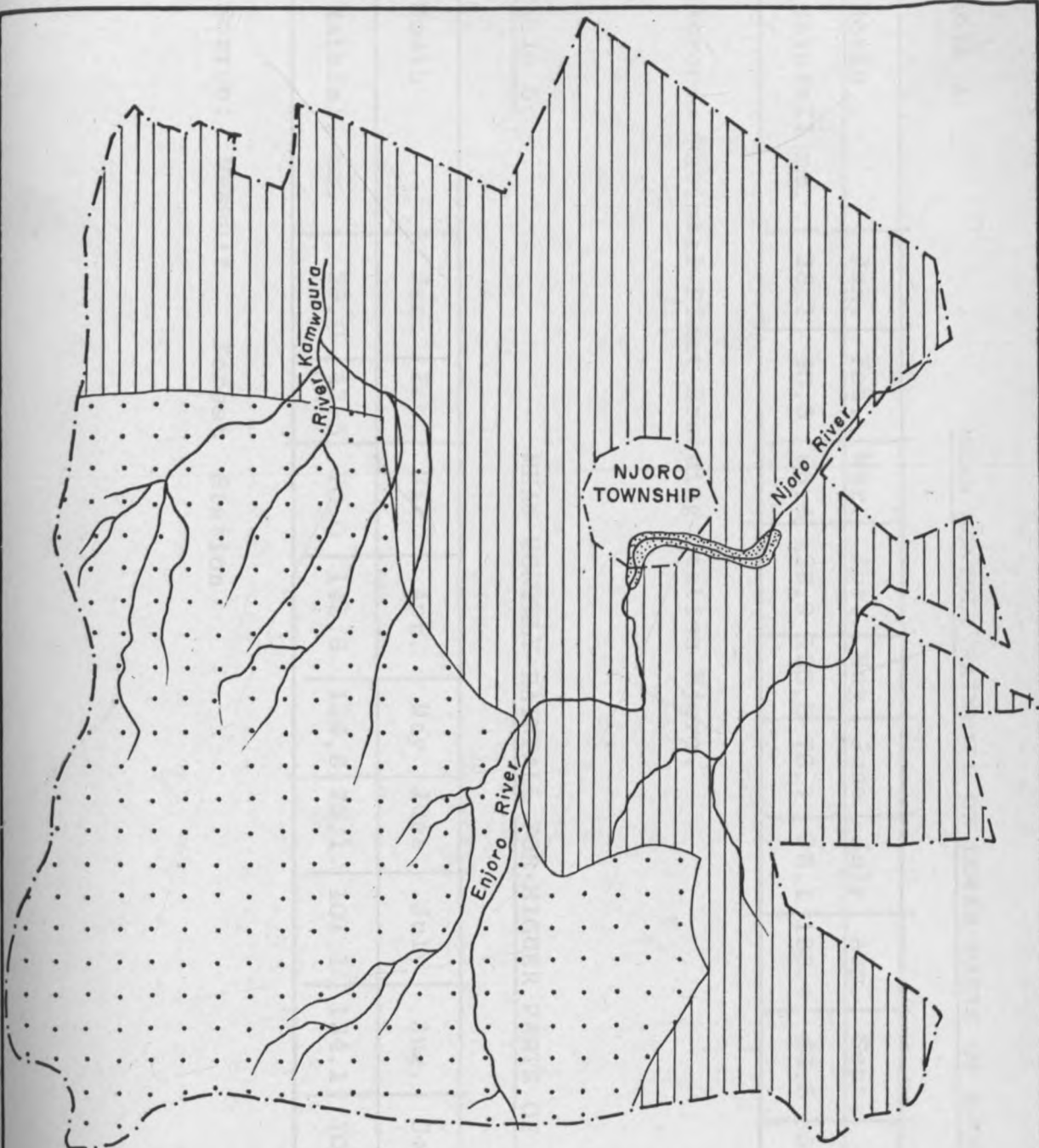
Source: National Plant Breeding Station Njoro.

The soils of the area are good for cereal cultivation largely based on wheat, maize and bean cultivation on the lower areas. On the higher altitudes the soils support pyrethrum and horticultural products because of higher rainfall (Map 3). The major problem facing Njoro soils is that they are deficient in copper element. As a result farmers have to plant wheat seed that is dressed with copper oxychloride and also spray the same chemical at the tillage stage of the crop cycle.





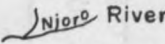
The area receives an average of 891.4 mm. per annum on the Njoro plains while the much higher areas receive 974.5 mm. of rainfall. Long rains come between March and August while short rains come between September and December (Tables 4 and 5).

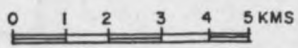
The area has only three major rivers namely Njoro Lumuriak, and Kamwaura. Of the three rivers the Njoro river is a perennial river. Surface water is a problem in the area and this largely affects dairying resulting in reduced yields as indicated later because of low water intakes by the cows. Boreholes have been dug to supplement surface water sources and roof catchment is done as well (Map 4).

The main vegetation types of the area are determined by the altitude and water amount available. Acacia Xanthophloea is found along river sources especially Njoro and Lumuriak rivers. Leleswa bush (Tarchonanthus plectostachyum) and Acacia themeida are found on the drier Njoro plains. While on the higher altitudes, Kikuyu grass as well as such tree species like cedar and cypress are found. These trees provide logs to saw mills in Njoro and Nakuru towns and are a source of employment (Map 4). With the coming of cultivators much of the vegetation is



LEGEND

-  Forest
-  Grassland
-  Riverine vegetation
-  Locational Boundaries
-  Njoro River



N + 	MWANGI T.W. M.A THESIS 1986/87 D.U.R.P
	Map No. 4

NJORO LOCATION VEGETATION AND DRAINAGE

Table 4:

MEAN MONTHLY RAINFALL ON LOWER PARTS OF NJORO LOCATION

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Rainfall mm.	28.1	40.5	66.4	136.9	120.8	76.1	98.1	128.4	68.5	56.6	71.6	46.7	891.4

Source: National Plant Breeding Station Njoro.

Table 5:

MEAN MONTHLY RAINFALL FOR HIGHER PARTS OF NJORO

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Rainfall mm.	29.0	43.5	70.0	145.6	126.6	75.1	101.1	134.1	70.9	55.2	73.0	50.4	974.5

Source: Nessuit Forest Station

cleared. Plate 2 shows a land buying co-operative society where trees have been cut to give way to cultivation of crops. Before railway engines started using diesel the owner of the farm had a plantation of wattle trees which he used to sell to the railway authorities to power the steam engines. When demand dropped drastically he cleared the trees and started growing wheat on large scale. The shareholders have not done much to re-forest the area. As indicated later, the newly settled community faces an acute shortage of fuelwood.

Unless re-afforestation is done the area may turn into a dust-bowl because of lack of adequate vegetation cover for the soil.



Plate 2: An area that was once under trees which have been cleared to give room for crop cultivation.

The combination of the geology and climate has given rise to the physical features and resources shown on Map 5. The areas dominated by wheat and maize are much drier and are also largely grasslands. The higher altitude areas are wetter and support forests and horticulture as well as dairying. Most of the people have settled on the lower areas because much of the higher portions of the location are under gazzetted forests. All land buying companies, co-operatives and schemes are found on the lower parts of the location (Map 3).

3.3 HISTORICAL BACKGROUND TO SETTLEMENT IN THE AREA

As indicated earlier, the study area is in the Kenya highlands which was set aside for European settlement after the construction of the railway line. The white settlers cultivated large tracts of land focusing their attention on dairying, sheep, maize and wheat farming. Before the colonial era the study area was occupied by the Maasai Herdsmen who practiced pastoralism on communally owned land. It was not until 1904 when Lord Dalamare moved in and settled in the area. One effect of the coming of the Europeans was that farming was introduced together with new land systems based on leasehold and freehold

titles. This was the beginning of a new era of individual land holding. Delamare started a sheep ranch but he was not very successful because the soils were deficient in copper which is a useful nutrient for pastures. Cattle died in large numbers because of Red Water and East Coast Fever diseases.

When he realised that he was not doing well in livestock husbandry he decided to embark on crop husbandry; with an emphasis on wheat farming. However, the varieties introduced from Australia were very susceptible to Yellow Rust disease that almost destroyed the whole crop. He therefore started a Plant Breeding Station with the objective of developing wheat varieties resistant to Yellow Rust diseases. This station is the present day National Plant Breeding Station.

Lord Egerton started an Agricultural College to train the White Settlers children in agriculture and this is the present day Egerton University College.

After 1945 Njoro farms were sub-divided among white ex-soldiers in appreciation of their services in the armed forces. The soldiers received loans

to purchase land and also one year training in agriculture at Egerton College. This was the beginning of farm sub-division into smaller units found in the area today (Gikonyo 1985).

After the end of the emergency period the government started focusing its attention on changing land ownership to Africans as described earlier. As a result settlement schemes were started in the early 1960s. In Nakuru, it was decided that the land be cultivated on large scale (Odingo 1970) and not small scale. However things later changed, when land buying companies and co-operatives were allowed in mid-sixties to purchase land to settle people who needed land. The state also started Haraka Settlement Schemes in 1965. This category of scheme was started to settle landless people who were squatters in forest zones or former large scale settler farms.

These people were settled as quickly as possible. Unlike harambee or shirika schemes no provision was given for secondment of settlement officers to help in the management of the farms. The selection of the settlers was the responsibility of the Provincial Administration and the District Agricultural Officers. At this particular time a group of people had come together to create a land-buying co-operative

society to purchase land in Gichobo area. The State however, stuck to its guns and said that it would go on with plans to purchase the land. The state decided, to incorporate those members of the co-operative society settler who had paid less money than others. Those who had completed paying for their shares were asked by the state, to purchase land elsewhere. This was the beginning of Gichobo Scheme. Piave Settlement Scheme was also started in 1976 to settle Nyakinyua Women in appreciation of their role in freedom fighting and in singing during state functions. It was a Haraka Scheme.

The state decided, to manage Gichobo Scheme as a Shirika Scheme and not a Haraka Scheme. In 1972, the new settlers were allocated two acres each on which to grow their own subsistence crops while the rest was left for communal cultivation. A management team was set up to manage this communal farm. It was agreed that settlers would contribute labour on the communal farm and that the proceeds from this farm and that the proceeds from this farm would be sub-divided among the shareholders. However, although the money from this farm was deposited in a bank at Nakuru, farmers never received any form of dividend for two years running. In 1976, the shareholders met

the late President Jomo Kenyatta and requested him that Ushirika be done away with and the entire land be subdivided and titles be issued. This was done bringing an end to any form of communal farming in Gichobo Scheme.

Land buying companies and societies also came into the scene. They were formed by Wananchi with the sole aim of purchasing land from the white settlers. Unlike the schemes, the settlers had to contribute money to purchase shares because land would not be freely given. The state had very little control over them and they were managed by a management committee elected by the shareholders out of the twenty two farms in the area eleven are company farms, five are co-operative farms and six are settlement schemes.

In the settlement schemes, the settlers were only provided with community facilities like schools as well as roads. No provision was given for machinery necessary for farming.

Co-operative and company farms started with those facilities that the white settlers had. These included tractors, vehicles, combine harvesters, milking machines, etc. In Rumwe farm where data was

available, by 1969 the farm had three tractors, One harvester a drill, a pick-up, two ploughs, harrow, seperator, trailer among others. Today however, none of the above machinery is in existence as they were all sold out when the farm was sub-divided in April 1979. This as described later has caused much suffering to farmers and could have a negative effect on yields.

3.4 INDUSTRIAL ACTIVITIES

The area does not have many industrial concerns. There are seven saw mills in the area that derive their logs from gazetted forests in the Mau ranges (Map 4) . They process Cypress, Pines and a few Cedar trees. There is a soap making factory in Njoro township. There is a factory that processes french beans, canning them for export. This factory used to obtain raw materials from the surrounding farms when there was communal farming. With sub-division of land, farmers have resolved to plant other types of crops. Hence they now obtain their raw materials from Nyanza, Central Province and Bahari in Nakuru North. There are smaller posho mills in town that employ between one and three people. The area seems

to have a potential especially for industries that rely on cereals for their raw materials.

3.5 MEDICAL FACILITIES

The area has one cottage hospital, one health centre and three dispensaries. There are two private dispensaries located in the township. The Catholic Church Mission also operates a mobile health clinic in the settlement areas.

CHAPTER FOUR

4.0 DATA ANALYSES

4.1 PATTERNS OF SETTLEMENT

Sedentary settlement in the study area emerged after the Kenya highlands had been set aside for European settlement. Before then the Maasai people practiced pastoralism on communally owned land.

The emergent pattern of settlement after the coming of the white man was that of scattered homesteads. Each farm had a homestead from which the farm was managed. Farm operations at that time were such that each farm was managed as a separate entity with its own pool of machinery and labour. At this time there was a tight control of the population and only essential labour was allowed on the white settler farm.

Today, the spatial organisation has changed. This is because of the opening up of the Kenya highlands for African settlement. Labour camps which supported only a few people are no longer there and the aerial perspective of the area is that of many homesteads on the former white settler farms. Figure 1 indicates the evolution of settlement pattern in

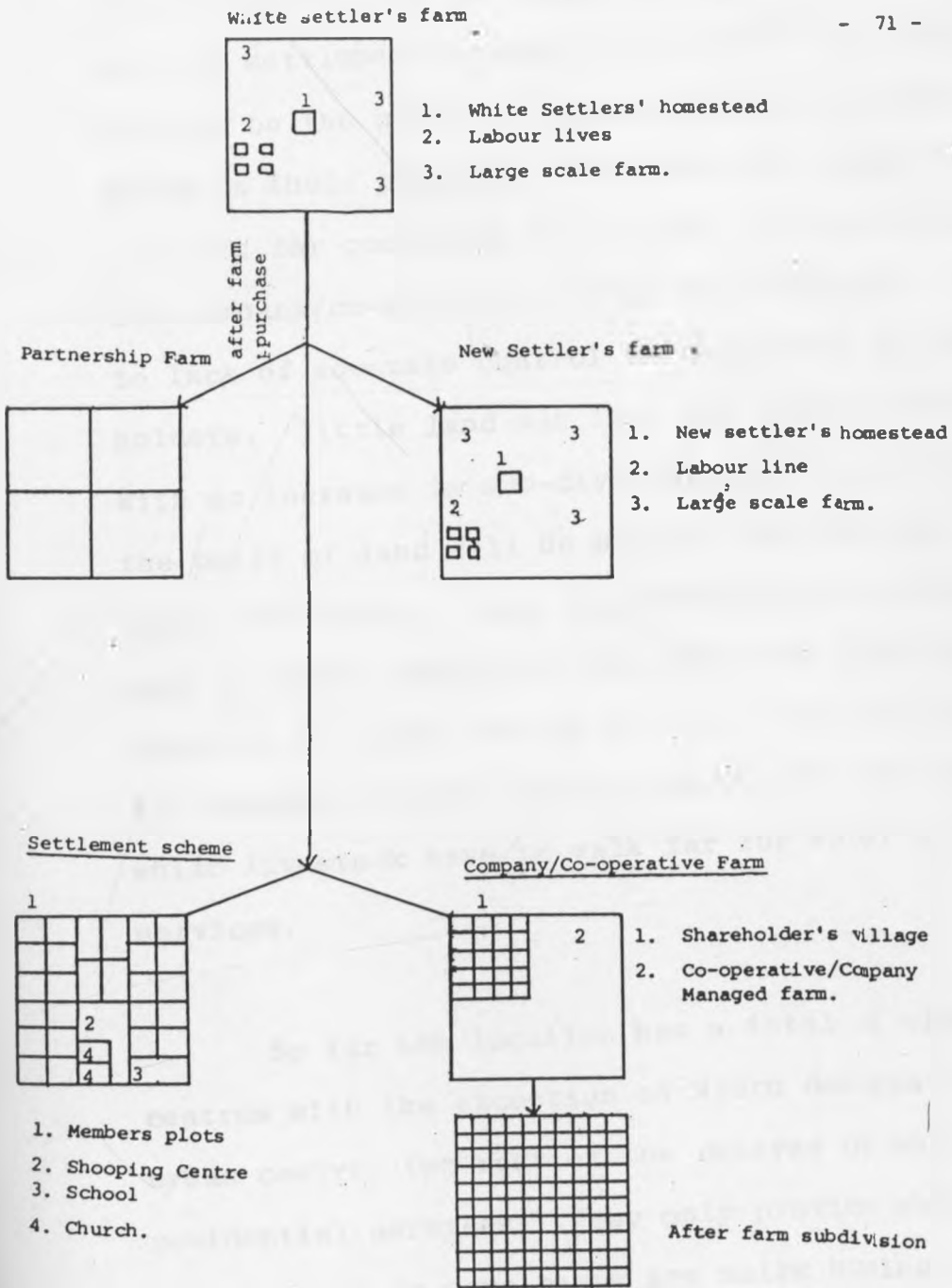


Fig. 1: Evolution of the current pattern of settlement in the location. Adopted from Ndegwa's farm rehabilitation model (with modifications).

the location since the white settler period. In the case of settlement schemes, because of the state control on the number of shareholders, provision was given in their planning to ensure that enough land was left for community facilities. The situation in the company/co-operative farms was different. Due to lack of adequate control of the number of shareholders, little land was left for communal facilities. With an increase in sub-division and farm sub-division the units of land will be smaller and this may affect their efficiency. Lack of community facilities in most of these company and co-operative farms has resulted in people having to travel for distance. For example children have to travel far for school while livestock have to walk far for water and dipping services.

So far the location has a total of eight service centres with the exception of Njoro designated urban centre, the rest of the centres do not provide residential services. They only provide shopping services and in some cases are maize buying centres. Five of these centres namely Kamwaura, Njoro, Ndeffo, Kihingo and Gacuhi are located along the major roads linking Nakuru to Kericho and Narok. (Map 3).

In the farming areas, dispersed settlement pattern is more common. This pattern has developed as a result of the movement of people to settle on their plots. The balloting system determines the plot one takes. In the area under study, economic and physical factors did not have a big role to play in determining the position a shareholder and his family settled. Although the model above, indicates that in the case of company/co-operative farms some portion of land was left aside for communal farming today however, none of the farms under these categories have such a pattern. The communal land has been sub-divided thereby increasing dispersal.

The emergence of the service centres especially the non-designated ones, need an explanation. In the case of the settlement schemes the sub-division plan was such that an area had been set aside for a shopping centre in both schemes sampled. They offer no residential function.

In Ndeffo land-buying company, no area had been set aside for a shopping centre. The centre that has developed in the farm, has done so on private plots owned by shareholders. However, licences are issued by the County Council. In the case of

Mutukanio farm, there are three centres. Two of these centres have developed on peoples farm plots and have adopted an appearance of a shopping centre (Plate 3) (Appendix 2).



Plate 3: A shopping centre that has developed on an individual plot.

The other centre has developed on the road reserve of road linking Nakuru to Narok (Plate 4).



Plate 4: Kihingo non-designated centre in Mutukanio farm that has developed on a road reserve.

Kiosks have also started developing on peoples individual plots to supply low order goods like sugar and tea (Plate 5). In the case of farms very close to Njoro town like Rumwe, the reason behind not leaving an area for a shopping centre is because shareholders argued that they would utilise services provided in the township.



Plate 5: On the foreleft ground is a kiosk on an individual farm plot to provide low order goods. In the mid-ground is a school on a 2 acre plot, it cannot expand because it is surrounded by individual farm plots and borders a railway reserve to the north west.

Services provided in these centres vary considerably as indicated below.

- a). Njoro (designated urban centre) - 1 health centre, NCPB maize buying centre, 1 mobile bank, 1 police station, 4 nursery schools, 2 primary schools, 3 secondary schools, 1 post office, divisional headquarters, electricity and telephone, slaughter house, an agent for buying and selling land, railway station, Chief's camp, 2 private clinic, an open air market, shops, bars, butcheries, mobile cinema, and also residential functions.
- b) Ndeffo - Kiosks, 1 butchery, 3 tea shops, N.C.P.B. maize buying centre, 2 nursery schools, 2 primary schools and a post office agent.
- c) Stoo Mbili - (non-designated) - kiosks, teashops, butcheries, posho mill, four nurseries, primary schools.
- d) Kihingo - (non-designated) - shops, kiosk, teashops, 3 butcheries, tailoring, shoe-making slaughter point, bicycle repair, N.C.P.B. maize buying centre, telephone, secondary school, primary school, nursery school three churches, agro-veterinary shop.

- e) Gacuhi - (non-designated) - shops, kiosks, butchery, bars nursery school, primary school, telephone.

A sketch plan of one non-designated centre is shown on Appendix 2.

From the above list, one notes that some of these centres provide services that would otherwise be expected to be found in designated centres. For instance Kihingo centre has such facilities like secondary school and telephone that we expect to find in a designated market centre. All these centres have developed because the designated centres are far from the residences of the people. From this one sees that non-designated service centres are doing very well in the area. Field surveys indicated that only 10% walk more than 3 kms. to a shopping centre. Probably without these non-designated centres, people would be travelling further.

The situation in the government sponsored settlement schemes is different. In their planning, the authorities ensured that enough area was left for community facilities. This was done through controlling the number of settlers. In the case of land buying companies and co-operatives, space for

locating shopping centres was not left because of the large number of shareholders. For example, in Kamwaura Company farm, there were 200 members and 200 acres while in Njokerio company farm there were 1135 members to share between them 521 acres. The result is that during farm sub-division priority is given towards ensuring that every member gets land while provision of community facilities is given secondary consideration. In some cases the number of shareholders increased when the management committees enrolled new members without the consent of the older members. This is the case with Kakapu and Kirobo farms; where additional forty one and nine members were added respectively. The result of this is that shareholders end up getting less land. The sub-division plan of Kirobon land buying company (Appendix 3) shows no sign of any shopping centre. Residents on this farm have to travel to Njoro which is about seven kilometres.

Until 1981, land buying companies and Co-operatives used to hire their own private surveyors to do the sub-division. It was not compulsory that the government approves such plans, as a result there lacked a clear machinery through which to ensure that planning standards were met during farm sub-division.

Although the government now ensures that the surveyors are approved by them before starting work, it is already late for some of the farms that are sub-divided and titles given. In the unsub-divided farms the state now requires that space for a shopping centre be provided as a requirement for the plan approval.

It is also vital to point out at this stage that the designated service centres in the area are located on the northern and north eastern parts of the location. Although the human settlements report 1978 says that a local centre should have a few shops it should be noted that people will always provide themselves with such facilities close to themselves. without much consideration of the designation. In the study area, these two designated centres were designated before people migrated into the area. With migration it has become necessary to serve the increased population with low order services. Since the designated service centres are spatially separated from the majority of the people, the non-designated centres have thus not only started but seem to be thriving. Appendix 2 shows a sketch map of Kihingo non-designated centre and the

facilities therein. The issuing of free hold title deeds, means that people are free to do whatever they want with their land. This is protected in section 75 of the constitution. As a result people have received trade licences from the local authorities to establish business. An agglomeration of many business establishments has given rise to non-designated centres. Such centres are poorly planned (see Plate 4 and Appendix 2). The road linking Nakuru to Narok dissects Kihingo centre thus posing danger to pedestrians. Hence, it has become very difficult to control the growth and development of unplanned centres.

4.2 EDUCATIONAL FACILITIES

The study area has ten primary schools. Assuming that 20% of the population attends primary school then we need a population of 8800 to support one four streams primary school. Hence the area needs eight primary schools and currently has ten. Hence, the area is well served with school. However, this does not mean that the schools do not face any problem. Most of these schools except those in the settlement schemes do not meet the minimum acreage required for a school. Most of them also, cannot expand because they

are surrounded by individual farm plots, (Plate 5). The minimum acreage needed for a primary school is six acres. However some schools had compounds below this acreage. Kenana primary has an acreage of 2 acres. The school was started in the early fifties by the settler who owned the surrounding farm to serve the children of his employees. With an increase in population, the school is inadequate for the surrounding population.

The school faces such an acute problem of expansion that some of its structures are located on the railway line reserve (Plate 5).

The entire location has two secondary schools. However there is no youth training centre in the area. Hence, those who do not continue with formal education have to travel outside the location to acquire skill in technical work. Indeed, this problem faces the entire division. A discussion with the local authorities indicated that problems plaguing company and co-operative farms had to be solved first, before the Divisional Development Committee could mobilise people to contribute towards the construction of a Youth Polytechnic. One clearly notes that in this community, land issues are of primary importance and must be

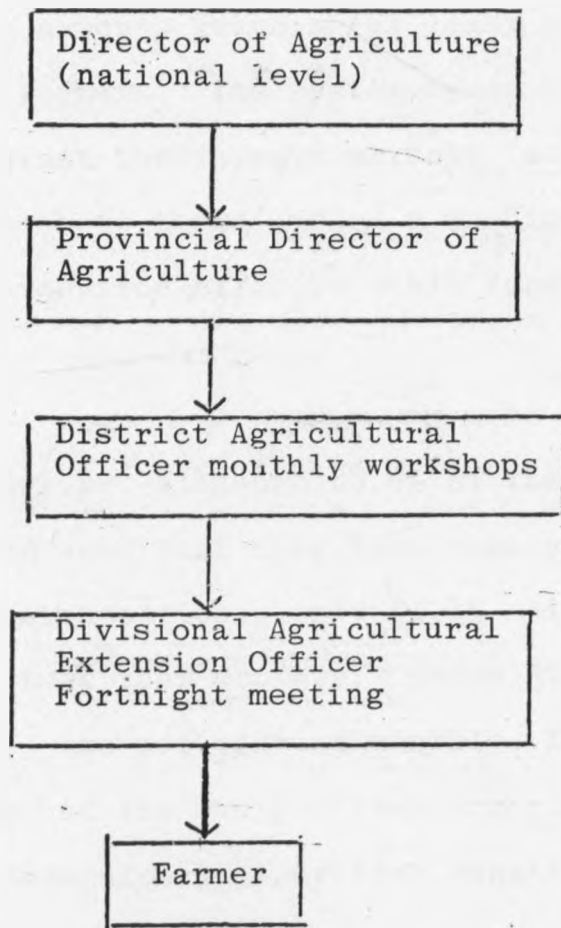
resolved thereby ensuring a stable land tenure before human resources are pooled to invest in community facilities. Because of the general shortage of harambee schools (to absorb those who do not join government aided schools) in the area as well as lack of youth polytechnics, young people have to commute to Nakuru daily a distance of more than eighteen kilometres on average (one way) to obtain education.

The facilities provided in the primary and secondary schools in the area was inadequate in most schools according to the headmasters visited. This is because, contributions from parents has not been very encouraging. The reason given is that most of the these parents depend on agriculture (66% of respondents had no other source of income except agriculture). Hence during years of low yields or when payments of agricultural produce is delayed, they also delay contributing their dues to the schools.

4.3 EXTENSION SERVICES

The area is served with agricultural extension services in such a way that every farm in theory should have one extension officer attached to it. With the introduction of the Training and Visit Programme hereafter abbreviated as (T.A.V.) in 1984

it became necessary to ensure that every farmer was reached. Before that, an extension officer would be responsible for more than one farm. The programme was a national policy to improve the extension services in the whole country. With this system, contact farmers were to be selected and nine farmers would converge in the contact farmers' home on a specified day and time to receive advice on farming. In this system, information is received from above as shown in the following hierarchy.



Farmers are visited every two weeks while the extension officers receive the information from the Divisional Extension Officer every two weeks. Monthly workshops are arranged every month at the District Headquarters where the Divisional Extension Officers meet with representatives from various Agricultural Research Stations. Field extension officers visit eight contact farmers in a day and have a four day working week. The other one day is called extra-curricular day in which the extension officers can fix a visit if necessary. Hence a single extension officer should visit at least sixty four farmers in a month reaching at least six hundred and forty farmers. The system hence ensures that the officers visit the farmers without fail unlike the old system where there lacked a machinery ensuring that the extension officers visit farmers; without fail.

However, although 63.6% of the farmers interviewed said that they have received advice from extension officers only 81.1% said that the officers visit them monthly. Hence 81.9% of respondents are not visited monthly. This new system has had its own problems according to the District Extension Officer that negatively affect its success.

Most of the Technical assistants in the field are crops oriented and have had minimal training on livestock husbandry. In T.A.V. programme, the extension officers are expected to also know about livestock so as to advise farmers. This has resulted in the officers losing morale when asked questions on livestock which they are incompetent to answer. This is proved by the fact that in 1985 none of the T.A in the location responded to the requirement of writing the monthly report on livestock even after they had received the monthly report writing programme. In the older system, an extension officer specialising say on crop husbandry could ask an animal husbandry specialist to accompany him on routine visits to farmers. Hence there was lot of inter-disciplinary co-ordination that lacks in the new programme.

The system is also very inflexible. This is because the officers cannot visit farmers until they have received information from the divisional headquarters.

In 1985, farmers planted earlier before they received any advice from the extension officers. The latter could not visit farmers because they had not received any message. In Gichobo Scheme, part of the

area is steep while the other is flat. Some contact farmers happen to be located on the flat areas. The effect of this is that, if the message recommended is soil conservation through terracing the message cannot be delivered because terraces cannot be constructed on such land. A farmer on a steeper slope who is not a contact can't be visited if he is not a contact farmer. Hence, he continues to remain with the problem. The inflexibility here is the over-reliance on the contact farmer's plot as a point to disseminate information to the rest of the farmer.

The system was adopted from Thailand, Bangladesh, Pakistan and India. These countries are characterised to a large extent by farmers who practice monoculture largely based on wheat or rice. Hence it becomes very easy to provide consistent message from land preparation through planting and weeding to harvesting and storage. The area under study is however characterised by cultivation of a variety of crops and raising of a variety of animals. If the message is on an emphasis on potatoes (as was the case in 1986) little attention is given to other crops and yet the farmers not growing potatoes need advice but because the message and emphasises

from above is on potatoes they are not helped. One of the officers interviewed said that, it is not uncommon during the visits, for farmers to ask questions on a variety of crops and animals which are not an emphasis at that time.

Although the system started well in September 1984, data obtained indicated that only 18.1% of respondents are visited at least once a month. The reason for this is that the area has more company and co-operative farms than settlement schemes. The farmer usually have plenty of problems as will be described later that resulted in farmers withdrawing from the system. The agriculture authorities felt that farmers were busy solving management problems in the farms and could not thus easily receive extension services. Due to this reason, there is an evident bias towards the schemes where tenure being more stable it is easier to disseminate information. This is proved by the fact that the authorities ensure that when the field officers attached to these schemes are on leave they are immediately replaced. This is not the case with company and co-operative farms. Also the schemes have the most experienced officers serving them. This proved by the fact that in Gichobo Scheme, the government attached an officer who had many years

of experience. He was transferred from a co-operative farm to help boost production there. There is currently a U.S.A.D. project to attempt to calculate efficiency of small scale farmers as well as try to use micro-computers in managing such farms. The programme is in Gichobo scheme hence, the need to have consistent extension advice to farmers from an experienced extension officer.

The officers also complained of lack of reliable transport to visit farmers. They only have one vehicle serving the entire division. The T.As are thus forced to walk to the contact farmer's home. This wastes plenty of time. The result is that farmers to be visited later in the day are served late and this may discourage farmers from attending.

The other problem regarding this system is that unlike the older one, farmers are required to provide the inputs themselves. Earlier on the government used to provide such inputs like fertilizers and seeds. The field officers reported that farmers are unwilling in most cases to provide such inputs. This greatly affects the working of the system.

The system also lacks follow-up. This is because the officers only interact with farmers through the contact farmer on an agreed day. Thus after dissemination of such information, it becomes difficult to ascertain that the rest of the farmers have adopted the new information.

The agricultural extension services in the location thus faces much difficulties which are largely due to the inflexibility of T.A.V. programme and insecurity of tenure especially in the company and co-operative farms.

4.4 ARTIFICIAL INSEMINATION SERVICES (A.I)

This service is provided by the government in an attempt to maintain high milk yielders. It is operated from Nakuru town. It has been well adopted in the location because 66% of respondents said that they utilise these service while the rest used bulk to serve their heifers.

The programme only serves those areas close to an all weather road. (Map 3). This because of the poor state of roads in most farms as well as few vehicles. Farmers in farms not served by the programme have to drive their animals long distances to crutches.

The programme faces a number of problems that have greatly inconvenienced farmers.

There is the problem of shortages of vehicles. The Nakuru station operates four runs. The number of vehicles required in a station is calculated using the below formula.

$$Y = 2.5x + 1$$

where Y = no. of vehicles requires eleven vehicles. However, most of them have broken down. When the vehicle serving the Njoro route breaks down farmers remain unserved for some time causing heavy losses. The station also lacks personnel. Personnel requirements are estimated using the formula

$$Y = 1.5x + 1$$

Where Y = no. of staff needed in a station
x = no. of runs served by station.

The station hence requires seven inseminators but the actual number is less than that. This is because most people after graduating prefer serving

in the curative department because remuneration is better.

Field surveys showed that 70% of respondents were not satisfied with the programme. Complaints given included, low conception rates as compared to bulls, inseminators arriving at the service crutch late hence inconveniencing the farmer and also the tendency of inseminators to serve heifers with semen from a cattle breed that farmers do not want. These reasons need further explanation to understand their route causes.

As pointed earlier the Nakuru station faces the problem of shortage of vehicles. This hence means that one vehicle serves an extremely large area. The effect of this is that the inseminator arrives in certain crutches very late. It is not uncommon to wait for him four over two hours after the time a farmer expects him to have reached a crutch. The other thing to note is that because the location lacks adequate personnel to give advice on livestock husbandry (most field officers are trained in crop husbandry) farmers expect the inseminator to do so. Hence, the inseminator apart from serving heifers does other jobs like steer castration, de-horning

and even giving advice on calf rearing. He therefore extends his services beyond what he ought to do. The sum effect is that he delays other farmers. Also, the physiological process of ovulation in a cow come in. The entire heat period lasts for eighteen hours.

The best time to serve a heifer is during the last half of standing estrus and not later than six hours after going out of estrus (heat duration). The animal should thus not be inseminated six hours after the end of heat signs otherwise it will not conceive (Otto et. al. 1979). It is for this reason that a rule of thumb exists that if a heifer is on heat in the afternoon it should be served by latest noon the following day. If it is on heat in the early morning then it should be served very late in the evening. In the study area it is not uncommon because of the reasons given above for the inseminator to arrive at a crutch very late. Therefore this may partially explain why heifers which show heat signs in the afternoon and are taken to crutches the following and served in the afternoon never conceive.

There is also the problem of heifers being served with semen that farmers do not need. Ayrshires are more popular with farmers as they are more hardy.

However, Friesian breeds have been established for a longer time since the period of white settler cultivation. The tendency is to maintain certain breeds in certain areas. In Nakuru the department has a policy of maintaining Friesian breeds. Hence, even after a farmer requests Ayrshire semen the heifer is served with Friesian semen. The farmer will never know until calving time when he realises that the animal was served with the unpreferred semen. Farmers are gradually rearing their own Ayrshire bulls to serve their animals. The danger with this is that such bulls are usually uncertified to determine their quality and may increase inbreeding which may result in persistence of undesirable genetic traits in cows.

None of the farmers was aware that it is possible to make requests so that a heifer is served with semen from a good bull from Central Artificial Insemination Services at Kabete. The semen straws are numbered hence enabling the farmer to maintain a certain pedigree he chooses. Heifers are served with any semen the inseminator wants. The Central Artificial Insemination services holds farmer's field days and produces brochures on the best bulls they have but farmers are unaware about this.

4.5 FARM MACHINERY

In the study area land preparation of all crop types as well as wheat planting and harvesting is done by machinery. This has been the case since the white settler period. With farm sub-division a number of problems exist that greatly affect farming operations. In all company and co-operative farmers visited, there remained no machinery that existed before farm sub-division. The tendency has been that all assets movable and immovable are sold on farm sub-division. Such machinery are sold to people who can afford and may or may not be shareholders.

Today's farmers do not plough or harrow in time. They wait for some time to allow cattle graze on the stables. When they start ploughing the demand for tractors is very high because many farmers need to prepare their land. The result is that they delay in land preparation and also planting.

Wheat harvesting period which starts in late August through early October is a moment of a lot of anxiety among farmers. Before farm sub-division all the company and co-operative farms had combine harvestors either during the white settle period or the period just preceding farm sub-division. Today

none of these farms has harvestors. Wheat is becoming a desirable crop because it requires less labour input and returns are much higher than maize. Farmers attempt to harvest their crop before short rains come otherwise moisture level may rise thereby lowering its quality or even causing sprouting of wheat which results in a loss of the entire crop. None of the farms today has a combine harvestor and farmers have to rely on the few individually owned harvestors. The photograph below shows a combine harvestor that has been grounded since farm subdivision. On closer observation it was noted that the machine lacks an engine although it was operational in 1979 when Rumwe Co-operative farm was sub-divided. Tractor harrows are also in disuse and have started rusting. (Plate 6a and b).



Plate: 6(a) A combine harvestor that is no longer operational in one of the co-operative farms.



Plate 6(b) Disused tractor harrows on one of the co-operative farms.

The situation in the settlement schemes is no better. This is because field observations indicated that in their planning much emphasis was given in ensuring that community facilities like schools, shopping centres etc. were provided for but no provision was given to ensure that these new farmers would have machinery necessary for farming and yet these people were to be agricultural in practice.

Field observations indicated that some farmers prepare their land as late as February for wheat and maize planting. There is usually a very long waiting list held by those who own the few tractors. This delay is partially caused by the fact that farmers graze their cows on wheat and maize stable and stalks respectively for a long period of time as few of them store fodder for their animals. Research done at the National Plant Breeding Station, indicates that time of seed bed preparation affects. There was a significant linear and negative relation $r_{xy} = -0.95$ at 0.01 confidence limits between yield of wheat and time of seedbed preparation. For every month delay in land preparation there is a reduction of 55% potential for six months. For good wheat husbandry the first harrowing should be done as early as October or latest early November. The researchers at the station further say that if preparation is done at the right time a farmer can improve his yield by 50.55%. It is thus possible that low yields or crop failure could partially be induced by the farmer because of delay in land preparation due to shortage of tractors. This is made worse when one considers the days of G.M.R (Guranteed Minimum Returns) when there was provision for compensation when farmers were unable to harvest enough wheat to repay the loans. It is

possible that the state lost a lot of money partially because of the problem of late land preparation.

4.6 FARM INPUTS

All respondents said that they utilise improved seed varieties for wheat maize and bean crops. Organic manure and chemical fertilisers the latter is largely applied to wheat crop.

Field surveys indicated that 57% of respondents had problems in obtaining the right seed variety. The problem was more serious in the case of wheat. The reason behind this is because of shortage of planting seed from the contracted large scale farms. Due to this reason farmers have in some cases resorted to either planting varieties recommended for other areas, or storing seeds from previous crop and planting them in the succeeding season. The latter practice is not advisable because in the case of wheat undesirable traits like leaf and stem rust may prevail. In the case of maize, using saved seeds will not have the same genetic traits the same genetic traits as the mother crop and yields will be much lower. Also, the fact that farmers wait until they are paid for their delivered produce so that they can purchase planting seeds is a problem. By the

time they are paid (which usually happens to be after March in the case of maize) availability of planting seed cannot be ascertained as the more established large scale farmers have already bought large amounts of seed. late payments also result in late land preparation.

Therefore small scale farmers relying on maize and beans face the problem of late payments that have an effect on their farming operations. Wheat farmers however have an advantage in that they are paid within a maximum of four weeks after delivery. However, they face the problem of obtaining the right type of seed variety for planting.

4.7 WATER

As indicated earlier, the area is not well endowed with surface water resources. As a result people have to rely on other sources of water for domestic and agricultural use. The table, below shows the respondents' utilisation of various water sources.

Table 6: RESPONDENTS UTILISATION OF WATER SOURCES

Source	Percentage
Borehole	23.9
River	24.7
Tap	6.85
Roof	43.8
Others	1.37

Source: Field Survey.

The low percentage of respondents using tap water is because the location lacks a rural water supply project for reasons to be given in a latter section of the study. Roof catchment is popular as a farmer can store large amounts of water in either corrugated iron sheet or concrete water tanks. Water tanks with a capacity of 20,000 litres are becoming very popular and can fill during the long rain period. Underground water although clean had the limitation of low borehole discharge during the dry season.

The greatest problem in this sector is availability of water for livestock. Water forms half the weight of a cow and about 87% of her milk. Milking cows need on average 80.25 litres of water per day and even

even more during the dry season. In good husbandry therefore a cow needs water ad libitum (without limit). However field observation indicated that only 14% of respondents gave their animals water without limit; because of scarcity especially during the dry season. 18% of respondents drove their animals at least a kilometre for water.

The above situation results in heavy losses to the farmer. An interview with an animal nutritionist indicated that a cow loses 0.55 litres for every kilometre it walks. Hence assuming that the animal drinks water in the morning and evening (quite inadequate due to loss through perspiration) the farmer loses 679.8 litres per year per cow which is about Kshs. 2,040. The loss may be even higher if the cow does not have enough to eat and that even after walking to the water point it does not drink enough water which is common especially if the water is highly silted or if very many cows converge at a water trough.

We are thus convinced that farmers are losing a lot of money because of their inability to ensure that the animals have enough to drink without limit.

4.8 FUEL

Table 7 RESPONDENTS UTILISATION OF VARIOUS
ENERGY SOURCES

Source	Percentage
Firewood	24.9%
Charcoal	21.5%
Sawdust	13.1%
Maize cobs	22.3%
Maize stalks	17.0%
	<hr/>
	100%

As is typical of rural areas majority of the people rely on organically based fuels. 24.9% of respondents use firewood as a source of energy. At the easily obtainable especially in the settlement schemes where natural vegetation existed. In some of the company and co-operative farms the former white settlers had planted wattle trees to sell to the then East Africa Railways to drive steam engines. However much of the area today is cleared of such vegetation to give room to cultivation (plate 2).

Today much of the firewood comes from either saw mills (as offcuts) or forests. 53% of respondents obtained firewood from the sawmills in Njoro town while 33% obtained firewood from the forests. However, because of the governments restrictions on tree felling in Man Ranges, it is becoming extremely difficult to obtain offcuts from the sawmills as they rarely have enough logs to process. Farmers have today resorted to burning maize cobs and stalks. The disadvantage with this practice is that these two fuels are useful cattle feeds. Maize cobs when ground form good roughage material which if ingested by the animal provide bulk which not only satisfies the animals appetite but also prevents digestive disturbances like bloat (Musangi 1977).

The animal if not well provided with roughage is physiologically unable to produce enough acetic acid in its rumen resulting in low lactose synthesis and finally reduced milk output. In the study area, bloating is a serious problem especially during the short and long rainy seasons. Hence, the danger of burning maize cobs and stalks.

All respondents said that fuel availability will be a problem in future and 92% of the respondents

are now planting trees to ensure adequate provision of fuelwood in future. However, farmers face the problem of obtaining the right variety of tree species.

Eucalyptus which is a common tree species competes for moisture with other crops.

In severe cases farmers have resorted to the use of cow dung as a source of fuel. Such a fuel could usefully be used as manure thereby decreasing the costs of purchasing chemical fertilizers.

4.9 LAND TENURE

This refers to the right of holding land, the length of time one can hold such land and the conditions under which one holds the land.

In the case of settlement schemes, the criteria used was that individuals had to be landless. The provincial administration was used in the selection of such people. In Gichobo Scheme settlers came from all over the province while in the case of Piave Scheme settlers came from within the district. In the case of Gichobo scheme would be settlers were settled in a village from where they would be allocated land.

However not all of them received land for reasons not clearly known. The result today is that the village is on someones land (Plate 7). The owner of the land has unsuccessfully tried to remove the squatters.



Plate 7: A squatter settlement on one of the settlement schemes.

It is therefore clear that part of the target group was not considered in land allocation. The villagers, have been residing on the scheme hopeful of getting land since Mid 1970s. The owner of the land on which they now settle finds it extremely difficult to do any meaningful investment.

In the case of the two schemes, the government issued freehold titles to land immediately settlers came in. As a result the settlers feel more secure and a site observation of the schemes together with an interview of the settlers indicates that they are engaged in heavy investment on the land because they are sure that they will remain there. Other benefits like extension services water, etc. are also provided adequately by the state as indicated earlier because of the prevailing security of tenure. There is even a U.S.A.D. project of attempting to utilise computer technology on ten-acre farms being carried out in Gikobo scheme. The authorities felt that because of stability of tenure on the scheme the experiment is bound to succeed. The Ministry of agriculture has also started registering 4 K club pupils at Gikobo primary school so that they can go and attend a one week course in farming during the April holiday 1987 in Baringo District. One thus clearly sees the benefits members in this scheme have over those in company and co-operative farms.

The situation in the land buying companies and co-operative societies is unlike that in the schemes full of uncertainty. These farms have largely been accused of mismanagement (Kenya Times 10th December 1986). Complaints of wrong acreage

allocation, enrollment of new members without consent of older members are some of the causes of uncertainty and confusion regarding their future. Unless solved, such problems may adversely affect agricultural production and even investment in community facilities like schools.

In Kirobon farm, (L.R. 12387) the management committee in 1979 increased the number of shareholders without the consent of older members. The result was that members were to receive fewer acres than they expected. On humanitarian grounds the older members agreed to co-opt the new members as the latter were unaware that the ceiling on the total shareholders had been set at an Annual General Meeting. This resulted in a subdivision plan (Appendix 3) without roads and other community donate three feet along their boundaries to give land for roads. The puzzling issue here is why the land was sub-divided in the first place, and even beacons put without the authorities vetoing it.

In kikapu land buying co-operative farm there were initially 271 members and then additional 7 were added without the consent of older members. During farm sub-division in September 1985, the

members were not given land. They have now appealed and the authorities are listening to the case. The problem in this farm is that rumours are circulating that the farm may be re-subdivided to incorporate the 37 members as they were unaware that the register had already been closed when they registered. The field investigation indicated that as a result of this uncertainty members are not keen on investing in permanent structures like houses cattle sheds and even trees because they may be moved. They are waiting for the appeal case to be heard and a final decision reached. Field observation also indicated that the Ministry of Agriculture has suspended extension services to this farm because shareholders are not willing to co-operate and support these services. Thus the longer the case is heard (which is common in land cases) the higher the uncertainty and this may affect productivity and the general development of the area.

Another problem identified as facing these farms is that of constant change of the management committees, the D.Os and D.Cs. The local administration felt that the constant change of the latter affects the quick solving of land disputes because it takes some time for the new administrators to solve the problem. In the last

one year we have had two D.Cs and two D.Os in the area which has had the effect of reaching a logical solution to the problems of some of these farms especially Kikapu.

In Mutukanio company farm the older management team was removed in 1979 because of mismanagement which resulted in some members not getting land. The new management according to the local authorities, brought in new members who were given plots some of which had been given out to other members by the old management. An area left for a shopping centre was also demarcated out hence the establishment of Kihingo shopping centre on a road reserve (Plate 4). There are cases of people having documents referring to the land they should occupy but there does not exist such land. Therefore in this farm there are more people than land. The state has therefore come in since 1980 to try to solve the problems. Some members have got land while others have got their money back after waiting to get land for more than a decade. Had there been proper control of this and other similar farms, by the central government probably such problems could not have come up. The state has come in a little too late. The squatter problem also exists in Mutukanio farm thereby worsening the problem of land tenure uncertainty.

In the case of Ndeffo farm, farm purchase started in 1960s. The farm was managed as a company farm. In 1975 two rival groups emerged. One group sub-divided the land as it was in power. The other group refused to get land and continued to reside in a village in protect. The group that got land was and is still called "Withare" a Gikuyu word meaning act quickly to save thyself because they grabbed land which also happened to be the most fertile. The late Mzee Kenyatta handled the case in 1976 (refer Saturday Nation issues from May through July) at State House Nakuru. The result was that a government surveyer was hired to do the re-surveying exercise offcourse at the dissatisfaction of the Withare group. However, because land for roads and other facilities was to be set aside, members got less land. Field investigation showed that some of the pieces of wood placed to indicate farm boundaries by the surveyor, had been uprooted. On closer investigation it was discovered that rumours had started circulating that the surveyor who did the work was not a government surveyor.

The sum effect of the above uncertainty is that people in most of these company and co-operative farms are unwilling to invest on their farms as they are not

sure of tomorrow. Also, on sub-division, people are unwilling, to continue with the co-operative spirit because of the experiences indicated above. The result is that individual farm plots now operate independently. It is of course more difficult, to provide for some of the facilities like water power etc, which when provided in large scales, result in lowered costs because of the economies of scale realised. Had experiences of co-operation been good and encouraging there is no reason not to believe that the same could work even after sub-division. Today, only cattle dipping and marketing of milk is done through a co-operative in some of these farms.

However, the experiences in these category of farms has not always been bad. The outstanding farms and Rumwe and Ng'ondu Co-operative farms. Due to their good management before sub-division, they still have co-operation even after farm sub-division. They still co-operatively own assets which are mortgaged to provide finances necessary for community provision of various facilities.

Rumwe Co-operative farm sub-divided in 1979 still own assets in Nairobi that bring in about half a million Kenya shillings. Shareholders

agreed that instead of being paid dividends, the Executive Committee start projects that benefit everybody. The first identified project is that of water and they have obtained Kshs. 1 million from Co-operative Bank of Kenya to provide water to members they have even purchased pipes for water reticulation (Plate 8).



Plates 8: Not all company and co-operative farms are poorly managed. In Rumwe Co-operative farms are co-operation has continued ever after farm sub-division. They have started a water project to serve shareholders. Above are water pipes for the project.

The then District Commissioner in Nakuru while opening a water project for Ng'ondu Co-operative farm on 17/6/87 said that neighbouring farms should emulate Ng'ondu's good management and stability the fruit of which were being seen.

An interview with the local Chief who chairs the Locational Development Committee showed that the above problems greatly affect the new strategy of planning at local level. Since 1st July 1983 when the new planning policy was introduced by the government the Locational and Sub-locational Development Committees have not put forward any proposals to the Divisional and District Development Committees. Most farms are busy solving internal problems and cannot therefore effectively participate in identifying projects specific to the location or sub-location. Also, shareholders still see themselves as members of a given community and do not successfully combine to make development proposals for the entire location. It is for this reason that the location has never had a project that covers the entire location. Shareholders in the well managed co-operatives seem to prefer farm specific projects like the water projects indicated

earlier. The same is true even for educational projects with exception of the schools located in Njoro town, before farm purchase the Njoro Location rural community has not come up with any educational project covering the entire location.

CHAPTER FIVE

5.0 CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

5.1 CONCLUSIONS AND FINDINGS

The study has found the existence of a dichotomising situation in which we have the schemes on one hand and the company and co-operative farms on the other. In the case of the former category, the state had complete control in all stages of their planning: starting from identifying the area to settle people, choosing the settlers as well as preparing the sub-division maps. The government decided on the acreage to give to each settler which was uniform in the schemes. The State's influence was broadened to ensure that settlers fully cultivated their plots and those who did not do so were de-registered. The attempt by the state to manage the Haraka _ scheme as a Shirika one in mid 1970s failed because people were not benefitting from the central communally managed farm. They never received dividends. The result was that they alienated themselves from the communal farm which forced the state to sub-divide the land among the settlers thereby ending the era of communal farming. This indicates the difficulty of communal farming even in state controlled schemes. Also, the programme of the settlers contributing labour to the communal farm failed because some settlers were deliberately absenting themselves from duty. Thus

it looks as if the practice of communal farming with the aim of paying people dividends from the proceeds from the farm was not successful.

The state has also ensured that there exists security of tenure on the scheme so that farmers can start investing immediately. The settlers were thus given title deeds to give them incentive to invest. Due to security of tenure, the farmers settled in the scheme receive certain benefits that farmers in other institutions do not. As indicated earlier, the extension services are better developed in the scheme and the state always ensures that the provision of these services is guaranteed. There is even a programme this year to sponsor 4 K club members of Gichobo Primary school to attend a one week course in Baringo during April holidays and the state will meet the total costs. In their planning, land was left aside for community facilities like schools, etc. This was done by controlling the number of members registered.

However, the study found out that in planning the settlement schemes emphasis was not given on the provision of farm machinery and yet the community would be mainly agricultural. Also no provision was

it looks as if the practice of communal farming with the aim of paying people dividends from the proceeds from the farm was not successful.

The state has also ensured that there exists security of tenure on the scheme so that farmers can start investing immediately. The settlers were thus given title deeds to give them incentive to invest. Due to security of tenure, the farmers settled in the scheme receive certain benefits that farmers in other institutions do not. As indicated earlier, the extension services are better developed in the scheme and the state always ensures that the provision of these services is guaranteed. There is even a programme this year to sponsor 4 K club members of Gichobo Primary school to attend a one week course in Baringo during April holidays and the state will meet the total costs. In their planning, land was left aside for community facilities like schools, etc. This was done by controlling the number of members registered.

However, the study found out that in planning the settlement schemes emphasis was not given on the provision of farm machinery and yet the community would be mainly agricultural. Also no provision was

given for a system of providing farm inputs as was the case with other schemes in the country. The reason is because the scheme was a Haraka one. Hence, the farmers had a lot of problems like lack of machinery which results in late land preparation which as indicated in the preceding chapter negatively affects yields. It is also difficult in the scheme to obtain inputs which also affects productivity.

In the case of company and co-operative farms the government had little control. These farms were managed by management committees which enrolled members and controlled the day to day operation of the farms. In some cases, the concerned management committees enrolled more members than the acreage of the farm as in Njokerio land buying company. The result is that little or no land was left for communal facilities. Hence people have to travel to Njoro township for some of these facilities. A number of non-designated centres have been established on major roads. Since they are unplanned, they cause congestion as shown in plate 4. The study has also found out that the community continues to grow crops which the white settlers grew. Some of them require mechanisation at all stages of their cultivation, for instance wheat. Also land preparation is done by tractors.

With farm sub-division none of the farms under these two categories had a machinery pool. This is because such machinery were sold off after farm sub-division. The reason given was that members either did not want to communally own property because of mismanagement problems experienced earlier on or they lacked an effective administration to run the pool. The result is that as in the schemes, farmers delay in seedbed preparation which as indicated earlier negatively affects yields especially for wheat. The study has thus shown that the process of farm sub-division has resulted in a decline in the provision of some infrastructural facilities like machinery.

In most of these farms there has not been any increase in the provision of facilities above those that existed before farm sub-division. The reason is either lack of space to locate such facilities or lack of incentive to co-operatively pool resources to set up community facilities. Security of tenure is unstable in most of these farms. This has resulted in members being largely engaged in solving disputes rather than in improving their farms as in Kikapu and Ndeffo cases cited in the study. In most of the Annual General Meetings, members are called to solve management problems facing their society or company and

not how to improve the operations of the farm to raise the living standards of the members. As a result after farm sub-division the management committees are dissolved and members operate independently. It is only in Rumwe and Ngondu Societies that there exists a management committee after farm sub-division to manage the communally owned assets. The result is that in future members will find it difficult to provide themselves with such facilities like water and power because of lack of economies of scale that operated before farm sub-division. In some of these farms members are not yet sure whether the land allocated to them is theirs because of the pending appeal cases on boundary disputes. It takes long to solve these disputes because they are handled by the D.O.s and D.C.s who are frequently transferred. Also conflicting statements by government officials on some of the farms has fuelled the spirit of uncertainty. In Kikapu after the land sub-division exercise in September, 1985, members made attempts to develop their plots only to be told last year that the state may re-subdivide the land.

The effect of insecurity of tenure is that the state has withdrawn extension services from

until the situation is conducive for farmers to receive the message and adopt it.

The government started taking a keen interest on the company and co-operative farms in 1981 after complaints that people were not receiving their dues. Also farm sub-division had earlier been done by unsupervised surveyors who did not follow the planning requirements. However, it was late because people had already been registered and cannot be de-registered if they are legal members. The state thus has had no alternative but allow farm sub-division without strictly following the requirements of a sub-division planning exercise as in the case of Kamwago farm. If the state had come in earlier and controlled the number of members registered by these institutions as was done for the schemes then things would have probably been better. There thus lacked a definite policy on company and Co-operative farms on how they would be planned for as in the case of the schemes. This lack of control in the initial stages left the management communities with the duty to register members, manage the farm and sub-divide land among shareholders. Some of these responsibilities were abused as indicated in the text thereby causing a chain of problems. This has resulted in an ad-hoc system of operation where

where the state has found it necessary to intervene in a situation they seem not to have been well prepared for earlier,

At the locational planning level the sum effect of the instability of tenure is that the new settlers have not yet fully viewed themselves as members of the Njoro Community. They still view themselves as members of a given farm through which they moved in. Hence, since 1st July 1983 when the District Focus for Rural Development Strategy was started, the locational Development Committee has never given any project proposals to the Divisional Development Committee for consideration. This is because people have not yet agreed on what project(s) they urgently need at locational level. It is also worth pointing out that with the exception of Njoro Day Secondary School the people of the area have never started a project to serve the entire location. Even with this school, the people had to support the project because they wanted a secondary school and since none of the farms had enough space on which to locate it in the township.

Lack of reliable water supply is another problem facing the community. Since not much attention was given to start water projects in the farms that

will ensure continuous and adequate provision of water for domestic and livestock needs. People and livestock have to travel far in search of water. 18% of the respondents drove their cows at least a kilometre for water. The result is that farmers lose at least Kshs. 2,040 per cow per year as the calculations indicated. This is a heavy loss of income to farmers especially those with large herds of cattle.

On fuel, the major source the majority of the respondents relied on was organically based fuels like firewood, sawdust, charcoal, maize cobs and plain maize cobs. Farmers are increasingly finding it difficult to obtain some of these fuels especially firewood. Maize cobs and maize stalks are increasingly being needed as a source of fuel, As such there exists a competition between their utilisation as cattle feed and as a source of fuel.

As regards agricultural extension services a number of problems were identified. The newly introduced Training and Visit (T.A.V.) programme is too rigid and does not seem to work well in an area where mixed cultivation is carried out. Most of the officers in the area are trained in crop husbandry and are hence not adequately prepared to handle livestock

production; as was recorded in the Divisional Agricultural Report for 1986. There is a danger that as the officers get unpopular with the programme it may affect the dissemination of information to farmers which may eventually affect productivity. The A.I. services are also affected by frequent breakdown of vehicles and lack of fuel. This causes a lot of suffering to farmers because of delay in inseminating an animal resulting in financial loss to the farmer. Farmers in the area do not rear bulls because of the disadvantages associated with such a practice. Hence when the services fail to be provided they are greatly inconvenienced because they have nothing else to rely on.

Veterinary Services also face the problem of shortage of vehicles. There is one Veterinary doctor in the Division who together with her staff are stationed at Njoro town. Farmers are forced to travel to Njoro and hire a vehicle to provide transport to the veterinary staff so as to have their livestock treated. During the wet season there is the problem of milk rejection by the Nakuru Kenya Creameries Co-operative plant.

Small scale wheat farmers were found to have great problems in obtaining the right type of wheat seed. They are thus usually forced to plant wrong

varieties. Delay in payment for maize deliveries is another problem. The result is that farmers are late in seedbed preparation and planting which affects yields. In 1985/86 season some farmers were paid in April 1986 after the onset of rains.

Thus, one can clearly see that this community has tried to exploit the resources of the area where most of them have come to stay. However, a variety of constraints face them in their attempts to exploit the resources. The next part of the study shall provide recommendations to solve the said problems and provide policy guidelines on settlement of agricultural communities.

5.2 RECOMMENDATIONS

The study recommends that in future resettlement programmes, the state should have much more control of all institutions involved in resettling people. The method of allowing people purchase land, manage it and sub-divide it with minimum government intervention as was the case with the company and co-operative farms should be discouraged. However, it is clear that state financed resettlement programmes are expensive and may be beyond the capacities of the central government. A system that allows people form institutions for farm purchase but in which the state has full control of all stage of planning is advocated for.

Also, it is recommended that the number of people in such institutions be controlled. This will ensure that enough spaces are left for the location of community facilities.

In all state controlled programmes, it is recommended that the government ensures that the farmers have enough input and machinery to enable them prepare and plant in time. The over-emphasis on community facilities as is in Gichobo Scheme should be avoided in future. It is hereby recommended that schemes operating on the same principles as Haraka Schemes be avoided. This is because such schemes are started in a hurry resulting in much problems as indicated earlier.

With regard to machinery, it is recommended that members are educated on the need to communally own machinery even after farm sub-division. It is proposed that co-operatives be formed whose sole purpose will be to provide services for land preparation and harvesting of crops especially wheat. Such co-operatives shall establish a machinery pool from where farmers can hire machinery. The pool shall be under a management committee appointed by shareholders.

The money obtained can be used to maintain the machinery pool as well as purchase more machinery. Such co-operatives can be encouraged especially in farms with more than four acres in which it is difficult to prepare land using manual labour. This aspect was neglected in the planning of state sponsored schemes. It is proposed that in planning for future schemes, a comprehensive approach be adopted in which alongside community facilities, other services necessary for farming like machinery etc, be included in the package.

To ensure that farmers receive input on time it is recommended that farmers' shops be established in all farms from where farmers can obtain inputs like seeds and fertilizers. These shops can act as agents of the Kenya Grain Growers Co-operative Union. These shops can continue operating even after farm sub-division. The state can also look into the possibility of contracting with small scale farmers who can produce seeds for sale to the Kenya Seed Company. This will provide income to the said farmers as well as supplement the seed produced by the large scale farmers.

The study also proposes that as much as possible land disputes should be solved by the chiefs who are closer to the people and are not subject to abrupt

transfer like the D.Cs and D.Os. This will ensure that the pending cases are solved quickly thereby bringing in security of tenure. As a result there shall be a conducive environment for investment.

It is also proposed that the authorities come up with a clear policy on the farms with sub-division problems like Kakapu and Ndeffo. It is also hereby proposed that share certificates be replaced with titledeeds so that farmers feel that the land allocated to them is indeed theirs.

With regard to communal ownership of land, the study has found that such a practice is highly unsuccessful because of problems of management. As a result members alienate themselves from the communal farm when they realise no dividends. It is recommended that such a practice should not be encouraged after loan repayment.

On milk production the study has found that farmers suffer great losses when their milk is returned by K.C.C. The reasons given are either too high fat content that increases the acidity of the milk thereby increases fermentation process or inability of the Nakuru plant to handle the milk. Farmers

have started producing cooking oil from milk in their homes and sell it locally at Ksh. 50 a kilo. The study recommends that this activity be encouraged. Probably they could start small scale industries to process the milk and milk products.

Concerning fuel, farmers face the problem of woodfuel as most trees have been cut to give way to cultivation. Majority of farmers (92%) have started planting trees to provide woodfuel. However, there is the problem of obtaining the right type of tree species that are good in agro-forestry. It is recommended that the government through the necessary department and the nearby Department of Agro-forestry at Egerton College assist in providing such seedlings.

On A I services the study found out that the services are largely affected by constant breaking down of vehicles and shortage of fuel. Lack of funds has meant that the above problems have persisted. It looks as if the state is unable to heavily subsidise the services. It is hereby recommended that the farmers pay a little bit more to ensure that the services are provided. It is also recommended that willing farmers are licenced by the Ministry of Livestock Department to rear bulls under the supervision of

the same. This will ensure that if the services fail farmers have an alternative. Also, the problem of some heifers never conceiving when artificially inseminated but do so under natural methods will be eliminated. Farmers should also be sent brochures by the Central Artificial Insemination Services concerning the bulls they have. They can also go to attend field days in the station. As a result they will be able to request for semen from a particular good quality bull they know. Farm co-operatives can make necessary arrangements.

On water, it is recommended that projects be started so as to ensure adequate water for livestock. Individual farms could start their own water projects (some have already started). Thereafter a bigger project could be embarked upon to supplement the small projects.

The study proposes that communal ownership of assets like buildings and passenger vehicles with the aim of paying dividend to members along the practices of companies be done away with. Instead the study recommends that the assets be mortgaged and the money so obtained be used to provide the people with such services like water

power etc. It is easier in this way for people to see the benefits of such assets.

On extension services the study proposes that the field officers be provided with transport. Also their transport claims should be paid as quickly as possible. Today, the claims take too long to be settled by the Ministry of Agriculture. An interview with an extension officers indicated that this is a discouragement to them; hence the urgency of solving the problem quickly.

It is also recommended, that a little modification be done to the T.A.V. programme. It is proposed that the present system that assumes that the extension worker is a mind of all jobs be altered so that other specialists like animal husbandrists accompany the crop based extension workers. This will enable the latter provide adequate advice to the farmers.

5.3 FIELD FOR FURTHER RESEARCH

- (a) There is need to do research into the efficiency of the settlement patterns that have emerged in the area with an attempt to finding out the most optimum pattern to allow efficient resource exploitation as well as reduction in costs of providing services.

(b) Research is required to find out the best level at which to plan for the people in the area. The study found out that people have a stronger sense of belonging to their farm through which they were settled and not to the sub-location, location or division.

BIBLIOGRAPHY

1. Abrans P.D. 1979 - Kenya's land Re-settlement Story - Challenge Publishers and Distributors.
2. Aziz S. 1978 - Rural Development: Learning from China - MacMillan Press Ltd.
3. Brammah M. 1977 - Planning New Rural Settlements in Indonesia. Ekistics: The Problems and Science of Human Settlements Vol. 43 (257).
4. Corry J.C. - 1980 - The History of Agricultural Education in Kenya - Ph.D. Thesis - University of Wisconsin.
5. Cherry E.G. 1976 - Rural Planning Problems - Leonard Hill Publishers.
6. De - Vries J. 1978 - Agricultural Extension and the Development of Ujamaa Village, in Tanzania: Toward a Dialogical Agricultural Extension Model - Ph.D. Thesis - University of Wisconsin.
7. Dickenson J.D. et. al. 1983 - A Geography of the Third World - Methuen and Company Ltd.
8. Doxiadis C.A. 1968 - Ekistics: An introduction to the Science of Human Settlements - Hutchinson of London.
9. Habeson - 19 - Land Resettlement and Politics of Rural Development - IDS University of Nairobi, D.P. No. 28.
10. Helleiner G.K. (ed) - 1968 - Agricultural Planning in East Africa - East Africa Publishing House Nairobi.

11. Heyer J. et. al. 1970 - Rural Development in Kenya - East African Publishing Huouse.
12. Kayondo D.K. 1975 - The effect of D.F.I. courses on Improved Farming Practices and Innovations - University of Nairobi.
13. Kenya Republic of - Ministry of Agriculture and livestock Development Department of Agriculture Report 1983.
14. Kenya Republic of - Nakuru District Development Plan 1979-83.
15. Kenya Republic of - Nakuru District Development Plan 1984-88.
16. Kenya Republic of - Sessional Paper No. 1 on Economic Management For Renewed Growth 1986.
17. Kenya Republic of - Ministry of Agriculture and Livestock Development District Annual Reports 1981, 1984, 1968, 1985.
18. Leonard D.K. - 1974 - Organisation Theory for Agriculture Development Agencies An Analysis of Kenyans Extension Services - Chicago Illinois.
19. Lele U - 1975 - The Design of Rural Development: Lessons from Africa - John Hopkins University Press Baltimore.
20. Mabogunje AL - 1980 - The Development Process: A Spatial Perspective - Hutchinson and Company.

21. Mbithi P.M. - 1972 - Innovation in Rural Development
IDS O.P. No. 158 U.O.N.
22. Mbithi P.M. - 1974 - Sociology and Rural Development
Its Application in Kenya, East
African Literature Bureau.
23. McCall G.J.H. - 1967 - Geology of the Nakuru
Thomson. Falls - Lake Hannington
Area - Ministry of Natural Resources
Geological Survey of Kenya.
24. Mugerwa H.S. - 1983 - The Impact of Farmer
Training on Farm Output in Homa
Bay South Nyanza - M.Sc. Thesis
University of Nairobi.
25. Muthee H.S. - 1975 - Distribution of Non Farm
Inputs in Kenya with Special
Emphasis on the Role of Agricultural
Co-operatives - M.Sc. Thesis
University of Nairobi.
26. Ndegwa E.N.D. 1977 - The Impact of Settlements
On The Development of Nakuru
District - M.A. Thesis University
of Nairobi.
27. Nsereko J. - 1980 - Selected Causes of Peasant
Agricultural Problems: The Case
of Uganda - Kenya Literature
Bureau.
28. Odingo R.S. - 1963 - Some Aspects of the
Agricultural Geography for the Kenya
Highlands - Ph.D. Thesis University
of Liverpool.
29. Odingo R.S.- 1971 - The Kenya Highlands: Land
and Agricultural Development -
East African Publishing House.

30. Ogendo R.B. and Ojany F.F. - 1978 - Kenya: A case study of Physical and Human Geography - Longman Kenya Ltd.
31. Oyugi W.O. - 1981 - Rural Development Administration: A Kenyan Experience - Vikas Publishing House PVT Ltd.
32. Pinfold and Norcliffe (eds) - Development Planning in Kenya - Department of Geography Arkinson College New York.
33. Swynnerton R.J.M. - 1954 - A Plan to intensify the Development of African Agriculture in Kenya.
34. Vries J.D. - 1976 - Has Extension Failed? A Case Study of Maize Growing Practices in Iringa Tanzania P.E.R. Paper No. 1 University of Dar-es-Salaam Tanzania.
35. Whitby M.C. et al - 1974 - Rural Resource Development - Methuen and Company Ltd.

APPENDIX 1

LIST OF ALL FARMS IN THE LOCATION

Company Farms

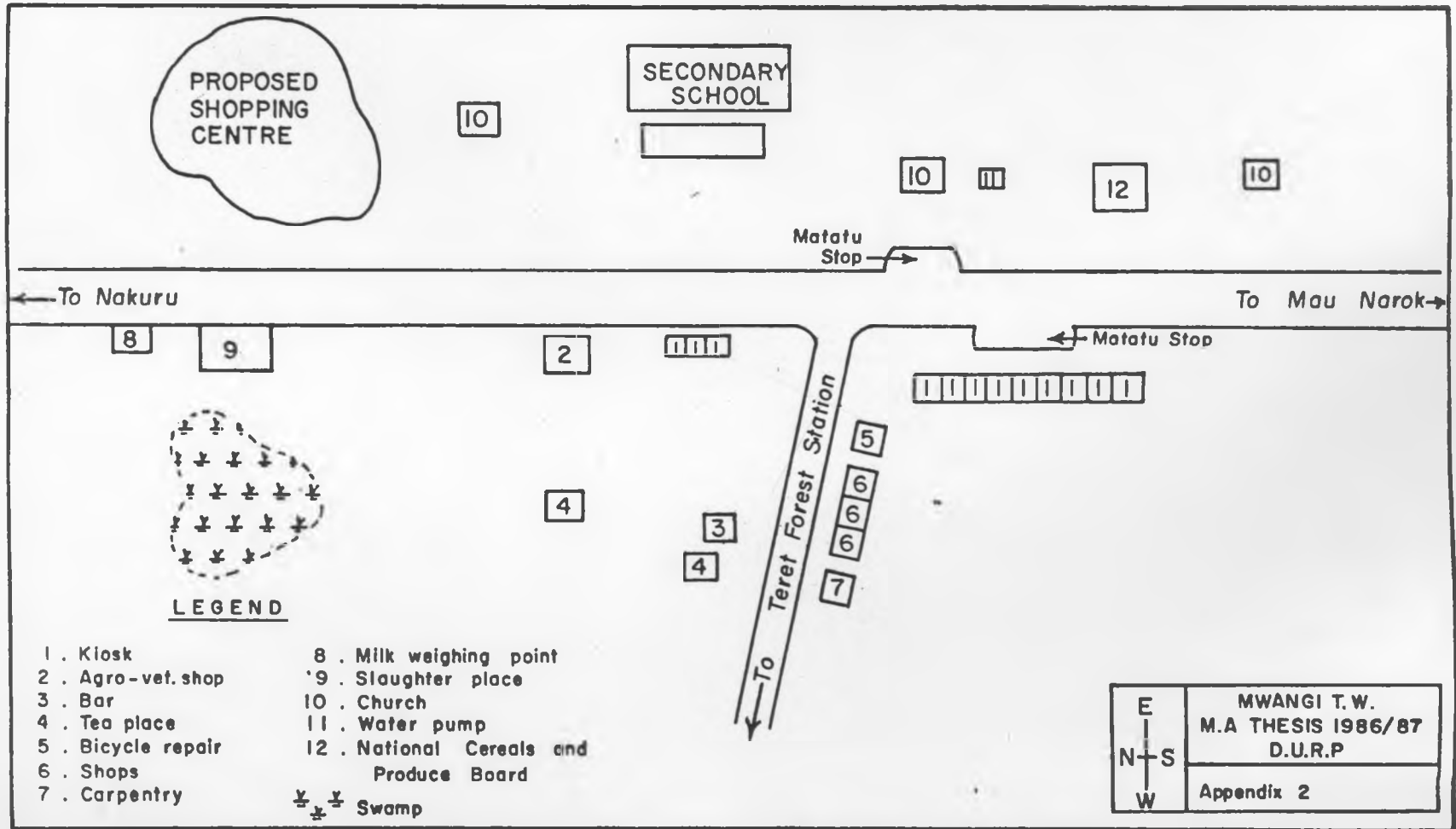
Name	No. of Shareholders	No. of sampled Farmers
1* Mutukanio	5,000	40
2* Kamwaura	200	2
3* Belbur	178	2
4* Njokerio	1,135	9
5* Mwigito	99	1
6 Kamwago	300	-
7* Ogilgei	200	2
8* Erithia	48	1
9 Kirobon	250	-
10 Ingobor	35	-
11* Ndeffo	1,170	9
<u>Co-operative Farms</u>		
1* Rumwe	48	1
2* Kikapu	266	2
3* Ng'ondu	49	1
4 Kimakia	39	-
5 Mukungugu	160	-

Settlement Schemes

Name	No. of Shareholders	No. of sampled Farmers
1* Gichibo	500	9
2 Bagaria	1,197	-
3 Karma	70	1
4 Rotharine	14	0.2
5 Kiriri	1,097	-
6* Piare	1,122	20

*Sampled farms for study

Source: Divisional Agricultural Office.



SKETCH LANDUSE MAP OF KHINGO NON-DESIGNATED CENTRE