

WOMEN'S ACCESS TO LAND AND AGRICULTURAL PRODUCTIVITY
IN KIPKAREN DIVISION, NANDI DISTRICT, KENYA.

BY

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A THESIS IS SUBMITTED IN PARTIAL FULFILMENT OF THE
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DECLARATION

This thesis is my original work and has not been submitted for the award of a degree in any University.

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Jebet Merab

This thesis has been submitted with my approval as a University supervisor.

Dr: Peter M. Ngau 

DEDICATION

*To my parents for their love, support and encouragement
throughout my lifetime as a student.*

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I want to acknowledge the assistance given to me by the Office of the President by issuing me with research clearance certificate that enabled me to collect data for this study. I would like to thank all my respondents who gave the information asked in the questionnaire. They did this willingly, and for this I am grateful. It would not have been possible to write this thesis without their cooperation. Two research assistants (Abraham Ngetich and Peter Korir) worked tirelessly to collect this data and I would like to extend my special thanks to them for work well done.

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Immeasurable thanks go to my parents for their great struggle in educating me. Special thanks to my mother who has been my greatest source of inspiration.

I am wholly responsible for writing this thesis and any errors that may be in it should be attributed to me alone.

ABSTRACT

The main objective of the study was to determine whether women's agricultural productivity is affected by the amount of land they have access to.

The research was carried out in Kipkaren Division, in Nandi district, Kenya. A sample of 60 women were interviewed about their access to land and their tenure security and their agricultural production.

The research was interested in the following issues: the area of land owned/or operated by women farmers of different marital status; patterns of land acquisition and type of land tenure security; production of food and cash crops by area and yield for different categories of women; whether the land has been registered and if so, in whose name; other constraining factors such as labour, credit, extension services, level of education, age and decision making power.

The analysis involved calculations of percentages and means of samples. The findings revealed that different categories of women have access to different amounts of land and that their agricultural productivity also differs. Married women in female headed households, were found to have access to the biggest land sizes (5.2 acres). Second in the category were the widows with 4.5 acres of land. This was followed by married women in male

headed households with 1.4 acres of land. Single women were also found to own land; the average amount of land owned being 1.25 acres.

On the other hand married women in female headed households were found to have the highest agricultural productivity (18.75 bags of maize per acre). This was followed by married women in male headed households with an agricultural output of 17.87 bags of maize per acre. Widows and the single women had the lowest agricultural output of (13.75 bags of maize per acre) and (12.5 bags of maize per acre), respectively. The study therefore concluded that, the poor productivity of widows and other women in female headed households was not caused by their having access to less land but by other factors like the level of input use. It was found that, it was the limited amount of land accessible to married women which constraints their total production.

The findings in the study revealed that, decision making power is also important in increasing women's productivity.

The findings in the study showed that women involved in cash crop production had access to more land (5.2 acres). The study however revealed that older women, women in small households and those in households with larger land areas had access to more land.

In general the study indicated that women of different social categories face different problems in their agricultural activities. To improve the productivity and total agricultural production of women, their problems should be addressed by the relevant authorities in ways which are sensitive to their social differences.

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ABBREVIATIONS

GDP:	Gross Domestic Product
GNP:	Gross National Product
SIDA:	Swedish International Development Authority
UNZALPI:	University of Nottingham and Zambia Agricultural Labour Productivity Investigation

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Kenya has since independence relied heavily on the agricultural sector as the base for economic growth, employment creation, and foreign exchange generation. The sector is also a major source of the country's food security and a stimulant to growth of off farm employment, both of which are of primary concern to the government.

Approximately 80% of the country's population live in rural areas and depend on agriculture for their livelihood and out of this, about 75% of the labour force is engaged in agriculture (Republic of Kenya, 1994; 1997), which means that agriculture provides employment to majority of the people either directly or indirectly. In this respect agriculture can be looked at as a channel through which rural development can be achieved. It is important to note here that rural development can only be achieved through improvement of the rural incomes and this is possible through creation of job opportunities.

Agriculture also provides nearly all the national food requirements in Kenya. With increasing population then, agriculture is faced with a greater role of feeding this population. Agriculture also provides the raw materials for the industrial sector (agro-based industries). It actually accounts for 30% of Gross Domestic Product. As such accelerated growth in agriculture will increase employment opportunities, enhance

foreign exchange earnings and act as a catalyst to improve the standard of living of the people.

1.2 Statement of the problem

This study seeks to examine the ethnographic context of women in agricultural production in contemporary Nandi community in Kenya. The central issues considered are women's rights to land and how this is related to women's role in agricultural production and decision-making on the farm.

Access is the amount of land which a woman has access to in terms of control and decision-making.

Data utilized here was collected by means of a questionnaire composed of a number of standardised questions as well as open-ended questions. A total number of 60 women were interviewed.

The field research included questions designed to elicit information on the current position of women regarding land and land use. The research is focused on the following issues:

- (1) the area of land owned/or operated by women farmers of different marital status;
- (2) patterns of land acquisition and type of land tenure security;
- (3) production of food and cash crops by area and yield for different categories of women;

- (4) whether the land has been registered and if so, in whose name;
- (5) other constraining factors such as labour, credit, extension services, level of education, age and decision making power.

Some of the factors contributing to the slow increase in agricultural production is the low level of, technology, irregular or inadequate supply of modern inputs and state intervention in the pricing and marketing of major agricultural produce. Among the not so often mentioned factors is the marginalised role of women in agriculture.

Since most of the tropical countries in Africa, Kenya included, are trying to improve the agricultural situation by reversing some of the adverse policies, it is imperative to ask ourselves whether with 25-35% of the small holder farmers being female heads of households (Due, et al., 1991) they do not need specific agricultural policies to assist them.

Due to a variety of circumstances, including the rapid rural urban migration of men in the mid 60s women are also increasingly assuming major responsibilities as heads of households.

The deteriorating terms of trade for primary producers at the global level and the rising cost of technology that African countries have to import, together with the emergence of new class structures have generated a process where cash crop production for export is given a priority at the cost of sacrificing self-sufficiency in food production. Almost all African countries have been forced to import food products in addition to many other commodities. Women from poor households as principal producers of food to the household are the most negatively affected members of rural Africa. Against all these odds, they continue to meet their primary obligations.

Disappearance of communal land tenure dispossesses women of land, and recognising men as the new owners of land decreases women's control over productive resources. Credits and loans are less readily available to women, as they are made against land titles or made through co-operative societies of which men are mainly members. Also agricultural extension services are unequally channelled to men and women. In most cases, agricultural extension services focus on men as the only target group and identification of "improved farmers" is both sex and class based. Schemes aimed at the "progressive" farmer exclude not only women but also many of the poor.

Colonialism and present day agricultural experts have exacerbated the tendency for cash crop production to be in male

hands because of the European view that farming is a "Male" occupation. As a result women's predominant role in African agriculture has been ignored and rural women have lost their right to land due to land reforms introduced by European administrators. Consequently, women are rarely involved in the development process either as participants or beneficiaries, as experts fail to assign any roles for women in programmes of training for agricultural modernisation and other development projects. Hence, an urgent call for the integration of women in development.

Although women have always participated in all levels of production in Africa, the process of development is leaving them out. New technologies are invariably directed towards men, and where women get to participate in their use, the benefits almost always accrue to men. A very small percentage of women compared with men, have access to informal agricultural training or agricultural co-operatives.

Although the role of women in agriculture is increasingly being recognised and appreciated their full integration in the development process is yet to be achieved.

The greatest challenge which faces developing countries today is to eliminate hunger and overcome poverty. This challenge is greater in rural areas where employment is not readily available

as in towns. There has also been a considerable increase in food production hence the gap between the demand and supply continues to widen. As such food production is very important in the economies of developing countries.

The future development of Africa depends in considerable measures on the fuller utilization of women's productive capacity, especially in agriculture because that is where they are mainly employed.

To promote broad-based rural development, priority should be given to the agricultural sector with the goal of raising farm incomes, from which all else will follow (Mellor, 1976). This requires efforts to remove the bias against agriculture, often embedded in Macro-economic policies, and to raise agricultural output and productivity by encouraging the adoption of new farming technologies.

Yet, numerous studies record the persistence of low even declining levels of agricultural productivity, and report that farmers often resist efforts to get them to change their ways, and to adopt new methods of production (Rohrer, 1986). In a review of the literature on the adoption of agricultural innovations, Feder et al. (1985) examined several explanations that are commonly put forward. These include; inadequate farm size, insufficient human capital or levels of education, the

shortage of labour, lack of incentives associated with land tenure arrangements and constraints in the supply of agricultural inputs.

1.3 Research Question

What are the constraints to women's agricultural productivity in Kipkaren Division as it relates to land accessibility?. What are the possible planning solutions to the constraint's identified?

1.4 Objectives

1. To determine the nature and extent of women's access to land for agricultural development in Kipkaren Division.
2. To assess how women's access or lack of access to land affects agricultural production and productivity in Kipkaren Division.
3. To assess how women's access or lack of access to land affects their decision-making role on the farm.
4. To propose strategies for overcoming the identified constraints.

1.5 Study assumptions

1. That resource development would be greatly improved if the constraining factors to women with respect to land accessibility are removed. This will help in translating national policy issues into reality.
2. Increased accessibility to land by women will greatly

- improve their agricultural productivity and production
3. Increased women's participation in decision-making power, education and labour will increase agricultural productivity and production.

1.6 Justification

As noted from Kieni (1996), for the next several decades agriculture will continue to play a crucial role in the economies of developing countries. Therefore, efforts should be put to improve agriculture and this can be done mainly through research.

Past policy has tended to ignore the real place women have in subsistence and development activities and this has been reflected in the neglect of women in the channelling of the information, organisational and material facilities needed to capitalise on locally available development resources. As long as this state of affairs continues, available major development resource base will be wasted.

The five year national development plans usually reflect the Government's policy on different issues of development. The development programmes undertaken in Kenya reflect the thinking that all citizens are included irrespective of gender; target beneficiary groups are often referred to as "the poor people" "small scale farmers" "informal sector", etc. Women are hardly

mentioned as a distinct target group and if they are it is in the "social services" context and as groups whose development activities remain at the peripheries of the development.

The government's policy towards women can best be described as ambiguous; public statements of recognition of women's contribution to national development and intended to support women's development efforts are common, while on the other hand development planners have failed to recognize, the economic value of women's contributions in and out of the home to overall national development. Although the government generally recognises the women's role as producers, particularly in the agricultural sector, which is also the mainstay of Kenya's economy, allocation of adequate resources and other support systems to enable women to perform better and benefit from their labour have not always been forthcoming (DANIDA, 1989:9).

The government holds a "social, welfare" perspective to women's issues and consequently intervention programmes supported by the government have the same perspective. This attitude neglects the women's role in development.

As long as the productive capacity of the bulk of this significant percentage of the continents human resources remains ill-equipped for the tasks at hand, or largely taken for granted, so long will rapid national and continental development

continue to be sluggish and uneven. Hence one of the important challenges facing scholars on the subject of women studies is to draw the attention of decision-makers on constraints on women's full participation in development at the family, communal, national and continental levels.

Since "Women in Development" is a relatively new field the development literature has not sufficiently addressed the issue of access to resources and technology by different categories of women and their production in agriculture. While a number of studies have shown the particularly disadvantaged situation of female headed households (Chiley, 1990; Keller and Phiri, 1986), no study has, however, been carried out to find the effect of the limited access to resources, particularly land, by different categories of women on their agricultural production. This study is carried out to find out exactly the amount of land accessible to married women, single women and widows. It also inquires as to whether the amount of land accessible to women has any effect on their total agricultural production and productivity.

Along with land, this study looks at the effect of the type of land tenure security women have, their marital status and level of decision making power, all of which are hypothesised to affect women's agricultural productivity (Mwambazi, 1994).

This study of women's access to land and its effect on their agricultural production and productivity is justified by the following reasons:-

a) Women constitute a large proportion of Kenya's small scale farmers and therefore are an important part of agricultural development (Government of Kenya, 1996).

b) The country's improvement in agricultural production cannot be achieved unless farmers, including women are given the essential resources to increase their productivity. This study will investigate the necessity of formulating policies which will increase women's access to agricultural land and their control over it.

c) Through the Seventh National Development Plan, the government has a policy of integrating women in development (Government of Kenya, 1996). It is hoped that this study will be of valuable use to policy makers and planners when considering ways of increasing agricultural production and income of different categories of women in an effort to improve their welfare (Mwambazi, 1994).

1.7 Criteria for choice of the Division

Kipkaren Division is entirely within the high potential zone (annual rainfall of over 857 mm) which is suitable for agriculture.

Kipkaren Division has therefore a high potential in the production of food compared with many other districts. From the point of view of providing basic foodstuffs, it may be in the nations interest to have this potential realised as soon as possible. This, however, must be weighed against the relative poverty and under-developed state of other areas with less productive potential, and the concomitant needs of the people living in these less advantaged regions.

Land is the basis of rural existence in Nandi community, therefore, it seemed appropriate to inquire into the rights of women to land accessibility as it affects their relationship to land and its implications for agricultural work done by women.

1.8 Scope of the study

The study covered women engaged in agricultural production, both small and large scale. It involved women of all marital status and all levels of education.

1.9 Research methodology

Kipkaren Division has an area of 96 square Kilometres. According to the population census report (1989), Kipkaren Division has 2063 households. It has a population of 12609 people. The Division is therefore extensive and travelling from one area to another was not easy. Taking this factor into consideration, it became necessary to employ a sampling procedure that would

reduce the area of study to a manageable size. A random sampling selected one location in which the study was conducted, that is, laboret location.

The number of households in laboret location were estimated to be 500. 10% of these households means interviewing 50 households but a sample of 60 households was preferred for more accuracy. The sampling interval was therefore 5 meaning that every fifth case was interviewed during the listing process.

1.10 Identification of informants

In this study, four major types of informants were identified; that is, married women in male headed households, the married women in female headed households, the widowed, and the single women. In the Nandi community, it is culturally held that male heads are the ones that own land, tools and inputs, and control the labour on the farms. This makes them be sole decision makers. The purpose of the above categorization of women was to determine the extent to which marital status and household headship allowed women to make, or not make decisions on farm activities independent of their spouses or male relatives.

Traditionally, married women enjoyed full usufructory rights of parcels of land allocated to them by their husbands. Such women were expected to make full use of the land to meet their household needs in food, while at the same time they held these

parcels of land in custody for their unmarried sons. Single motherhood resulting from divorce or separation and unwed motherhood were all phenomena that were discouraged among the Nandi. This made such status rare in the past and women under this category were allocated land by their male relatives. There are also married women whose husbands are not in residence, thus making such wives automatic heads of their households. Decision-making must of necessity be associated with heading the household.

Before deciding on the number of informants to be interviewed, the researcher conducted a two day pretest research. During this period, the questionnaire was administered to the would be informants, of which four were interviewed. On average, this was two persons per day. At this rate and considering the physical demands of the research, it was decided to interview between 50 and 60 informants. The sample interviewed therefore was 60, which constituted 12% of the listed number of households.

From the 60 women who were primarily interviewed, key informants were used to elicit indepth data about the issues that were being studied because they had shown competence in these issues.

The second type of informants were drawn from government workers, for example the agricultural extension and administrative officials and local leaders in Kipkaren Division.

1.11 Data collection

Data collection was carried out through structured interviews. Standard questionnaires were administered to make sure that all respondents interviewed were asked exactly the same set of questions in the same sequence. The questionnaire was composed of open ended and close ended questions. The purpose of the close ended questions was to limit the informants to specific choices and responses which would allow easy determination of percentages during the analysis. Open ended questions aimed at allowing verbatim on the part of the informants, from which the author would analyze and incorporate the useful materials. Administration of the questionnaire was conducted by the author and two research assistants.

Secondary data sources were also used. Records from agricultural extension officers were examined and literature on women's participation in agriculture and development as a whole was revisited in order to enrich the analysis of the data.

Finally direct observations of agricultural operations was carried out in the field. Observations of women working in their fields and activities in their homes were made.

1.12 Data collection and analysis

The data have been analyzed using percentages. From the responses given by informants frequencies have been recorded and from these, percentages have been worked out. Higher percentages support presented statements while low percentages negate the statements in question.

In this work, the units of study are individual women agricultural farmers. The main focus was to establish similarities and dissimilarities of those individuals in so far as their decisions regarding agricultural activities are concerned.

1.13 Definition of terms

Access

In the Nandi community married women and widows enjoy full usufructory rights of parcels of land allocated to them by their husbands; at the same time they hold these parcels of land in custody for their unmarried sons. This is the land that the researcher is referring to when she talks about access to land by women.

Access therefore in this research is the amount of land which a woman has access to in terms of control and decision-making. It is measured in acres.

Constraint

Here a constraint is defined as a requirement in an alternative which the decision-maker is unable to resolve.

Agriculture

Janick (1972) defined agriculture as purposeful work through which elements of nature are harnessed to produce plants and animals that meet human needs. It is a production process which depends on selected plants and animals within a local environment, exploited through cultural knowledge and skills learned from past generations by a socialization process (Steward, 1955).

1.14 Problems encountered

On the whole, very few problems were encountered. The informants were quite helpful and agreeable; however, the informants had several questions on which they sought clearance. One of the commonest questions asked was, how was the research going to benefit them?. The informants cited past experiences of researches such as the one I was carrying out, as having yielded no benefits on the myriads of problems that the farmers faced. To this question the answer given by the researcher was that, the government will, when funds are available tackle some of the problems that faced farmers in the area.

The other problem experienced is that of married women wanting to portray the ideal situation of a man head of household, who is to be is consulted in all matters before decisions are made. Other women portrayed the ideal picture of a husband and wife who make decisions together on all issues. This was easily cross-checked when the spouse's occupation and place of residence were ascertained.

CHAPTER TWO: LITERATURE REVIEW

2.1 Women and the agricultural economy

The predominance of women in the rural areas of Kenya has long been recognised. Recent researchers (Pala, 1975; Njau and Kabira, 1980; Onyango and Kayongo, 1996; Staudt 1975; Reynolds, 1975; Bookman, 1973; Mbilinyi, 1971) have indicated that African women in rural areas not only shoulder their traditional roles as cultivators but also combine this with the roles previously associated with men.

At face value, these observations may lead one into assuming that the Kenyan agricultural economy is effectively under the control of women and not men. However the true position shows that the role played by women though substantial is in most cases restricted to the provision of labour, while most men control both the means and surplus of production. Added to the fact that men have a lead in the control of the formal or monetary sectors of the economy, it becomes obvious that Kenya's economic power lies in the hands of men and not women. Land ownership is one of the major economic structures which either hinder or promote women's participation in development.

It is increasingly recognized that rural development is predominantly the development of women, as women are numerically the majority in many parts of Kenya's country side, with its historical patterns of male-outmigration. If women have no

access to the ownership of property, this presumably affects the entire agricultural and rural development strategy.

It is the aim of this study to try and investigate the origin and development of such an arrangement whereby women are seen to be so central to the agricultural economy and yet do not have the right to own the means of production. This is largely the result of the functions of socio-economic and legal structures evolved into pre-colonial and colonial periods and continued into post-independence. Thus, certain legal regimes have acted within the cultural, social and economic organizations under the three periods to create a situation whereby women share heavily in the labour input in the economy but control disproportionately less of the land, which is the crucial resource in any agricultural economy.

Though much has been written about women and their contribution to economic development, it is questionable that lack of land ownership by women has not been highlighted. Ownership or lack of ownership of the means of production on which the rural women work may have a lot of impact on their position and the role they play in economic development. As recent researchers have indicated, rural women are the peasants, domestic workers, the majority in small scale farming, environmental managers and custodians of family life (Njau and Mukambi, 1985).

According to Ogendo (1984), there was no individual ownership of property in traditional African society. The power of allocation was simply an aspect of land use administration and not a right. Security of tenure was based on rights of use alone, which were mainly enjoyed by women.

Okoth-Ogendo further observes that although women did not have the power of land allocation in indigenous tenure systems, their security of tenure was enhanced, in that a woman as a wife had to be allocated a parcel of land on which she cultivated as the principal producer of food crops. In what has been described as hoe-culture, women's work is seen as having been done all year round (Kabira and Njau, 1985).

Gutto (1987) adds that before colonialism in Kenya, all societies lacked differentiation based on ownership of the means of production. Property was held on a corporate basis, the corporate body being referred to as the family. Title to land was vested in the members of the family and no individual member of the family could dispose any part of it without the consent of other members.

Alienation was legalized in 1902 by the enactment of the Crown Land Ordinance (Gutto, 1987). Alienation introduced the concept of land as private property, with the accompanying rights of final disposal. The division of clan land to individual plots

through registration and inheritance vested ownership in males mostly, since those who had the power of allocation could not obtain title deeds. Women's use rights now was at the discretion of the ownership of the land, not customary privilege (Ogendo, 1979). Gutto (1987) further sums up that it is therefore the colonial structure which provided for the climate necessary for the alternation of property relations within families in general. With this kind of ownership structure, women were deprived of their traditional control.

One of the important challenges facing scholars on the subject of women studies is to draw the attention of decision-makers and policy-implementers to constraints on women's full participation in development at the family, communal, national and continental level.

Recent research has shown that women's functions as producers are and have been critical, especially for the welfare of poor families. In addition, given those situations where an institutional mechanism for addressing the concerns of women in development exists, frequently these institutions suffer from a lack of adequate data for planning.

The general situation is well known-even if there is good census data in the country, frequently the way in which the data has been collected and categories defined, hide the women from the

planners: the data generally available on economically-active populations frequently exclude the productive activities of women.

Kenya's economy depends heavily on its agriculture. Women, being the majority of the rural population, contribute the larger share of the rural labour force. Since the role of women in Africa agriculture is already large and growing, they have a key role to play in revitalizing agriculture, especially food production.

Agriculture has long been the dominant sector in much of Africa in terms of output, employment, and export earnings. However, since the independence decade of the 1960's, much of the history of agricultural development in Africa is a story of development failure. This failure is reflected in a rate of agricultural output growth that lags well behind the rate of population growth. Between 1965 and 1990, agricultural production grew at an annual rate of only 1.7% or a little more than one half the 2.8% average annual population growth rate. The gap between agricultural output and population growth widened significantly during the 1980's, especially the first half of the 1980's, when the rate of growth of output fell well below its longer term trend rate and population growth accelerated. Hence, regional food imports (including food aid) increased substantially and today represent about 10% of food consumed in Africa. In the

late 1970's for the first time in its history, Africa became a net importer of food and at current growth rates the food gap is projected to increase to more than times today's gap by 2020 (Cleaver and Shreiber, 1992).

Most African countries have failed to comprehend and respond to the growing role of African women in the economy. Increasingly women are responsible for decisions within the household that impinge on the volume and composition of agricultural output, household food security and the family's size, health, and educational attainment. These decisions also affect the rate at which Africa's economic structures change and the size and quality of the labour force. Women farmers face special constraints that limit their options both outside and within the household. These constraints limit their contribution to the nations production and diminish the economic and social welfare of their household. The future development of Africa depends in considerable measure on the fuller utilization of women's capacity, especially in agriculture because that is where they are mainly employed. Kenya's agricultural future depends critically on further raising the productivity of the small holder sector, dominated by women.

Of all the resources necessary for subsistence (other than one's own labour), by far the most important is land. In terms of development projects and programmes, control of land acquires

importance not only in its own right, but as security for credit, and often as providing the criterion for peoples access to inputs such as agricultural extension, physical plant, irrigation, chemical inputs and membership of co-operatives. Without land, people lose their security and are reduced to serfdom through their deprivation of land. Similarly, control of land use and its products is of critical importance to women.

The distinction between the ownership and control of land and other resources is a vital one. Excessive interest in the right to transfer land to others, which is of relevance mainly in the context of establishing theoretical descent lines, could be misleading in terms of the actual decisions about the land and its use, which are of immediate importance in the farming system. It also tends to assume that land is controlled by one person only, whereas this may be the exception rather than the rule for example, on small holdings in Jamaica one of the main characteristics of family land is that it is left jointly to two or more members of a family. When a married man dies, his widow takes over control for as long as she lives. Only blood descendants of both partners normally inherit rights to land, except that a man's illegitimate children and other 'outsiders' may be included if they live in close association with the family and its land.

The fact of land being controlled by more than one person, in some kind of partnership, is one that must be kept in mind when dealing with the idea that 'traditionally' only men own land. Since, in many different societies, they are in fact given land only at marriage, there is a clear implication that the women's participation is essential to its proper management. The same may be true of women's rights to land, acquired on marriage, as in a 'binna' (matrilocal) marriage in Sri Lanka. The emphasis is on a viable partnership in management of land and its eventual transmission to the next generation. Rockwell suggests that the co-operative production system with its division of labour ensures and reinforces the prolonged co operation of the marriage partners, which is often reproduced in ritual and ideology: the fertility of the human couple is compared with the fertility of the fields under their joint management or to that of their livestock.

The Western concept of outright ownership by a single individual as the basis for land tenure has had the effect of suppressing the practice of joint ownership, or qualified rights to land and other resources in which women participate. Since colonial and development planners have been extremely reluctant to recognize women as holding rights in land, except perhaps in matrilineal or matrilocal descent systems, the right to land and control over its use were almost invariably ascribed to men.

De Wilde (1967) also stresses the importance of the traditional rights to land in a developing rural economy: land, he states, 'is at the heart of the African's security and many of his traditional practices and customs. He argues in fact that usufruct is not a separate category of rights but closely related to ownership, although control may not be absolute as in cases where the right-holder may not transfer the land to outsiders.' In most of tropical Africa, individual families may be said to control their own land, together with the right to transmit it to successive generations, at least as long as they use it.

The changing definitions as to rights over land and other resources are of crucial importance to women, and to overall development. Pala (1976) suggests that in pre-colonial pastoral or agricultural economies, women were usually well protected economically because their 'usufructory' rights in land and cattle were well defined, and were actually more effective than individual ownership. The normative emphasis on usufruct extended also to other resources such as fish game, salt licks, water, herbs, vegetables, fruits, fuel, clay and thatch. This favoured the individual economic rights of all kinds of people. In addition, since productive labour held precedence over formal ownership, the system guaranteed control over the products of the land and other resources, to all those who were working.

2.2 Taking women's land a world-wide phenomenon

Africa

The process of removing women's rights to land is by no means confined to Africa; however, it is there that it has been observed most frequently. This appears to be because land tenure in Africa has been, until very recently, the least affected by serious overcrowding (apart from the 'reserves' set up in countries where numerous white settlers were taking over large tracts of land, as in parts of Southern and Eastern Africa).

De Wilde (1967) however, questions the advisability of consolidating land holdings. With the loss of women's customary and with no obligation on right-holders to work their plots, he also notes that in the Central Province, where registration had been carried out against a background of local enthusiasm, 'we noted considerable areas which have been left idle or virtually idle', to the extent that special fiscal penalties were having to be devised to penalize men who held land without using it (De Wilde, 1967).

De Wilde (1967) describes a land consolidation and registration programme conducted by the colonial government in Kenya, 'avoiding needless refinements' as an economic measure and relying heavily on 'committees of landholders representing, above all, the men who under customary law were competent in land questions'. The authorities provided 'surveyors' who were

the ultimate arbiters in disputes-only males then being eligible for government employment.

Ester Boserup (1970) for example, notes a number of cases where European colonial administrations instituted land 'reforms' which eliminated women's rights, most conspicuously in areas of predominantly female farming as in France and Belgium Congo, the Bikita reserve in Rhodesia-where the 1975 land reform excluded women from all rights to land, while often their absentee husbands received formal title-and in the Transkei reserve of south Africa. Colonial land policies in Tanzania are described by Reynolds as following a similar pattern to those in Kenya; the colonial authorities, equating the power held by certain traditional male leaders to allocate land with the Western concept of ownership, assumed that men owned all land; in areas of land registration therefore, the power to allocate was interpreted as the registrable interest. As men were given formal title to land, women lost the guarantees of the traditional system, and could not, in many cases, prevent it being sold to competent outsiders. Furthermore, she points out, there was no functional institution to support the new system of individual ownership rights, to provide for competing ownership claims equivalent to those offered women by the original system.

Jacoby (1971) although he completely ignores the role of women, points out the factor behind the colonial policy of

individualizing ownership rights which is of central importance here: it encourages manipulation and speculation in land by foreign commercial interests and also by those who can use a traditional position to claim private ownership, such as chiefs and headmen, who may exploit the situation to become feudal lords or capitalist farmers. He stresses that the 'typical colonial trend' of individualizing land tenure continues under the present government, 'trained in the spirit of colonial powers'.

The dilemma of women in situations that allow men to monopolize land dealings is forcibly expressed by Poznanski (1977) of the Solomon Islands, in the Pacific. Explaining that the current law is a combination of customary, unwritten law and formal legislation modelled on the British system, She adds that in islands like her own, Ysabel women have had a strong position in society with regard to land dealings and other issues.

2.3 Cash crops; agricultural development for men

Colonial and post-colonial law and administrative policy have been powerful forces for the erosion of women's rights to land. Other powerful influences have also been involved, in particular the concentration of agricultural 'development' innovations on men and the increasing identification of women with a stagnant and dwindling subsistence sector in an emerging dual economy.

The involvement of men in official efforts to develop cash cropping, especially for export, has been observed by a number of writers particularly in the case of colonial Africa where, as William Allan (1965) sums it up: 'The extraordinary development of the production of cash crops by African cultivators, mainly within the last 40 years, is something unprecedented in colonial history. It would be misleading to say that only men grow cash crops; in fact women both grow and trade cash crops to a considerable extent. Ester Boserup (1970) notes one case where administrative efforts to promote cotton production in Uganda brought an enthusiastic response from many of the women.

Women's efforts to build up the subsistence sector as a counterweight to men's cash-cropping activities can be quite frantic. Lele (1975) talks of the 'inordinate' amount of time spent by women on their food crops; their insistence on giving these priority over working on their export cash crops controlled by men is seen as a major obstacle to the development projects, which almost invariably attempt to promote the cash crops.

Despite strenuous and often ingenious efforts to adapt to the polarization of agricultural activities, the woman's subsistence sector frequently declines in areas of agricultural commercialization. Food price policies, favouring the politically important urban population often have a detrimental effect on efforts to produce a surplus of staple food items for

sale. SIDA (1974) points out that the lending institutions do not deal with women largely because credit is based on land titles or in cases, especially in co-operatives, on the coming year's yield from the perennial cash crops. Marketing opportunities designed to aid small producers often discriminate against the low-priority basic foods: in a review of the co-operatives throughout the world, it was found that subsistence crops are rarely included in activities. Women in many areas have taken up petty trading on their own account, and are particularly prominent in this activity in much of West Africa, to the extent that it is frequently assumed that women often control a disproportionate share of the wealth there. Mullings (1976) who has reviewed the quite extensive literature on this question, concludes that this is in fact an illusion: although there are a few very wealthy traders, the overwhelming majority are in a poor position to earn more than a marginal subsistence despite their very strong market associations; the work is precarious and very time-consuming; and the women are tending to lose ground to the former marketing sector.

The concentration of land ownership in male hands through the commercialization of agriculture parallels the increasing concentration on a small minority of more favourably placed landowners, when really large-scale inputs are involved as in the case of India's 'green revolution'. A dependency relationship is created on an even greater scale, since only the

rich land owners are in a position to invest the necessary resources in cash crop production, while subsistence cultivators safe with staple crops only.

Disadvantaged as they are, when identified with the subsistence sector of a dual economy, once this has been taken over by the demands for land or labour from the men's cash sector, women may be in a much worse position. In a North India village, Rampur, which is located in an area of highly developed, irrigated and mechanized agriculture, women in Jat (peasant usually landowning caste) families have the worst of all worlds in respect of agricultural development (Shantri 1975). They now do extremely hard manual labour while the men do much less; one man commented, 'In this village, when it comes to work in the fields, we say 'ladies first'. At the same time:

'They have no control and little part in the decision-making about the family farm, in terms of what is to be grown and its marketing. Nor do they have any control over the money obtained from selling their crop. The men do all the management and the marketing and the women are not seen as having any automatic rights to the proceeds' (Shantri, 1975).

Taking women's rights to land has enormous complications in terms of the incentives offered to them for their work on the land, while at the same time the allocation of absolute ownership of land to a few men can lead to the exact opposite of

what is intended: absentee ownership, and sometimes the abandonment of productive land because rights over it are no longer conditional on cultivating it. If agricultural production increases, it is at the expense of equity for women and their dependants and increasing duality in the economy and within every family. Too often, this kind of land reform' in fact leads to declining yields and contributes to the growing crisis for many Third World countries in national food self-sufficiency.

2.4 The total subsistence work-load

The total amount of subsistence work done by women is not recorded in most studies of the labour force, or in manpower' studies and planning. Time-budget studies are just beginning to appear rather sporadically which do cover some or all aspects of women's work. With overwhelming uniformity, they depict rural women as working extremely long hours, and expending energy without adequate rest on a wide variety of tasks, all of which are essential to a family's survival. In most if not all cases, women's work is seen as much more arduous and time consuming than men's. In fact women in urban areas suffer much more severely from the lack of paid jobs than men, while:

...in the rural areas it seems widely true that women are overworked rather than underworked, in the sense that they work very long hours, are pressed by many duties and obligations, are responsible for much of the work in agriculture production as

well as for virtually all the food preparation, housework and the care of children ...' (Moore, 1974).

Very little detailed time-budget study involving all activities has been done for African women, however. A survey of women's work in villages of Upper Volta describes them as working a fifteen hour day starting at five in the morning, during the growing season, and mentions that the physical demands of the work leave them exhausted (SAED, 1977). The worst tasks are seen as preparing the millet by pounding and grinding, and fetching water- neither mills nor wells having been provided by the project management, since this work is seen as irrelevant to agricultural production. A similar observation at a rice resettlement scheme in Kenya indicates that about 11 hours a day were involved in various activities, six days a week, at all times of the year (Hanger et al., 1973).

The most detailed time-budget work has been done in various countries. The study of rural Delhi village, by Haswell (1967) records adult women as spending an average of 4.9 hours a day on 'domestic' tasks, including grain-milling, fetching water and fuel, cooking and the rest, and 4.5 hours on agricultural tasks: a total of 9.4 hours a day. Other observations from North India indicate that men are able to take a day off on Sundays, and have very slack periods at certain times of the year, whereas women's work continues with little variation at a high level.

2.5 Women's farm work: a major determinant of food production

The various kinds of non-farm work carried out by women are clearly essential to subsistence in terms of providing water, edible food and other basic items.

In Africa, according to Lele (1975), labour availability is a constraint on agricultural productivity to a greater extent than elsewhere, particularly Asia, where land availability is more important factor. It is in Africa too, that women's agricultural work has been recognised by some observers: Lele (1975) for example, mentions the 'disproportionate' effort by women in Agriculture, which can be double the amount of field work done by the men even if all non-farm work is excluded. And since men's non-farm work is frequently less critical to subsistence than the women's, the male labour input is more elastic than that of the female. This creates a serious labour bottleneck, especially at peak season, for women's labour in the fields, which together with the non-farm work can create intolerable demands. The men's and women's labour bottlenecks occur at different times particularly given the men's refusal to do many of the tasks to which little value is attached, like weeding-tasks currently allocated mainly to women. It is very often that weeding that is the crucial bottleneck, since it has to be done within a very specific period of time in order to provide a reasonable yield from the crop in question. Generally speaking it may be women's crops and women's fields which are the most

affected by the impossible demands made on women's time and energy at peak periods.

A series of surveys of labour inputs into agriculture in Zambia have indicated that women's labour is in fact the major factor in production there. It was found that differences in the number of males in a farming family did not influence the number of acres sown (in an area where land shortage was not itself an important constraint); however the number of females available was the most important variable in determining acreage (UNZALPT, 1970).

The crucial operation, it is emphasised, is weeding, which is done as is the majority of the cultivation-by women. Women work an average of 42% more than men in the fields, and the degree of skill used in cultivation, as well as the energy and time expended, are particularly critical, given the use of improved seeds which can only provide a better yield with a high standard of husbandry, for example planting in rows with the correct spacing, and adequate fertilization of the soil. The importance of women's work is even greater in the families of farmers' using more innovative methods than those of 'villages' which are more traditional. The report is marred, unfortunately, by the observation of the men incharge-contrary to their own findings about women's key role in the production process-that it is the presence of women as consumers that exerts the principal

pressure on the (male) cultivator to increase his acreage'. The researchers in question allowed their prejudices about women to obscure the extremely important findings of their research about women's key role in agricultural production. This refusal to recognize the obvious is of course widespread. A welcome exception is the observation by the ILO mission to Zambia (1970).

The general conclusion which emerges from surveys and interviews is that women are in general over-worked in rural areas, that women's labour is one of the factors which determine how much land can be cultivated and how well; and that the pressure on women's time is an important constraint on raising agricultural production'.

Deere (1977) suggests that, in fact, women's importance as agriculturalists has increased considerably as poverty has intensified and men have started to take other jobs wherever possible.

The concentration of land holdings, combined with demographic growth, have required male semi-proletarianization in the rural areas with the woman remaining as the primary agriculturalist on the subsistence land plot. Women's greatest agricultural participation, relative to men, is found among the poorest stratas of the peasantry, those without sufficient access to

land to produce their full subsistence requirements.' As the family loses access to the means of production of subsistence, the importance of agriculture in generating familial subsistence also declines. As relative importance of agriculture diminishes, agriculture appears less as a male occupation and more a familial activity. Wills (1967) has data from Kenya and Uganda to show how a 'shift' in the division of labour has been occurring, where women do many tasks previously considered for men only, but with men very rarely taking over women's work. She also observes that men retain or intensify their control over the sale of produce. Lele (1975) makes the general observation that in Africa the division of labour, although 'bewilderingly diverse', is a major factor in restricting labour availability (from men), because of their refusal to do the despised 'women's work'. The logical consequence of such trends is that as women take over men's tasks in agriculture, and men maintain a rigid refusal to do 'women's work', the subsistence farm work done by men will grow less as time goes on.

The division of labour by gender is very flexible. Levine (1969) in his analysis of African societies from which there is a high rate of labour migration, found that the division of labour by gender is often modified but at the same time accentuated. The men become mobile, and women are more bound than before to the homestead because they have to try and do the men's work in addition to their own. They do not gain any more rights to cash

from the sale of produce but in fact lose ground in some cases. Men's greater mobility, both potential and actual, has probably operated in a very complex way to increase the burden of subsistence work for women. Pepe (1978) has offered a very interesting description of the process in Niger, where both the size and the composition of family labour has altered considerably in recent years. The decline in household size is mainly characterised by the break-up of family control over male labour; the older men in charge of the extended family have much less control over their younger male relatives since they are able to leave the area for paid employment. 'Male access to cash incomes through migration, conflicting with the household head's responsibility for providing for the household and paying taxes on behalf of all unduly members, is partly the cause of this'. Since the younger men are absent for part of the year, it is preferable for the elders to facilitate their entry into independent farming and into taking responsibility for their own taxes. However, they have retained control over the women, who cannot leave so easily, and have clearly pressurized women to take over tasks previously categorised as being male. The women resent this fiercely, invoking the authority of the religious leaders, the marabouts, against their doing men's work in addition to their own, when the resulting production is even more tightly controlled by the male elders than before-their rights to land from which to make a small income of their own having been reduced to a 'concession'. Men freely admit that

they now give women the worst plots of all. The loss of control over young men, leading to increased pressure on the women, may be a widespread phenomenon. Haswell (1967) noticed something rather similar in Gambia, where the breakdown of the extended family into nuclear family units had undermined the system for pooling male labour and so made it more difficult to clear the land by the axe and fire for millet production. This made it necessary for people to rely more heavily on rice crop, which had traditionally been the sole responsibility of women.

The increasing loss of control over male labour for subsistence, which then becomes identified, almost in its entirety as women's work, is associated not only with the physical absence of men from their subsistence household, as they migrate temporarily or permanently to work elsewhere, but also with their refusal to work even when present in the household. They may become consumers instead of producers for the subsistence unit (Haswell, 1967).

Haswell (1967) observed a syndrome in Gambia, which may well apply fairly generally, where men are sporadically present but not doing much subsistence work. The periodic visits of the lower-paid men to the village are often not at the time when their labour is needed, at the harvest period, and when there is plenty of food. These visits occur more frequently in the 'hungry season' when they are feeling economic stress and decide

to leave off their families for a while. Remittances from male migrant workers are often negligible, not compensating for the loss of their labour, and it tends to be spent on men's entertainment and consumer goods rather than on basic family subsistence.

Das Gupta (1976) observed that in families with several women, the men would prefer to stay at home rather than help with harvesting: "the men take a holiday. In Kenya, only 54% of males over 17 regularly work their own holdings, as compared with 85% of the females.

Women cannot leave their increasingly intolerable situation in the rural areas as readily as men; paid employment is very much harder to find, their ties to their children are often much closer, and their families may have much more control over them than over young men. In many cases, if they leave the area, they also, unlike men, abandon all family ties and all rights to be supported by their families as well as their right to land.

Rural women play multiple roles in the world's agricultural systems. They may be mothers, housekeepers, wage labourers, agricultural processors, market women, and entrepreneurs as well as agricultural producers. Most rural women make constant trade offs in allocating labour time and productive resources among

their roles and obligations. In most farming systems, gender agricultural responsibilities are mixed, combining crop production for which one sex is primarily responsible with crops to agricultural production.

Women are often responsible for the livestock, vegetables and tree crops located near their dwellings. They are more likely to be involved in cereal production in the hoe cultures and irrigated rice systems than in extensive low cultures (Boserup, 1970). Although in low technology systems poor women are likely to do more field work than are prosperous women, in highly mechanized systems such as Japan, Eastern and Western Europe and North America, women in well-to-do farm households do substantial amounts of field work.

At present, there is very little in the literature which directly addresses the issue of women's productivity in agricultural systems, and the work that has been done is analytically fragmented; social scientists and women-in-development scholars have expanded the knowledge of women's roles in rural societies and have generated theories to account for systematic shifts in men's and women's productive activities as agricultural technology has changed. However, their work has focused on documenting and analyzing women's roles and participation rather than women's productivity.

Recent economic models of the agricultural household have made women's productive work more visible, both because they have enlarged the definition of farm production and because they have viewed women's labour time as a rationally allocated productive resource as it becomes increasingly clear that the home and the fields compete for allocations of capital resources and family labour.

Structural or institutional factors may contribute to gender differences in productivity as agricultural systems are modernized. Boserup (1970) made the classic feminist argument linking resources to productivity. Although differences in productivity between the sexes might be expected to fall as agriculture becomes less dependent on human muscular power, she observed that men monopolize the use of new equipment and modern methods. Therefore, men's labour productivity tends to rise while women's remains static. She concluded that the tendency toward a widening productivity gap is often exacerbated by cash crop cultivation among men, while women produce food crops for the family without cash income for investment in farming techniques.

Boserup (1970) drew on African experience, and her arguments did not explicitly extend to modernized agricultural systems. In the last decade, numerous studies have been carried out attempting

to confirm or reject her arguments. Some results demonstrate that women with responsibility for particular crops or with management responsibilities for entire household production systems often lack access to modern inputs through exclusion from farmers associations or cooperatives, and through lack of access to capital, credit or government extension services (Staudt, 1978). Mook (1976) however, found women farm managers in Kenya equally productive per hectare when compared with male managers, though less productive per hour. The women had less capital and used fewer purchased inputs. Instead they substituted increased labour for other inputs.

women's unique ability to produce new human capital through childbearing is usually ignored in agricultural household models, although other household production models devote considerable attention to determinants of fertility. After childbirth women continue to carry out much of their productive work while simultaneously attending to the needs of their children. This system of joint productive work is characteristic for many women in farm households, particularly when they are pregnant and nursing. Joint productivity is not easily handled by standard economic procedures but methodological work on the value of children is establishing inroads in this area. Davanzo and Lee (1978) provide useful insights on the compatibility of childcare with other productive work and on the opportunity costs of household members time. While infants and young

children demand a great deal of time, older children can substitute for a mother in a number of tasks, and they also expand the family labour force, thus increasing household production. The presence of other adult women in the household within polygamous or extended family structures also influences the pattern of women's productive activities, and thus their productivity.

Women's relatively smaller size and strength are often cited as the basis for assuming their lower productivity in farm labour and of-farm employment. In the analysis of farming systems there is a tradition of weighting a woman's productivity at .75 or .8 of a man's (Norman, 1980). Empirical analysis of input-output data in Africa (Mooik, 1976; Staudt, 1978) and Sri Lanka (Uphoff, 1983), does not support these weights. In Bangladesh, Chen (1982) by contrast, women's productivity was lower than men's when carrying earth and rocks for building. Productivity differences based on size and strength vary by task, and may be greatest for tasks that demand most body mass and strength (Deere, 1977). Although it is difficult to measure work by different family members, more rigorous data collection and analysis is recommended to establish the realistic weight ranges for tasks necessary for accurate economic analysis (Norman, 1980).

Using a household framework, the literature is partial and fragmentary, and there are numerous methodological problems in fairly valuing women's products in unpaid household and human capital production. In gender segmented labour markets, women's lower wages are often justified by the assumption that they are less productive than men per hour of work (Binswanger and Doherty, 1982).

A final factor influencing women's productivity is the extent to which they have access to education and training. There is general agreement that education increases productivity and a substantial literature exists on the positive effects of women's education on human capital development (World Bank, 1980) household production (Evenson, 1980) paid labour force participation (Huffman et al., 1980, 1975) and agricultural production (Moock, 1976). One recent Indian study found that formal education of farm wives increases the productivity of all farm inputs, including husbands' time on farm production (Rosenzweig, 1980). Yet according to UNESCO, women compose less than one third of primary school students in the low income nations of every region except Latin America.

It is clear that all over the world, women are productive members of farm households. Their ability to command technology and training is often constrained by forces over which they have little control. Yet they continue to do the best they can with what they have. Hopefully, clearer and more accurate analysis of

their reality will lead to programmes that serve them better.

2.6 Resource Base

Of Kenya's 44.6 million hectares of land, only about 8.6 million hectares are medium to high potential agricultural land. About 60% or 5.2 million hectares are devoted to crop and milk production. Much of the rest is used for extensive grazing, for beef and stock production, or is taken up by national parks and forest reserves. Although perhaps 500,000 hectares of land could be brought into production under irrigation; drainage or flood control by and large, Kenya's agriculture will have to provide for both food security and export growth on its existing crop land and dairy land (Sandra Russo, 1989).

2.7 Agriculture's contribution to the economy

2.7.1 Contribution to employment and growth

Taking into account the size of the agricultural sector in the economy, its growth will remain the key factor in stimulating rapid growth and the attainment of higher incomes for the majority of the country's population who live in the rural areas. In order to ensure the attainment of this goal, it is of paramount importance that adequate budget provision is made available particularly for operations and maintenance.

The key to agricultural growth lies in increased land and labour productivity. For this to occur, farmers require suitable

technological packages supported by sound agricultural policies.

A large proportion of Kenya's labour force is based in the rural areas. According to the 1989 population census, out of the total labour force of 9.3 million people, 7.6 million, or about 82%, were based in rural areas whereas only 1.7 million were in urban areas. Available data show that small-scale agriculture absorbs the largest share of new additions to the labour force as well. Employment creation in the sector is expected to slow down in the future given the declining share of agriculture in Gross Domestic Product. Hence policies will need to be put in place to ensure sustainable employment creation both on and off farm.

In view of the difficulties faced in increasing the land area under agriculture, sustained agricultural output will come from more intensified production and rising productivity (Republic of Kenya, 2001).

It is expected that the highest level of employment in agriculture will come from increased productivity in the small-holder agricultural areas as a result of the impact of:

- (a) the incentive schemes to be implemented;
- (b) investment in the agricultural sector in research extension, roads, storage, development of small-scale irrigation schemes and valley-bottom reclamation, etc. A considerable number of jobs will also be created through expansion of the areas under

coffee, tea and horticulture (Republic of Kenya, 1994-96).

2.7.2 Contribution to foreign earnings and savings.

Historically, Kenya has depended largely on agricultural export earnings to meet the foreign exchange requirements for development programming and other activities.

Foreign exchange savings will result from increased domestic production of maize, wheat, rice, sugar, cotton, oil crops, milk and meat.

2.7.3 Contribution to food security

Food security defined as the access by each citizen at all times to an adequate level of food for normal life (Sessional paper No.1 1986) is an important component of food policy in Kenya. The biggest challenge will be to intensify cereal production so that output can keep pace with rapid population growth without large increase in the land devoted to cereals.

2.7.4 Contribution to Rural-urban development strategy.

Agricultural prosperity is a prerequisite in having a balance in rural and urban economic activities. As urbanization in the country continues, agriculture will be charged with greater responsibility in the supply of foodstuffs to the urban populations and raw materials to the agro-based industries (Republic of Kenya, 1994-96).

2.8 Rural development agriculture and rural activity

diversification

Although rural development is the sum of multi-goal, multi-strategy, inter-agency programmes aimed at increasing incomes, employment, social welfare, amenities, level of living and people's involvement, the goal of increasing the productivity of sedentary employment, in agriculture or rural business is extremely crucial. Increased productivity of farming can be seen as the precursor to other activity diversification and increased viability of rural non-farm employment (Mbit'hi, 1975).

The interrelationships or linkages between agriculture and industry in general, have been known for a long time. It is in this connection that some writers such as Rodney, while writing about the development of the indigenous African agriculture have written:

"That the single most important technological change underlying African agricultural development was the introduction of iron tools, notably the axe and the hoe replacing wooden and the stone tools" (Rodney, 1977).

Rodney goes further and says that, "It was on the basis of the iron tools (which were products of the manufacturing industry), that new skills were elaborated in agriculture and vice versa, as well as in other spheres of economic activities (Rodney, 1977)".

Thus industry's dependency on agriculture especially that section of industry that handle the manufacturing of capital goods for use in agriculture, for example machines, tools, implements, other farm inputs like agricultural chemicals as well as animal feeds, is not only obvious but historical too. (Mbirhi, 1975).

Other important industrial sectors which have very strong linkages with agriculture are also well known, for example, agricultural produce, retail and whole sale marketing industries and others, all of which have now come to be grouped together under various names like agro-industrial complexes or agribusinesses.

Whereas the above shows some of the linkages between agriculture and industry at the non-human level, one can also show other linkages between the two at the human level. In the developing or under developing countries, there appears to exist a very close connection between the farmer or the agriculturalist and the industrialist.

2.9 Constraints to agricultural growth

Since 1980, Kenya has not experienced stable growth in the agricultural sector. Indeed, the sector recorded negative growth rates for three consecutive years, between 1991 and 1993. Some of the major constraints faced by the sector include:-

inadequate rural infrastructure including poor roads and transport system;

high dependence on rainfed agriculture;

inadequate input application;

inaccessible to credit, for small holder farmers and especially women;

limited application of agricultural research findings because of inadequate extension activities and support staff;

low budgetary provision for the agricultural sector;

cultural constraints, as related to gender discrimination in the ownership, transfer and usage of land with respect to perceived ethnic exclusion, and traditional inheritance practices leading to land fragmentation; and

poor coordination of major actors in the sector for example infrastructure development, water, lands and settlements, and poor coordination with Ministry of Agriculture, Livestock Development and Marketing (MALDM).

2.10 Agricultural Sector Reform Policies

Throughout the 1980s and early 1990s, expenditure on agriculture as a percentage of total government expenditure has declined. Between 1980, and 1987, the expenditure was 8%, falling to 5.2% between 1993 and 1995. The decline in government expenditure on the sector is reflected in both recurrent and development votes. To enable this sector to grow at a target rate of 4.4% annually, there is need to, increase resource allocation to agriculture.

In addition, the resources allocated to agriculture must be used more efficiently. This will require improved management in the sector (Republic of Kenya, 2001).

2.11 Women in rural development.

Women's economic roles represent a cluster of possible activities, not all of which fall within the agricultural sector. For it is clear that both as producers and as sellers women's contribution to the rural economy have been poorly understood to date. Debate over policy alternatives has tended either to take these contributions for granted or to treat women's activities as peripheral to the process of introducing technological innovations and raising productivity (Pala, et al., 1975).

For the most part, it is women who retain control of granaries and food stores and who allocate and dispose off the amounts produced by the household. Basic needs (such as the purchase of kerosene, salt, soap, etc) in households which have no other access to cash may induce a woman to sell off portions of her family's food supply even against her own better judgement. Many husbands expect their wives to keep the households stocked with goods, but they do not always provide the cash for their purchase.

2.12 The role of women in Agriculture

Data on the role of women in agriculture in Africa is fragmented, but the International Labour Organization estimates that in Africa 78% of females are economically active in agriculture compared to only 64% of males (Buvinic and Lycette, 1988). In Zambia, a random sample of farm households in three provinces indicated that during the farming season women contributed 53% of total hours of labour in agriculture to men's 47% (Due and Mudenda, 1984 as cited in Rothschild, 1985). Studies on Malawi have reported that 50 to 70% of all agricultural work was done by women and 69% of farmers were female (Kydd and Christiansen, 1982; Clark, 1975). In Guinea, women in most regions perform 40 to 50% of agricultural work (Herzog, 1988) and an estimated 60% of Gambian women are farmers (World Bank, 1988). In Burkina Faso, women are responsible for 49% of the labour in crop production. (Tinker, 1981 cited in Vonn Braun and Webb, 1987).

2.13 Official underestimate of female agricultural labour

Standard data sources have been criticized for gender estimating female workers especially those who are unpaid and for undervaluing the worth of female produced goods and services (Mueller, 1985). In Malawi for example, official figures showed that only 12% of women were economically active in agriculture in 1972; in 1977 this was revised to 52% (Ewasi, 1980; cited in Jiggins, 1986).

Specifically women now constitute majority of small holder farmers, provide most of the labour, and manage many farms on a daily basis. Many women head households. In Kenya for example 61% of rural women depend on farming as their main occupation compared to only 24% of men (Saito, et al., 1990).

As pressure on the land increases and efforts to improve agricultural productivity intensify, it will be even more important to ensure that women own and have control over adequate land. It has been argued that unless legal measures and government policies designed to meet women's need for land security are put in place, Kenyan women's ability to sustain food production may be compromised (Davion, 1988). Women's legal rights to land not only in Kenya, but also throughout Africa, must be expanded and secured so that they can be implemented in practice.

Security of tenure and "land ownership rights" are more important to women than the quantity of land they cultivate. Because small holder farming is labour-intensive and because of acute seasonal labour shortages, more land, even if available, would not be a solution. Hence, small holders must gain access to more inputs and better technology so that the return to the land they have is increased-in short, their productivity is raised.

Women are so important in African agriculture that initiatives to raise the sectors productivity cannot afford to ignore them. Women do most work on the farm and have become the key decision-makers on matters affecting farming practices. Yet women's access to agricultural inputs and support services is not commensurate with their farming responsibilities.

A recognition of women's work as essential to subsistence, and as increasingly critical factor in agricultural production, is almost completely lacking from the work of development planners. They suffer the myopia of labelling women's subsistence work 'domestic' and therefore to be dismissed as trivial. Brain (1976) describes a fairly typical case of misunderstanding among Tanzanian officials and overseas aid 'experts' with regard to the constraints on women's energy and time; they could not see why the women were unable to carry out an eight hour working day in the fields, and assumed that demands on women's labour input could be made almost without any limit'.

Many attempts to increase agricultural production rely on new or intensified labour inputs for the tasks performed partly or wholly by women. For example, the new Japanese method of rice production, which is being introduced to increase output in many Asian and other countries, uses much more labour than current methods. This is especially the case in planting and transplanting seedlings and in weeding; and women play a vital

part in these activities. A similar trend is evident in the introduction of High Yielding Varieties (HYV) for various crops. The introduction of HYVs in India, in the so-called 'green revolution', has probably exacerbated the imbalance in demand for female and male labour, especially in weeding-a major job for women. In terms of casual labour, HYVs increase the need for women's labour from 53 days per acre to 63, while that for men fell slightly from 19 to 18. In addition, HYVs of rice require more work at various stages after the harvest, which adds significantly to women's work load. In North Indian area, the 'green revolution' expanded women's work in agriculture particularly with the increased number of crops grown per year (De Wilde, 1967).

Mechanization of men's work only, can cause innumerable problems in the absence of comparable labour-saving for women's tasks. De Wilde (1967) notes that it increases hostility between women and men, and raises general tensions within the family. The use of tractors for men's work can be seen in many cases to be justified, not only by the economics of agricultural production, but as an instrument in men's attempt to reduce their commitment to agriculture. De Wilde (1967) mentions that in much of Africa, men tend to use any implements or machinery, regardless of cost, to achieve the same output targets with less labour input from them. He cites a case in Uganda where a tractor-ploughing in service was used to reduce men's work, with almost no evidence

that there was any increase in production as a result.

As Wills (1968) points out, the extra work imposed on women by planned innovations in agriculture is not relieved by any labour-saving inputs for many of the operations:

Often the only type of innovations possible for the women farmers are those involving the use of (their own) additional labour, and not those involving the reduction of labour due to mechanization.

Lele (1975) comments that in Tanzania, tractors are often used as an inducement to men to form Ujamaa Villages, even though the machines are of no great value to the production process. The mechanization of men's work thus makes no sense in removing a labour bottleneck, since it is the women who are overworked. It is their weeding and other tasks which constitute the immediate constraint on production. Men do not, however, abandon their claims to control the operation; in fact the access to additional inputs like tractors tends to increase their control of the whole family's labour.

One major problem is that, where labour-saving technologies are introduced which apply to women's work, they have been handed over to male control. Small implements such as presses, grinders or cutters have been given or sold on credit to men by

development agencies, even where the work for which they are a substitute is traditionally done by women. For example, corn grinders have been made available in Kenya but women are not taught to operate them.

Control of women's work is concentrated more and more in the hands of a few men. At the very least, the impact of innovations on women's and men's work respectively needs to be carefully considered in the planning process. At the moment, it seems that planners are failing to take this into account, with serious consequences for the distribution of wealth by class as well as gender.

In the development process, the division of labour is increasingly a matter of men abandoning their traditional obligations and women being forced to take over their work in the struggle for subsistence. Control of the family is becoming concentrated in the hands of men because they have so much more time, mobility, education, access to land and other resources, particularly the most important of all: cash. Increasingly, there are indications that as families become involved in development, the men are showing contempt for women and a more directly hostile and oppressive attitude.

When asked why wheat should not be ground in the flour mill to spare the women from the arduous job of grinding wheat, Buro's

son replied, "It costs money" When he was told that a family owning a big farm could afford it, he replied half in jest and half in earnest: "This keeps them physically fit; moreover an idle brain will be the devil's workshop". This type of reply was received from most of the men interviewed' (Palmer, 19675)

The attitude is that if this one goes, another can always be got'. Both observations come from the heart of the 'green revolution' area of North India, from the men who have benefitted the most from the process of development.

Much of the agricultural work done by women lies outside the established cash economy, and has been overlooked by agricultural planners. In some cases, this has meant exclusion from development programmes. In others it has meant that women have been left worse off than before. Furthermore, many agricultural projects have been less successful than they would have been, had women been included.

The amount and quantity of land and the legal and other conditions under which it is held and passed on from one generation to another greatly affect production. Secure land tenure opens the way to increased short-and long term investment, contributes to conservation of the soil and provides optimum conditions for maximizing production.

Women like men need education and resources to add value to their raw labour (U.N., 1983). Studies have shown that women tend to be disproportionately represented among the poor. This fact was also supported by Due et al. (1987) who showed that de jure female headed households are poor and have less productive resources than joint headed households. In Tanzania and Zambia, Due et al. (1986) found that de jure female headed households had smaller household size on average than male headed households. This meant fewer persons to assist with farm work. Given the small labour force, female headed households planted smaller acreages of crops and therefore had less total production for consumption or sale with less income, they had fewer resources for hiring labour or oxen and plough or for purchasing fertilizers. In both countries credit was found to be less available to females. Female headed households were also found to choose a different mix of crops, planting a higher percentage of their acreage to food crops and allocating some available labour to higher yielding activities like craft-making and beer brewing. Average crop sales income per household contact farmer in Tanzania was 19% and 18% in Zambia respectively (Due, et al., 1986). In countries like Kenya it has been shown that the poorer the household the more likely it is to be headed by a woman and the trend is toward poor female headed households (World Bank, 1989). Also findings from the Integrated rural surveys in Kenya had shown a significant difference between female headed households and their male

counterparts. The mean annual income in male headed households was 19% greater than in female headed households (Horenstein, 1990). Overall, female headed households have fewer productive assets: they have less labour, depend more on farming but are less involved with cash crops. Female headed households also have limited access to off-farm income earning opportunities (Horenstein, 1990).

phiri (1986) in a study of 100 male headed households and 100 female headed households in Malawi also supports the poor economic position of rural women. He found that female headed households had only 58% the cash income of male headed households but lacked finance, lands, skills and inputs for production.

Despite the disadvantaged positions, women have been shown to perform better than men generally given the same conditions. Mook (1976) in his study of the determinants of maize yield in Vihiga (Western Kenya), concluded that generally women are more competent than men as farm managers. This argument still holds even when women managers operate with lower levels of formal education and extension contact. Also the Integrated Rural development Project (IRDP) study on oxen, in the North western province of Zambia, (Loeffler, 1989), found that women owners cultivated slightly higher acreages (5.6 compared to 3.7) than men owners and that while charging the same fees, female owners

earned, on average, slightly more per season than male owners. This indicated that women have the capability of being better managers than men, given the means.

Geister et al. (1985) in their study of the needs of rural women in Northern province found that though theoretically land is available in Zambia, many women do not have the time, because of their commitment to clean land and prepare it in order to expand production. Female headed households have lower yields and are less integrated in cash crop production.

Chileya (1990) states that women in female headed households were more disadvantaged than women who were married. Studies by Himonga et al. (1988) indicate the possibility of widows and other women in female headed households being better off than married women in as far as land ownership is concerned.

Himonga et al. (1988) in their study of women's access to agricultural land in Zambia revealed that cultural factors, such as marital status were important in land allocation to women.

As documented by a number of studies (Phiri, 1986; Due and Magayane, 1990; Chileya, 1990; Geister et al., 1985), women and female headed households plant small hectarages and hence their total production is lower with a higher percentage needed for consumption. This supports the theory that land ownership by

women is one of the most important factors affecting their total production and productivity. Mutimba (1982) argues that the problem is not only the amount of land use and quality of land which constrain women's agricultural production. Land pressures due to increased population have led to reduced women's ownership to land. In addition, due to small size of women's holdings, good cropping methods, such as crop rotation, are difficult to follow resulting in low productivity.

In many countries, the pattern of land tenure is culturally determined; right to use land being assigned by and at the will of the tribal chief or village authority, with the male family member making the decision on land use. In these circumstances women's access to land is doubly at the discretion of males. Such dependence on men is a particular handicap, for women's agricultural efforts.

Feder et al. (1988) showed that ownership security had an effect on farm productivity and the use of inputs. In their study in Thailand, they performed a regression analysis of output and use of inputs per unit of land to find whether levels of output and use of inputs by titled farmers differed significantly from those of untitled farmers. The empirical analysis revealed that legal security of ownership significantly enhances productivity.

In their studies, Kosura (1990) and others did not show any relationship between the type of tenure security and productivity. As more than half of the labour in these study areas was of women, it can be said that holding other things constant the type of tenure security on the land women operate will have no effect on their productivity. The total area of land under their operation is however expected to affect total production as well as productivity.

In the same study, Kosura (1990) found that while plot size was negatively related to yield for all cropping patterns, showing diminishing returns, farm size was positively related to yields implying economies of scale. It is hence suggested that in terms of access to land, what affects women's agricultural production and productivity more is area of land they cultivate rather than the type of security on that land or even the mode of acquisition of that land. This fact is supported by a study by Lee and Stewart (1983) on land ownership and the adoption of minimum tillage. Using a logit model with 7,649 cultivated cropland observations across the United States, they indicated that small operating size poses more of an obstacle to minimum tillage adoption than does the type of land ownership.

A regression analysis done by Due et al. (1990) on the 1986 Zambian data set of 124 farm households revealed that total acreage appeared to be the most important variable in accounting

for the variability in total production. The multiple regression involved total crop production as a dependent variable and 12 independent variables among which were total hectarage, available labour, years of education, number of extension visits, farm operating costs and ox-pairs owned. Total hectarage was found to be highly significant (at 99.9%) with an incremental change value of K£157. Farm operating costs constituted the next important factor affecting total crop production followed by available labour, number of extension visits and years of education. Other studies of small farms in Tanzania (Due et al., 1987) have also found the same variables: total hectarage, total farm operating costs and the number of extension visits to significantly affect total volume of farm production. As documented by a number of studies (Phiri, 1986; Due and Magayane, 1990; Chileya, 1990; Geister, et al., 1985), women and female headed households plant small hectarage and hence their total production is lower with a higher percentage needed for consumption. This supports the theory that, accessibility to land by women is one of the factors affecting their total production and productivity.

2.14 Women's rights to land.

The laws of inheritance, ownership and control of land tend to discriminate against women. Rights to agricultural land favour men on the assumption that the man is always head of the family (Hurlich, 1986). Due (1991) comments that women have no secure

rights to land under customary law.

The expansion of cash crop production has encouraged privatization of land hence causing more women to lose their traditional land rights and become more and more dependent on their husbands (Phiri, 1989).

Family settlement schemes have further marginalised women as land registration is mainly done in the names of male heads of households, with no recognition given to women's traditional rights to land.

As quoted from Mwambazi (1995), the issues raised above show that despite the big role played by women in both food production and food security as well as in cash crop production, they do not have enough control over land. This could have a direct bearing on women's agricultural production and productivity as well as the nation's agricultural development as a whole.

2.15 Inheritance

Inheritance is another practice which has been said to influence property ownership by women in modern society (Nyabundi, 1987; Goody, 1976). In the African society, no individual inherited property. The true heir of property was the family. Land holding was passed down from father to son. All sons received nearly

equal share in the father's legacy of land and cattle (Wagner, 1939). The first son was given preference in claiming for cattle while the last son inherited the mother's house and took care of the mother.

Although women can now own land through registration and ownership of title deeds, this individualised land tenure may lead to a situation where women became marginalised in relation to land. This is because the Registered Land Act does not recognize customary rights of use by women. Land ownership among women is not extensive, particularly in rural areas. There are those women who strongly believe that they are not supposed to own land. The confusion is mainly because, it is not clear what Kenyan women's legal position is, regarding property rights particularly land. Few women know their rights according to the law especially in the rural areas.

In the Nandi community, Private property had two aspects: while it remained collective as the family groups individual share, it was already private by virtue of selective inheritance as well as occupancy rights vested in the household's head (inheritance excluded women and was more than often in favour of the eldest son).

In the Nandi community women do not inherit land but acquire rights of land use through marriage. Women who fail to marry,

are separated, or divorced are without rights to land. They may secure temporary rights of use on a portion of their fathers land but ultimately they are at the mercy of the legitimate claimants.

It should be noted that prior to marriage, an unmarried woman does not have an allocation of land from the father's patrilineage: she merely has use rights to land. This argument is also supported by Pala (1975) in his study of the Joluo community of Kenya.

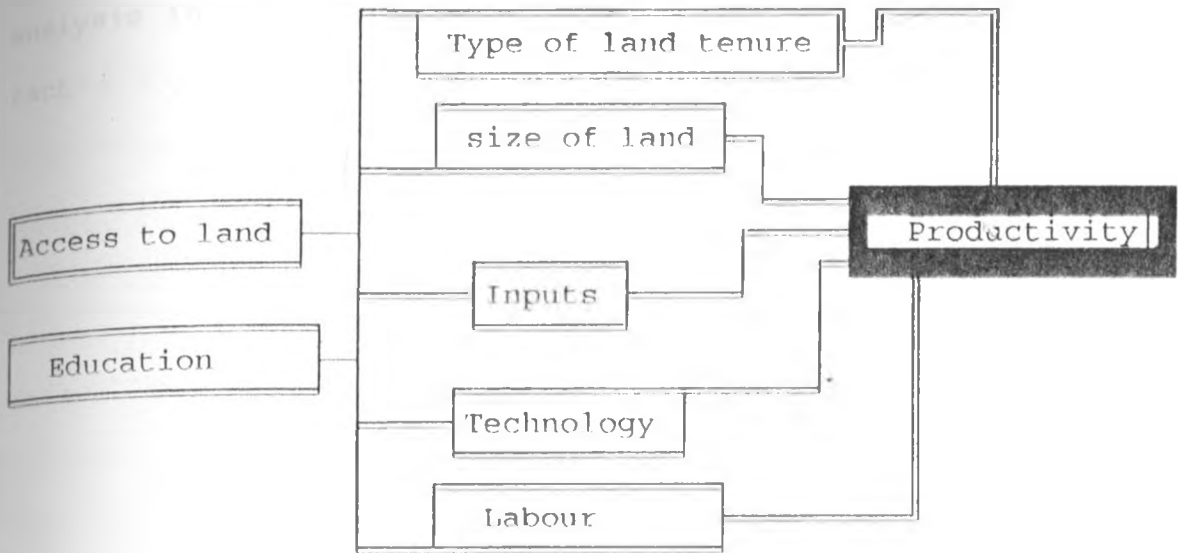
2.16 Conceptual framework

As cited earlier, Kosura (1990) found that plot size was negatively related to yields for all cropping patterns, showing diminishing returns. This is especially true where the increase in plot size is not matched with increase in other input use. However, increased total area of the farm is expected to make optimum use of the available purchased inputs, labour and implements and hence increase women's productivity, implying economies of scale. This is a strong argument for the fact that limited accessibility to land by women could be the cause of their low agricultural production and hence low income. In order to determine whether accessibility to land has a significant effect on women's productivity, the relative importance of different factors influencing agricultural productivity will be determined.

2.17 Agricultural productivity model

socio-cultural factors

Technical factors



Source: Author's perception.

The diagram illustrates the factors which contribute to increased agricultural productivity. It distinguishes between two levels. The first level, is the primary level, that is the socio-cultural base. Within the socio-cultural level is the concept of access to land and education. The second level is the secondary level. How one uses the land, land tenure system, technology and inputs.

This study will compare the productivity of women with access to more land and those with access to less land in order to ascertain whether increased access to land is necessary for women's increased productivity.

This study hypothesises that women of different categories and in different situations face different constraints against the increase of their agricultural production and productivity. The analysis in this study is expected to prove or disapprove this fact.

CHAPTER THREE: BACKGROUND TO THE STUDY AREA

3.1 Study area

There are three locations in Kipkaren Division; these are, Kipkaren, Chepkemel and Kapserton. Trying to obtain and study a sample in each location would have been expensive and time consuming, therefore one location was randomly selected for sampling. Kipkaren centre which is the main shopping centre of the three locations is within the location where the study was undertaken. Most of the businesses take place within this centre. This location has good accessibility to the nearest town Eldoret. The Tulon-Kilibwoni murram road connects the three locations to Eldoret town, which is the main town to the residents of Kipkaren Division.

3.2 Location and size

The area of study is Kipkaren Division in Nandi District. Nandi District is one of the smallest districts in the rift valley province, occupying an area of 2,839 Sq. Km. with a population density of 179 persons per sq. km.

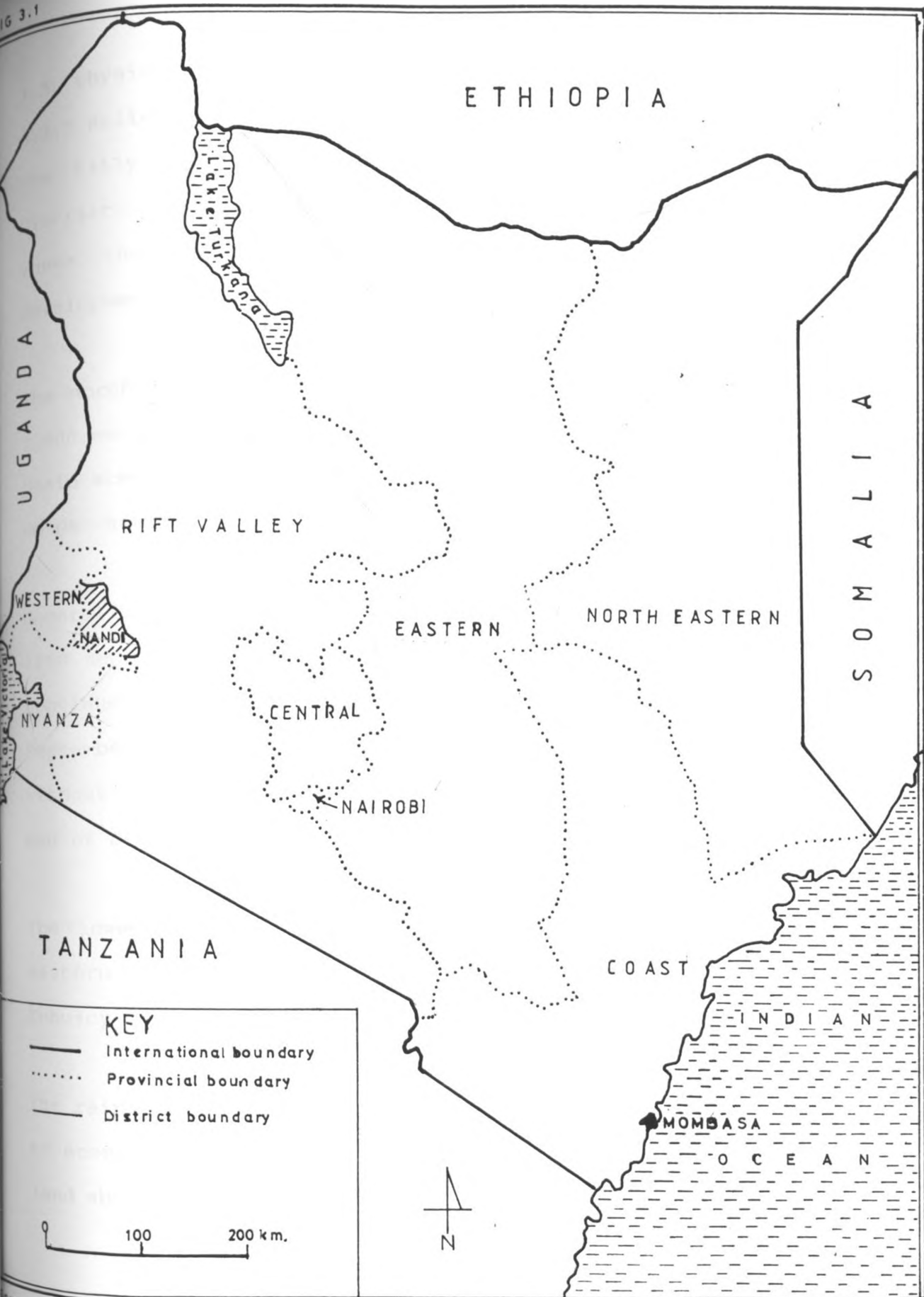
The district is bordered by Kakamega District to the west; Uasin Gishu District to the north and east, Kericho District to the south-east corner, and Kisumu District to the south.

Geographically, the unique jug-shaped structure of Nandi District is bound by the equator to the south and extends

northwards to latitude 0 34' to the north. The Western boundary extends to longitude 34° 45' east, while the eastern, boundary reaches longitude 35° 25' to the east.

Nandi District is located on the equator in the high potential western edge of the Great Rift Valley. Figure 3.1 shows the location of the district in the national context.

FIG 3.1



KEY

- International boundary
- Provincial boundary
- District boundary

0 100 200 km.



3.3. Physical background and Resource Base

3.3.1 Relief and Topography

The hilly and undulating topographical features of Nandi District coincide with a spatial distribution of ecological zones that define the agricultural and overall economic development potential of the area.

The northern parts receive rainfall ranging from 1,300 mm to 1,600 mm per annum. The southern half is affected by the lake basin atmospheric conditions receiving rainfall as high as 2000 mm per annum.

Generally the district receives an average rainfall of about 1200 mm per annum. The long rains start in early March and continues up to the end of June. The short rains start in mid September and end in November. However, there is no single month without some rainfall. The dry spell is usually experienced from end of December to mid March.

The lowest rainfall is experienced in the eastern and north eastern parts of the district. The highest is recorded in the Kobujoy-Tindinyo area in Aldai Division.

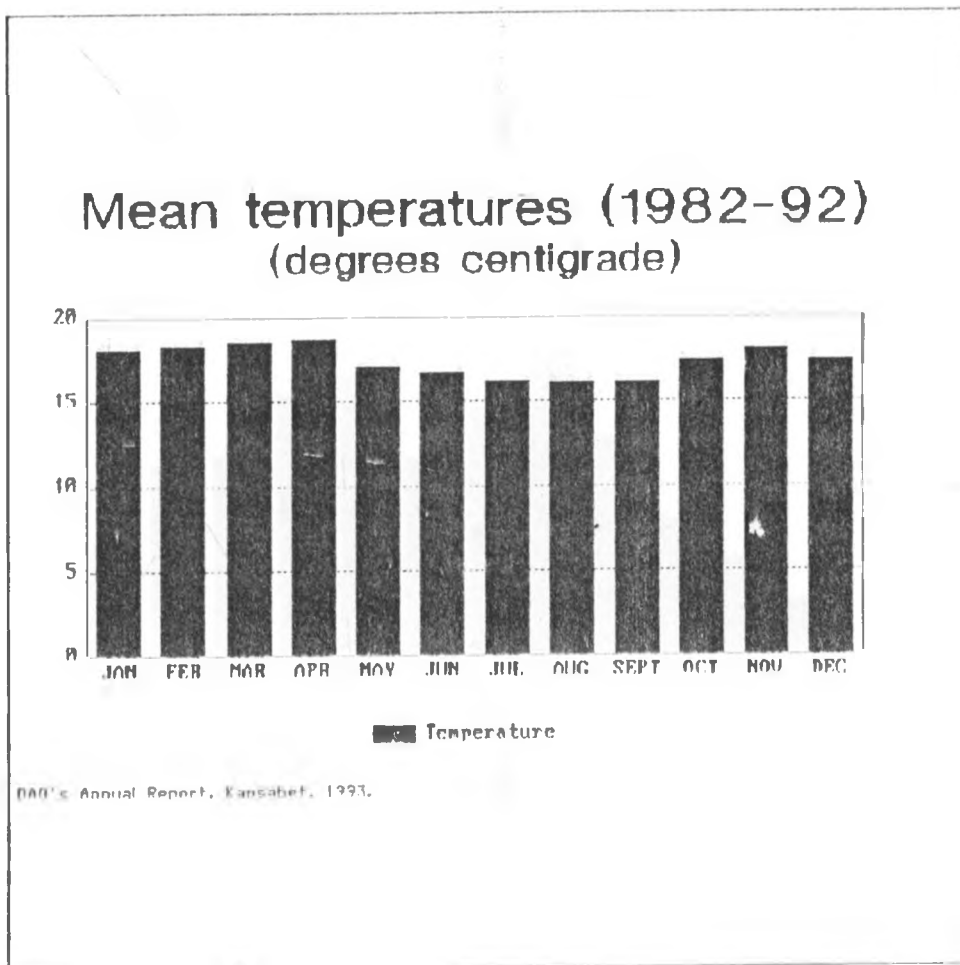
The rainfall distribution and intensity has direct relationship to economic activities in the district. The areas with 1500 mm (and above) rainfall per annum form the extended Agro-ecological

zone for current and potential tea cultivation (LH1 and UM1). The relatively drier areas to the east and north east which receive an average rainfall of 1200 mm per annum are suitable for maize growing. Kipkaren Division falls within these areas. The division has two rainy seasons. The first rainy season starts in early March up to the end of June. The second rainy season starts in mid September up to the end of November. Dairy activity is carried out throughout the entire district. Due to the reliability of the rainfall in the entire district, Nandi District has the potential to produce various agricultural crops ranging from tree crops, horticultural crops, pyrethrum, cereals and fruit trees.

Most parts of the district experience mean temperatures between 18°C-22°C during the rainy season, but the portion of the district below Nyando escarpment at 1,300 m above sea level receives temperatures as high as 26°C. However, during the dry months of December and January the temperatures are as high as 23°C and during the cold spell of July and August the high temperatures are as low as 14°C.

Figure 3.2 shows the mean temperatures in the Division.

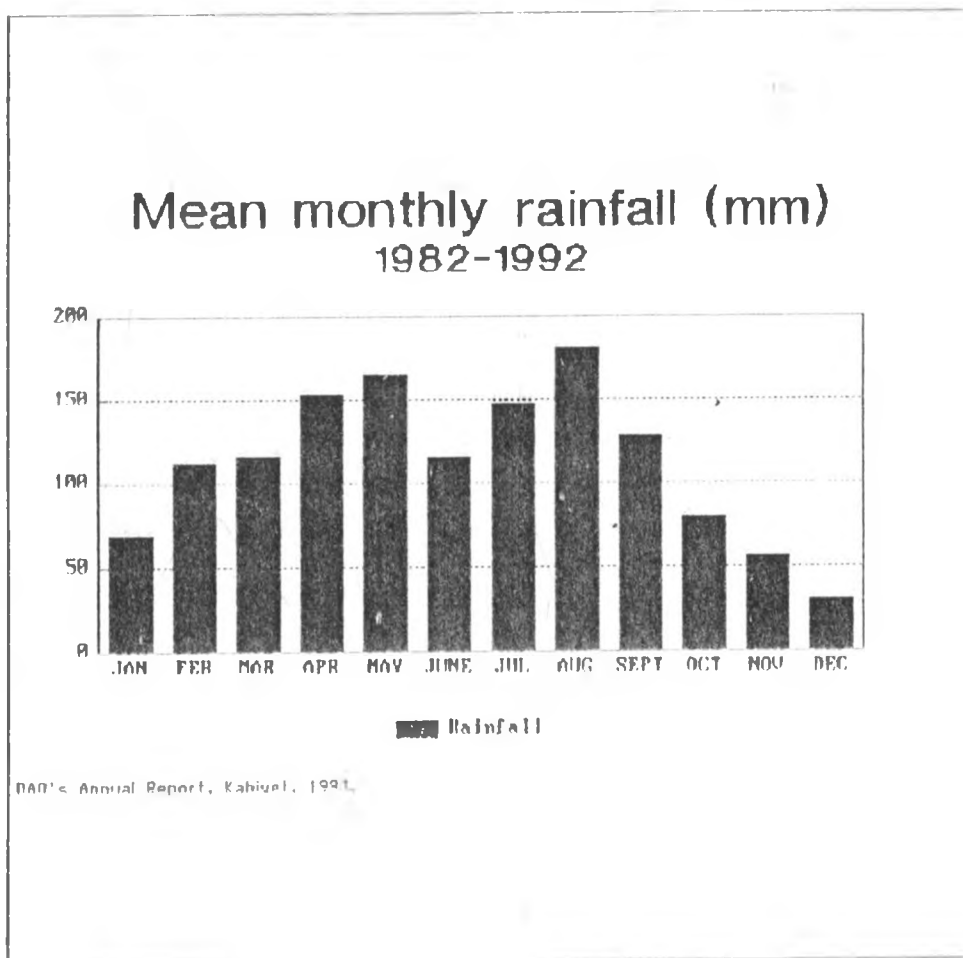
Figure 3.2 Mean monthly temperatures in Kipkaren Division



Source: Field survey 1997, based on Kabiyet station.

The temperatures are moderate in this division and thus favours good agricultural production.

Figure 3.3 Mean monthly rainfall in Kipkaren Division

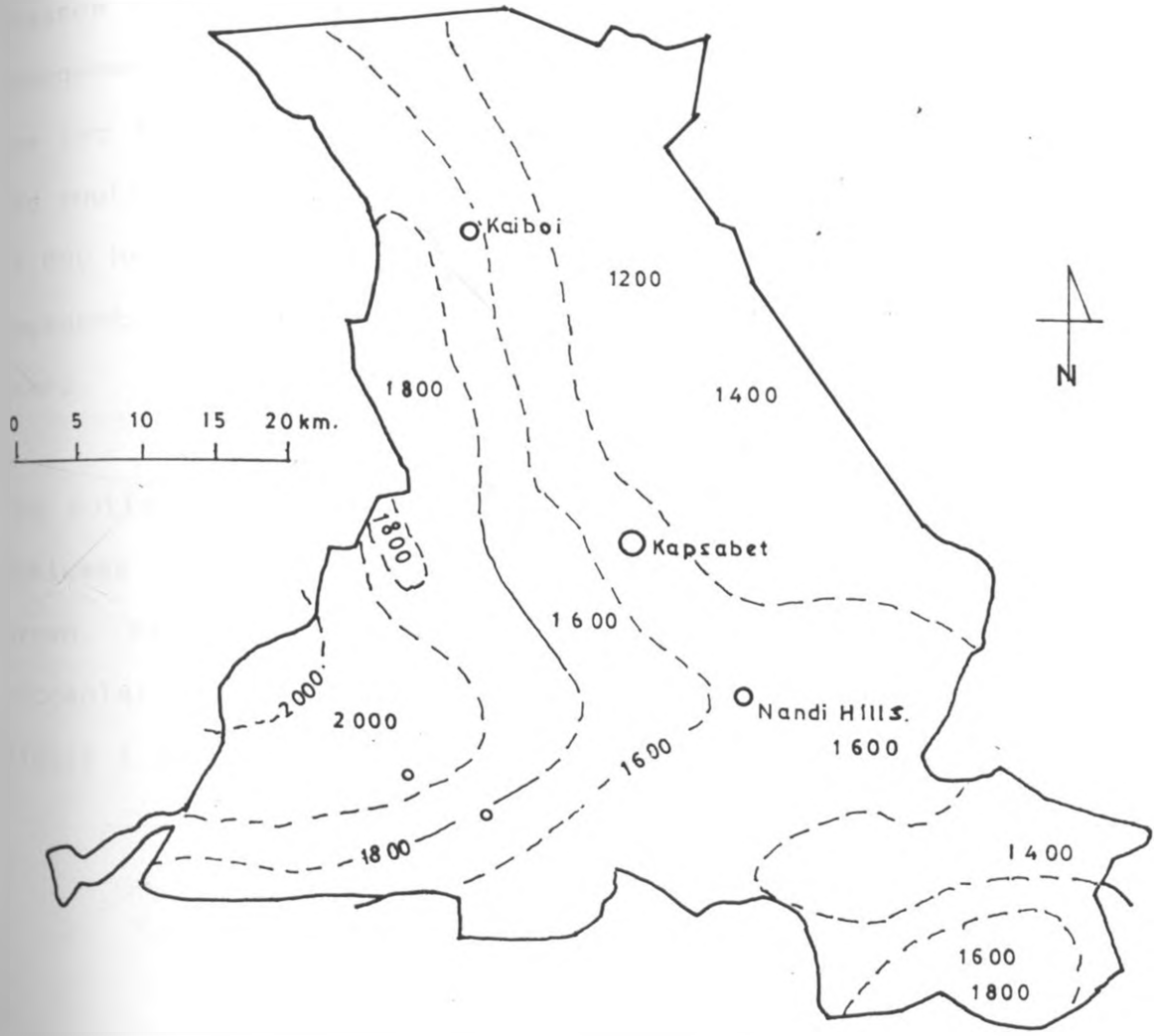


Source: Field survey 1997, based on Kabiwet station.

The rains are moderate, good for the cultivation of a variety of crops. Figure 3.4 shows the distribution of rainfall in the district.

AVERAGE ANNUAL RAINFALL IN MM.

FIG 3.4



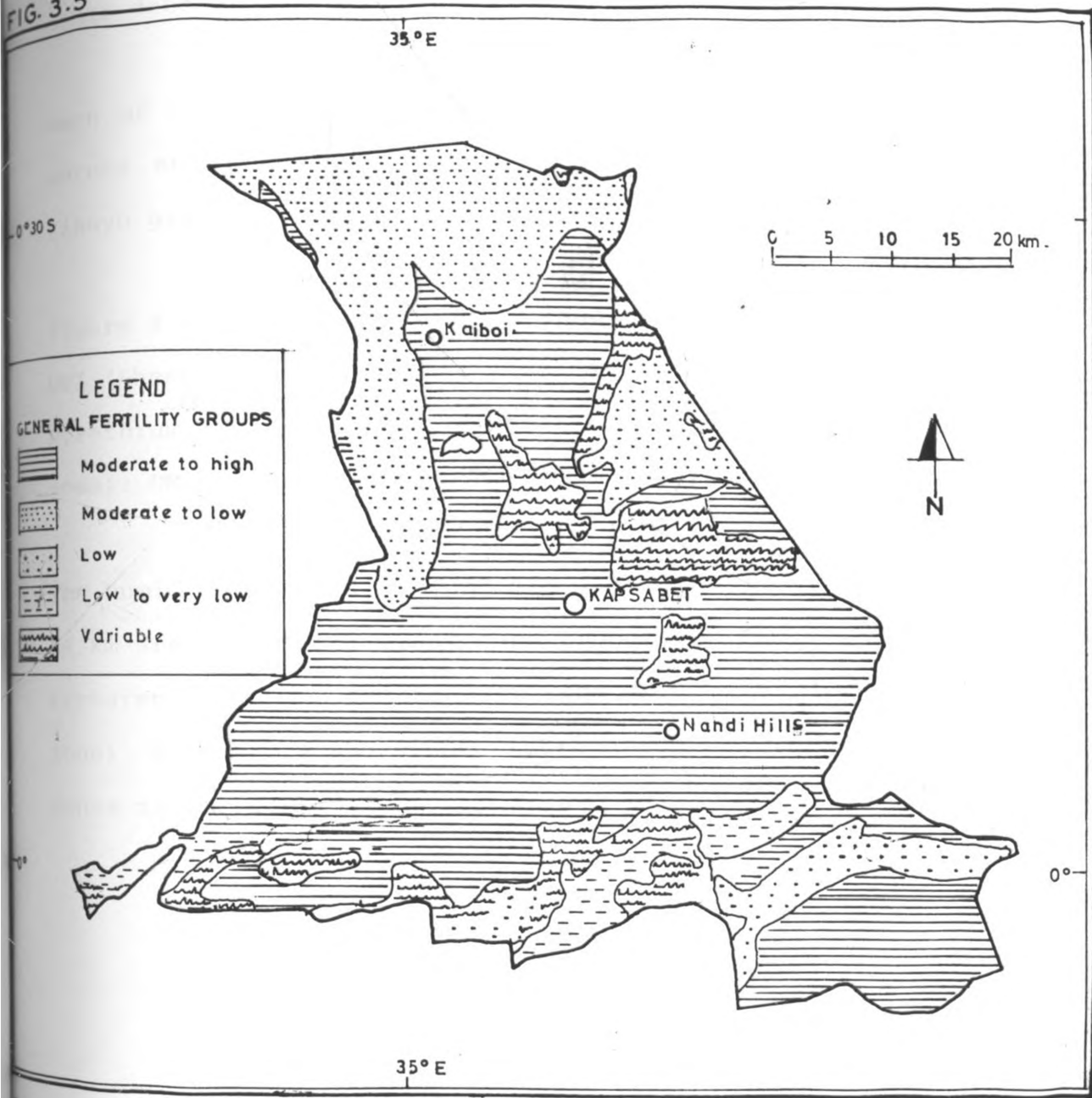
3.3.2 Soils and Vegetation.

The soils are well drained dark red friable clays with deep areas and dark red friable clays on the more sloping land (Ministry of lands and settlement, 1970 pp. 26-27). The vegetation is classified as wooded grassland with indigenous grasses of the star grass-and Kikuyu types which, with good management, provide productive pasture for dairy stock. There are two forests in Nandi District, the north Nandi forest and the south Nandi forest, occupying a total area of approximately 45,000 hectares. The area between the Kapsabet-Eldoret and the Kapsabet-lessos road has poor drainage and contains the Tulon swamp.

The soils in Kipkaren Division are developed on hornblende gneisses. They are well drained, extremely deep, dark reddish brown, friable clay, with thick acid humid topsoil (humid nitosols), good for a variety of crops and livestock keeping. Figure 3.5 shows the distribution of the soils in the district.

SOIL FERTILITY DISTRIBUTION IN NANDI

FIG. 3.5



Source: Farm management handbook 1983.

3.3.3 Agro-Ecological zones.

The altitude and rainfall are the main determinants of the agriculture activity in any given zone of the district. The other determinants include the soils and topography.

Much of the district consists of forests, derived grasslands, shrubs and scrubland. The natural grassland consists of the Kikuyu grass species suited for cattle grazing.

Figure 3.6 shows the following land use patterns:-

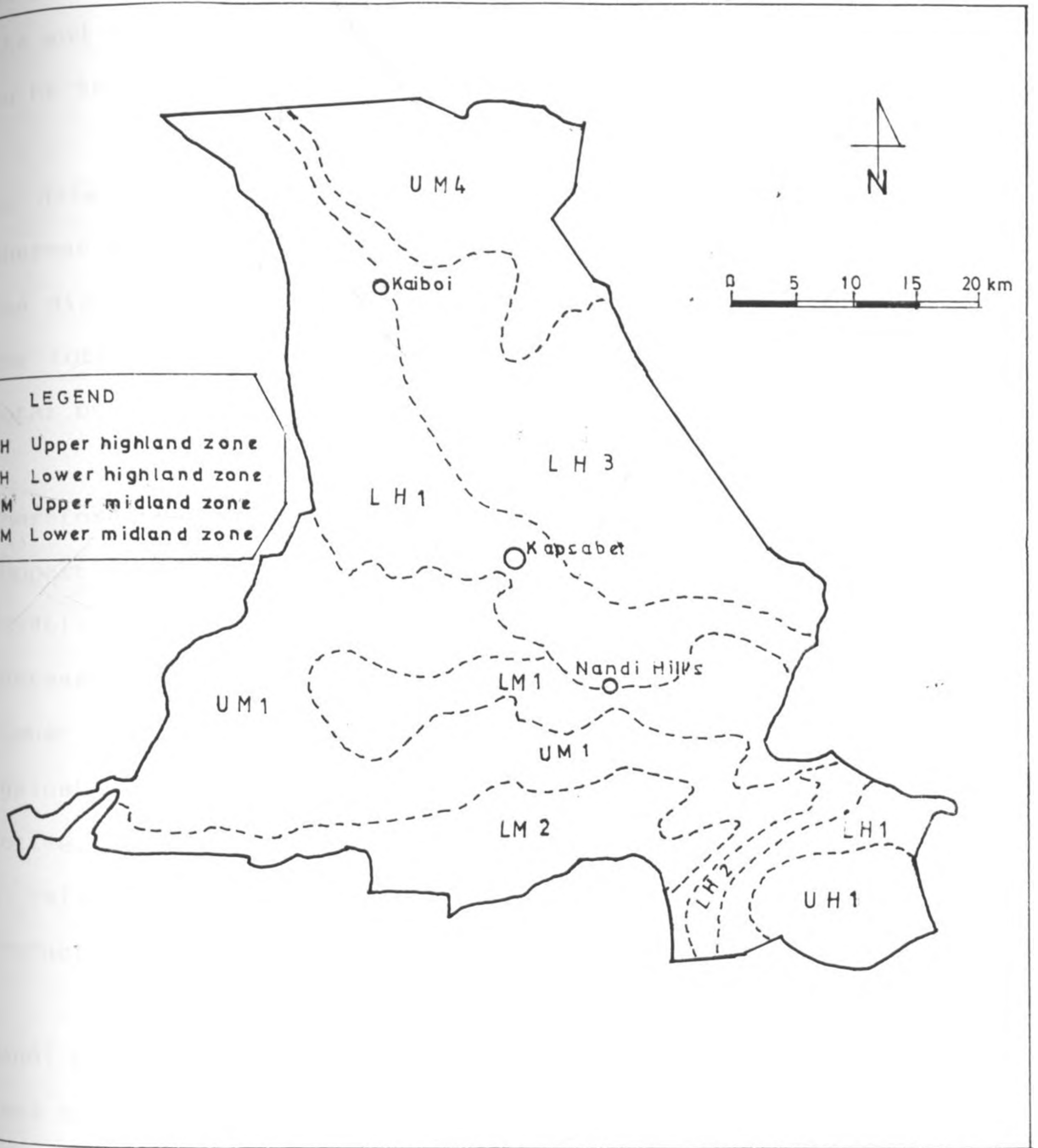
UHI (Sheep\dairy zone): LH1 (Tea/dairy zone): LH2 (WHEAT-maize-Pyrethrum zone): LH3 (Maize Wheat-Barley zone): UM1 (Tea-coffee zone): UM2 (Coffee zone): UM3 (Marginal\Sunflower Maize zone)

The humid lower midlands (at the forest of the scarp) of about 56.Km area focus for Sugar cane production and expansion.

Kipkaren Division falls under the UM4 zone (Sunflower-Maize zone). Figure 3.6 shows the distribution of the agro-ecological zones in the District.

AGRO-ECOLOGICAL ZONES

3.6



3.4 Population size

The population of Nandi District was 298,646 during the 1989 population census. In 1993, the population was estimated at 507,208 people with an estimated annual growth rate of 4%. At the end of the plan period (1996), the population was projected to be 568,086 at an annual growth rate of 3.9%

To date, the district's young population (0-14) is 265,509 whereas that of those aged (59+) is 19,346 people. In essence the districts population of dependants is 285,255 compared to the total population of 507,208 people. This forms 56.2% of total population.

Therefore the economically active population (15-59) is 221,863 supporting 285,255 dependants. At the end of the plan period (1996), the young population was projected to be 297,897, whereas that of the aged was projected at 21,620 people. The number of dependants was projected to have increased to 319,577 against a population of 268,126 of those who are economically active. It is therefore imperative to note that the figures show a relatively higher dependency burden on those who are productive.

Nandi District has a total population of 507,208 while the total land area in sq.km. is 2,839 hence the population density being 179 persons per sq.km.

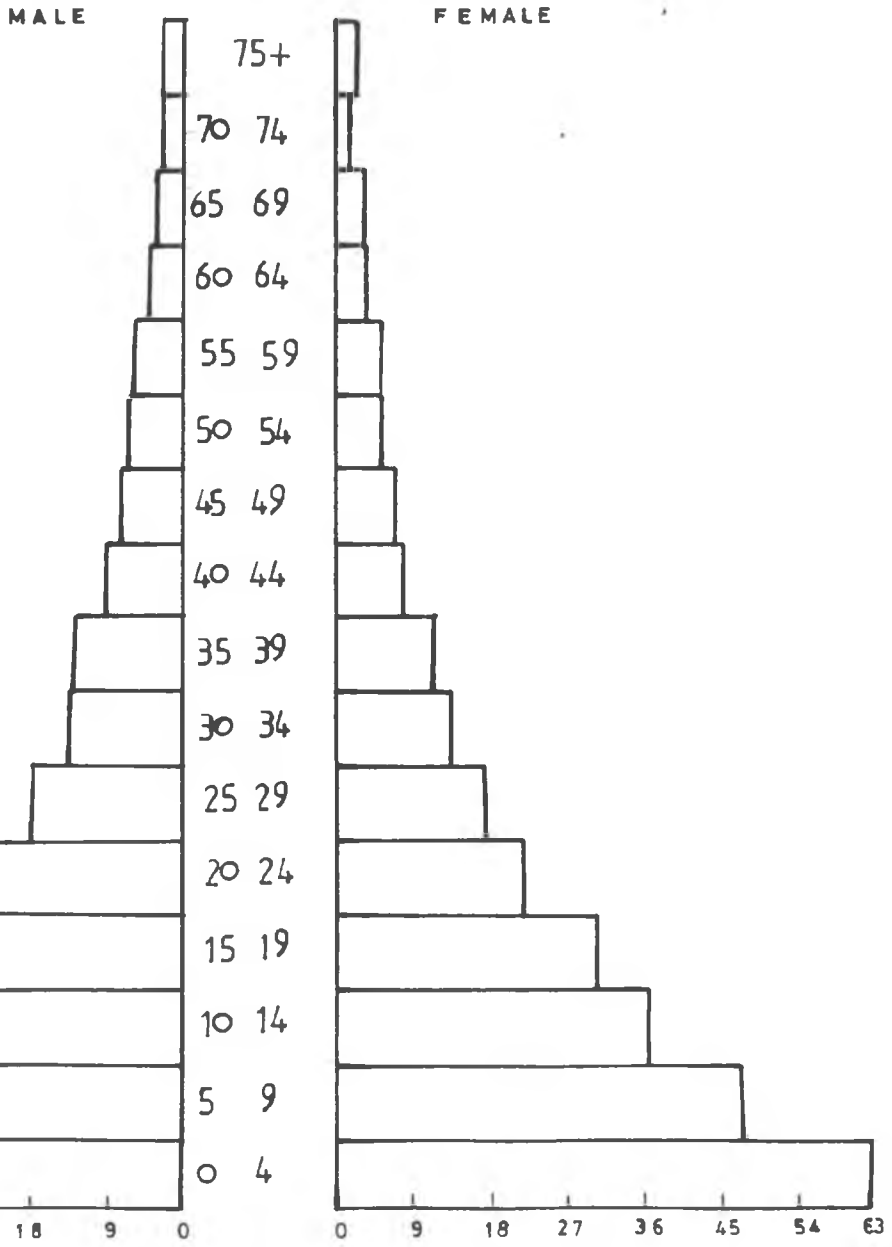
Table 3.1 Populations according to Divisions in Nandi District.

Ward	Male	Female	Total
anbiyer	8548	8418	16966
Kipkaren	6271	6338	12609
Selmokwo	7719	8098	15817
Chepterwai	5989	6101	12090
Kurgung	4527	4520	9047
Kangalo	6479	6628	13107
Poelral	5738	5689	11427
Mutwot	3563	3455	7018
Total	48810	49259	98079
Kapsabet	Male	Female	Total
Kaptel	8827	8873	17700
Chemundu	16670	16642	33312
Kaptumo North	7828	7554	15382
Kapkangani	19098	19934	39032
Total	52423	530903	105426
Aldai	Male	Female	Total
Kaptumo South	6020	6042	12062
Chemase	3107	2987	6094
Maraba	11957	11972	23929
Kemeloi	12026	12902	24928
Terik	6684	7097	13781
Total	39794	41000	80794
Kilibwoni	Male	Female	Total
Olessos	8355	8169	16524
Kaplamai	8516	8504	17020
Kilibwoni	5927	5927	11924
Total	22798	22670	45468
Tindiret	Male	Female	Total
Nandi hills	11627	10092	21719
Chebarus	8734	7359	16093
Hogobich	11216	8827	20043
Songer	6210	6104	12314
Tindiret	10244	9853	20097
Miteital	6757	6823	13580
Total	54788	49058	103846

Source: Kenya population census report, 1989.

Kipkaren Division falls in the former Mosop Division. The population of Kipkaren Division is 12609 with a female population of 6271 and a male population of 6338. The population ratio is 1:1. This means that there is less outmigration in this area and thus more pressure on land. Kipkaren Division occupies an area of 96 sq. Km. Figure 3.7 shows the population structure of the District.

POPULATION STRUCTURE OF NANDI DISTRICT



ABSOLUTE POPULATION IN 000s

3.4.1 Age Dependence

Age dependence ratios examines the size of the population of the producers, aged 15-64 years, vis-a vis the consumers, aged under 15 and over 64 years. It gives an indication of the burden the producers have to bear in order to feed the consumers (Welfare Monitoring Survey, 1994). The distribution gives, on average, 107 dependents for every 100 active persons. There is need for the planning of institutions such as schools and services such as the health facilities.

3.4.2 Ability to read and write in the Nandi District

Adult literacy level is generally defined as the percentage of people aged 15 and above who can both read and write a short simple statement in any language (Welfare Monitoring Report, 1994).

The literacy level of Nandi District is very low in comparison with the rest of the nation. A literacy survey carried out in the district in 1990 revealed that the district had more than 43,000 illiterate adults. This number of course continued to increase as a result of school drop outs and those children who are unable to attend primary education. This district has 161 illiterate centres. However, enrolment in these centres is minimal since education is not considered a major priority to the district community.

Table 3.2 Average Enrolment for learners in Adult Education classes

	Men	Women	Total
1989	350	846	1196
1990	417	1031	1448
1991	409	1046	1455
1992	421	973	1394

Source: Welfare Monitoring Report, 1994.

Women take the lead in both enrolment and attendance.

3.4.3 Distribution of population by Employment

Table 3.3 Formal sector

Male	Female (own business)
12159	15616

Source: Welfare Monitoring Report, 1994.

Table 3.4 Casual labour

Male	Female
5195	1212

Source: Welfare Monitoring Report, 1994.

Table 3.5 Unpaid family labour

Male	Female
26308	45990

Source: Welfare Monitoring Report, 1994.

Desegregation by gender reveals that 45,990 were involved in unpaid family labour compared to 26,308 males. It is worth noting that males dominate all employment sectors except for unpaid family labour.

3.4.4 Mean Monthly Income

Table 3.6 Population aged 15 and above years

Male	Female	Total
2146.6	989.7	1561.6

Source: Welfare Monitoring Report, 1994.

The level of income determines the extent to which one can afford essential goods and services which include the very basic of necessities such as food and clothing. Men are shown to have higher incomes than the women. This may be attributed to greater availability of better paying formal and informal sector employment. The income disparity between males and females may also be explained by earnings received from the sale of maize crop farming. Nandi District is an agriculturally productive area.

3.5 Land use in Kipkaren Division

The area is suitable for the cultivation of a variety of crops. Maize is the main food crop as well as cash crop. Food crops grown in the area include: onions, beans, kales, sorghum, millet, cowpeas, mangoes and bananas. The farmers prefer to grow maize since it can be used both for commercial and subsistence purposes. The marketing facilities are also readily available in the area.

3.5.1 Maize growing in the area

The district has a very high potential for food and cash crop activities.

The main crop produced in Kipkaren Division is maize. It is produced for both commercial and subsistence purposes. The planting season is between March and April and the harvesting takes place between November and December.

One respondent (Sarah Rotich) had this to say "maize is the basic food for our people. It takes most part of the year, engaging land for long. Nevertheless, I always use a small portion of my plot to cultivate maize because I feel it is a shame to be buying maize when I could have planted my own. Every farmer does the same".

Another respondent (Rebecca Mutai), had this to say " Maize cannot be effectively intercropped with other crops, except in the early stages for quick maturity crops such as beans. Much as I may feel that maize strains a scarce resource , land, it is difficult to let a season pass without cultivating maize for my family"

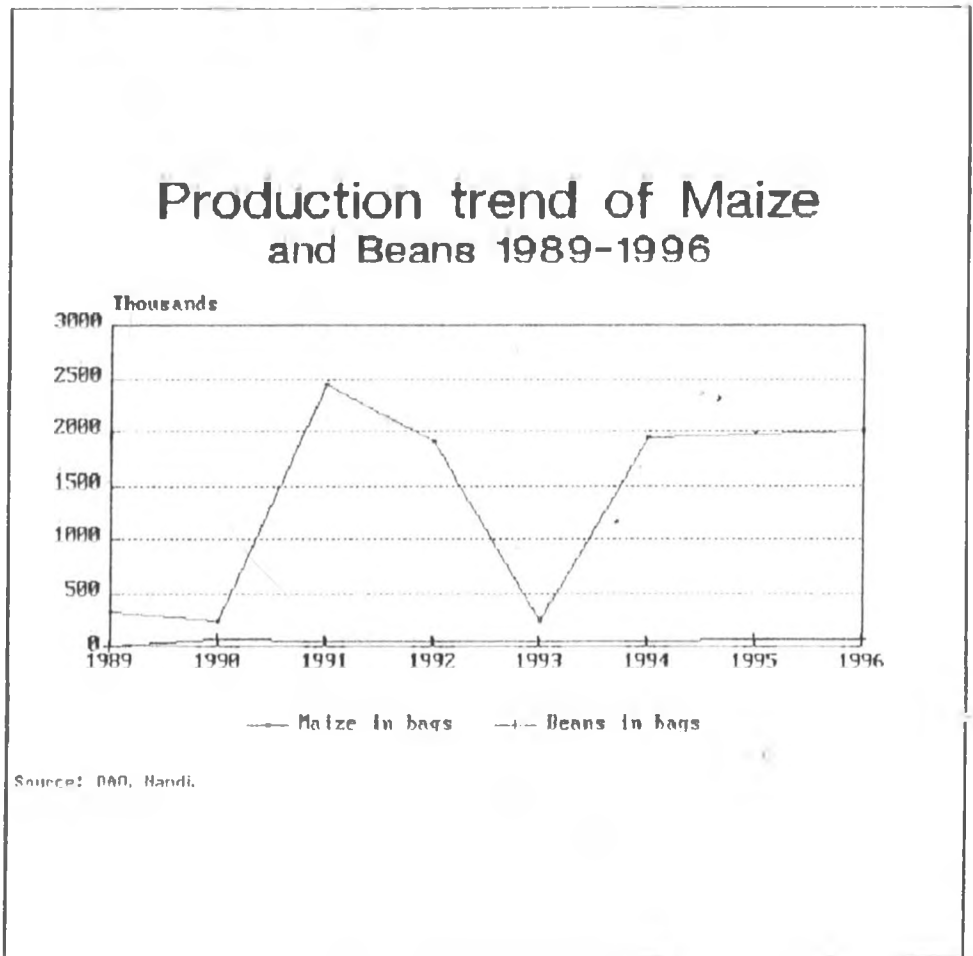
plate 3.1 Maize growing in Kipkaren Division



5.5.2 Maize and Beans

A third respondent (Elizabeth Murgor) said " while maize and beans feature prominently in our local markets, there is a greater assurance of family's food supply when a farmer has grown her own. I always reserve a portion of my plot, no matter how small for the two crops".

Figure 3.8 Production trend of maize and beans in Nandi district



From figure 3.8, it is evident that maize production fell over the plan period both in hectarage as well as in production. This trend is not favourable since maize is the main staple food for the district and the entire country. The decline can be attributed to lack of incentives to the farmers, high input costs and low pricing due to market distributions.

Using the collected data, the research found that women choose

to grow crops that meet their family food requirements where surpluses could always be sold. At the same time, generation of hard cash required to meet other pressing family needs. This was reflected in the choice of the crops which the cultivators did not even use as food. In this category were the mangoes and bananas. In their endeavour to maximize production in small plots of land, women farmers were found to use good methods of farming such as use of fertilizers, sprays, intercropping and improved seeds.

plate 3.2 Other crops grown to generate income



Fodder for cattle feeding is also grown in Kipkaren Division. This is to supplement for the natural pasture which is at times inadequate especially during the dry spell experienced from end of December to mid March.

Plate 3.3 Fodder growing in Kipkaren Division

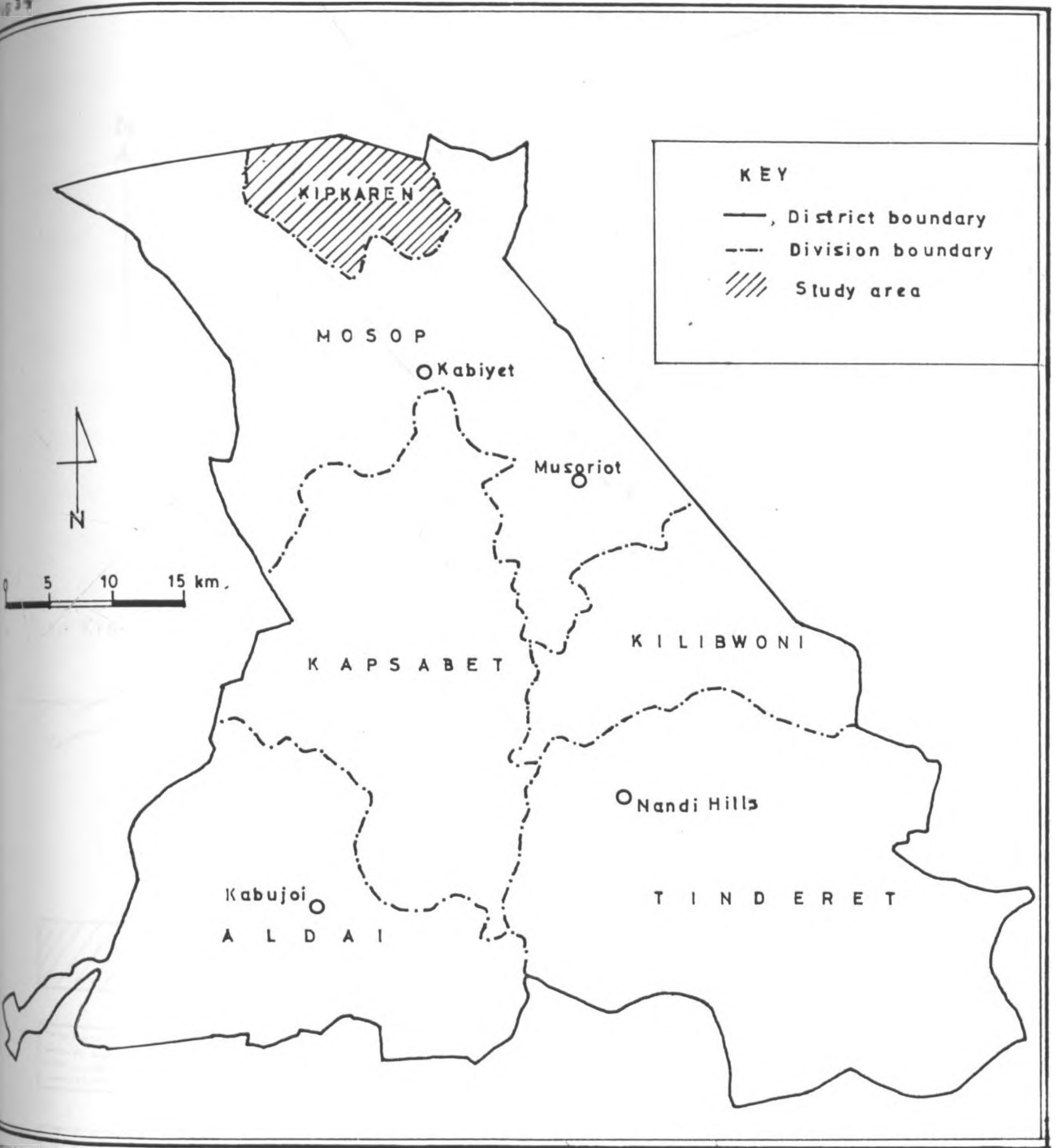


3.6 Administrative and Road network

The Nandi County Council covers the entire district except for the area covered by Kapsabet Municipal council and Nandi Hills Urban Council.

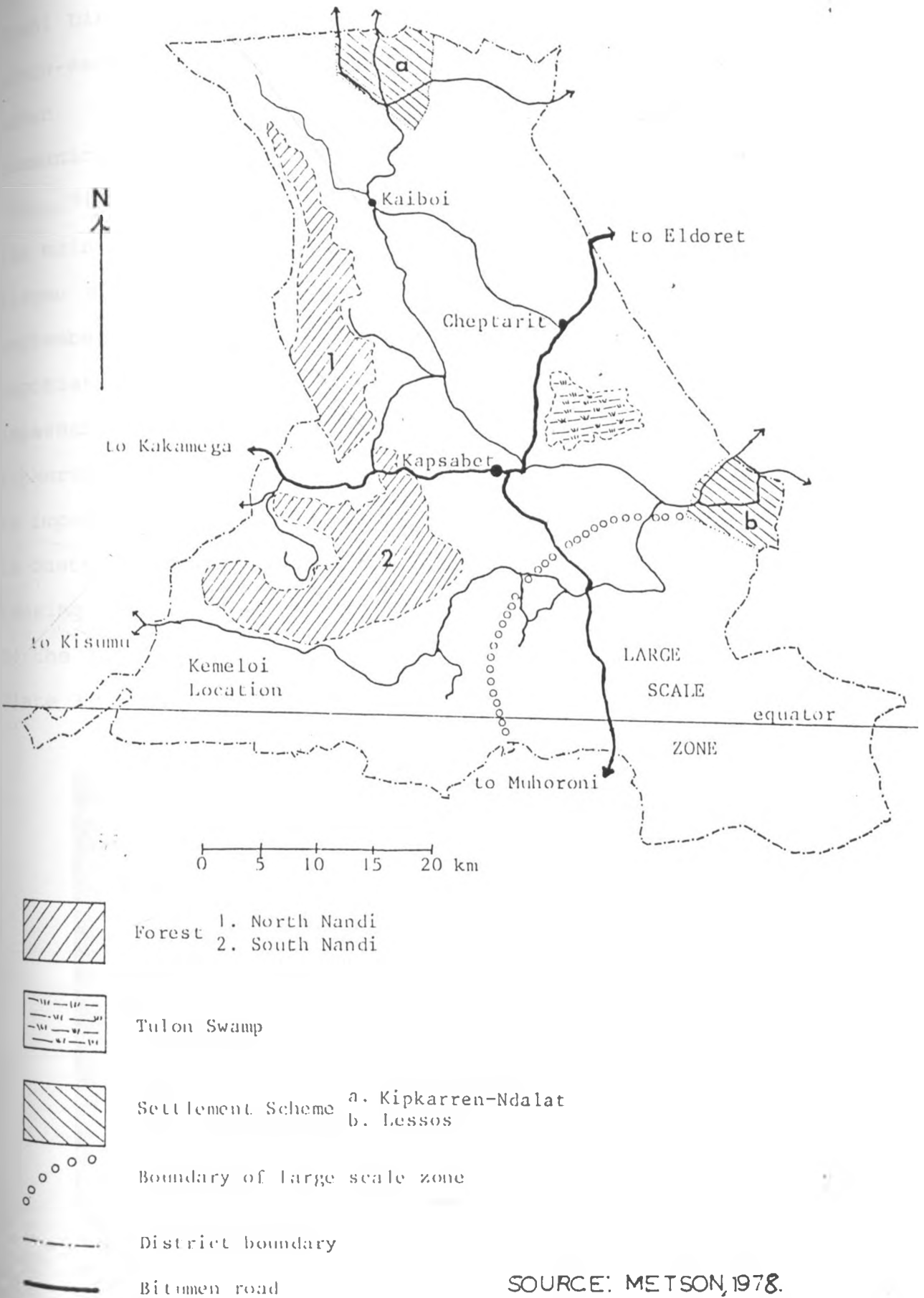
There are three electoral constituencies in the District. Aldai constituency covers both Kapsabet and Aldai Administrative Divisions. Mosop constituency covers Kipkaren Division, while Tindiret, Kilibwoni and Nandi Hills Divisions constitute Tindiret constituency (Figure 3.9). Figure 3.10 shows the road network and areas that were formally settlement schemes in Nandi District.

THE STUDY AREA



Source: National Development Plan, 1996.

FIG. 3.10 ROAD NETWORK IN NANDI DISTRICT



SOURCE: METSON, 1978.

3.6.1 Communication

Nandi District is served by four major roads radiating north, north-east, south and west from Kapsabet, the District's main urban centre. The Kapsabet-Kaiboi, road is the main communications channel for north Nandi and the bitumen-surfaced roads from Kapsabet to Eldoret, Muhoroni and Kakamega provide the main links with the neighbouring districts of Uasin Gishu, Kisumu and Kakamega. Due to the high rainfall from March to September, many of the Murram roads are very difficult to negotiate and in the Tulon-Kilibwoni area, some roads are impassable. The Tulon Kilibwoni road is the one connecting Kipkaren Division to Eldoret town and Kapsabet town. This road is impassable during the rainy season. The Tulon-Kilibwoni road is dusty during the dry season and muddy during the rainy season causing difficulties in the delivery of produce to the markets by the farmers.

Plate 3.4. Road condition in Kipkaren Division



CHAPTER FOUR: THE NATURE AND EXTENT OF WOMEN'S ACCESS TO LAND

4.1 Characteristics of women in Kipkaren Division

4.1.1 Age Distribution

The total sample studied was 60 women. This was drawn from a sample of 500 households. The average age of the women interviewed was 42 years. Their ages range between 26-60 years. About 24% of these were between 26-34 years. About 48 were between 35-49 years. 30% were 50 years and above. This is illustrated in table 4.1 and figure 4.1.

Table 4.1 Age Distribution

Age	Frequency	Percentage	Cum Frequency
26	1	1.7	1.7
27	2	3.3	5.0
28	3	5	10.0
30	3	5	15.0
31	1	1.7	16.7
33	1	1.7	18.3
34	3	5	23.3
36	3	5	28.3
37	4	7.7	35.0
38	5	8.3	43.3
39	2	3.3	46.7
40	5	8.3	55.0
42	1	1.7	56.7
44	1	1.7	58.3
45	3	5	63.3
46	1	1.7	65.0
47	1	1.7	66.7
48	1	1.7	68.3
49	1	1.7	70.0
50	5	8.3	78.3
54	1	1.7	80.0
55	5	8.3	88.3
56	2	3.3	91.7
57	1	1.7	93.3
60	4	6.7	100
Total	60	100	

Source: Field survey, 1997.

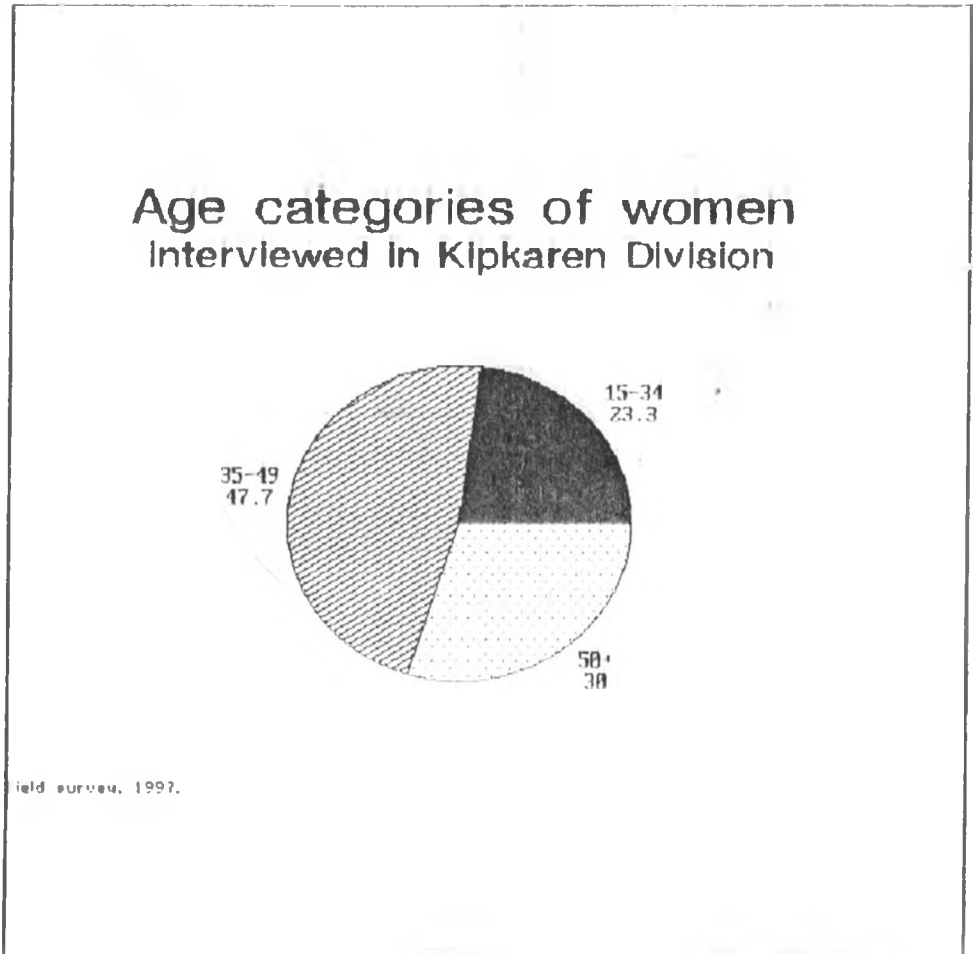
4.1.2 Age categories of women interviewed

Figure 1 shows that women in the category 15 and 34 years of age added up to 23.3% of the total number in this category, of what would be classified as young women informants, is relatively low. A possible explanation for this may be that young women of this age tend to join their husbands who are in formal employment in urban areas.

Another possibility is that the said age category is highly mobile due to education and formal employment, trade and etc. and if they have any children dependants, such are left under the care of their grand parents.

Women of between 34 and 49 years of age were classified as middle aged. This category of informants (46.7%) formed the majority of the combined total number of informants. These were seen to be the economically active women who needed to meet many obligations for their families especially in food production and childcare. The older women (50 and above years) added up to 30%. These are women who need assistance in terms of labour and capital.

Figure 4.1 Age categories of women interviewed



4.1.3 Marital status

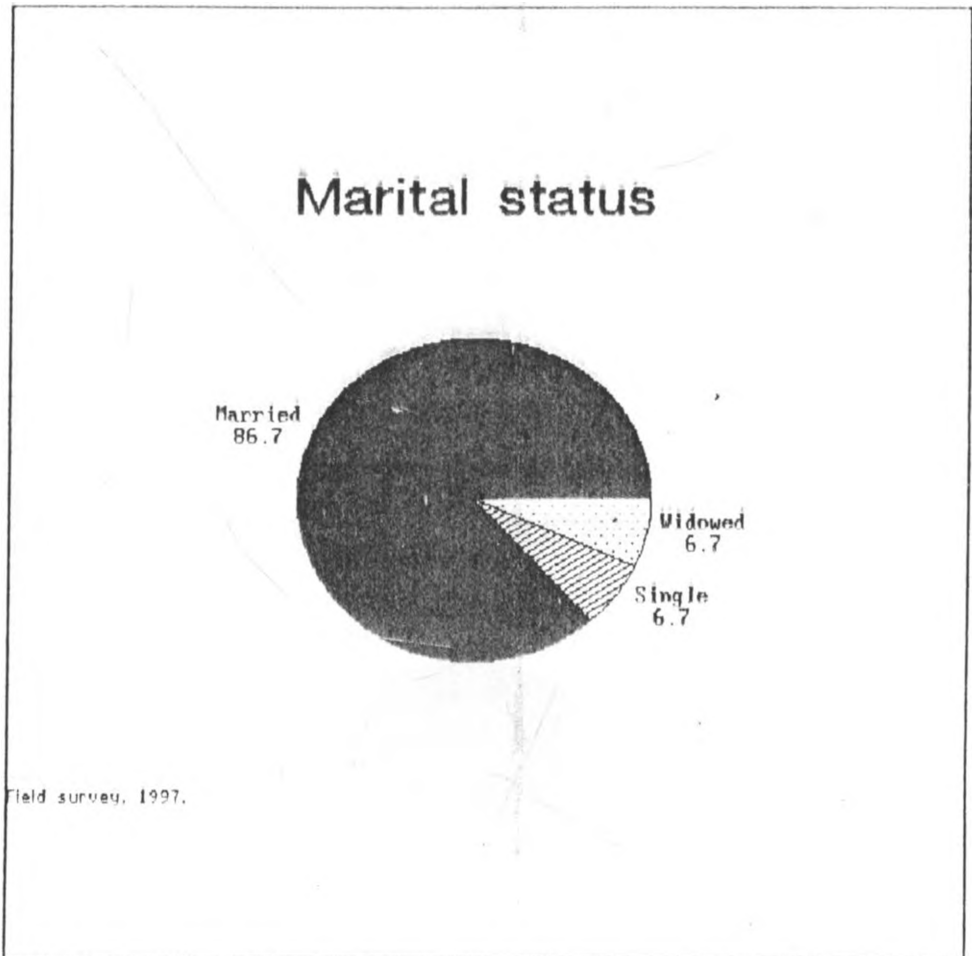
As shown in table 4.2 and figure 4.2, the survey found out that 86.7% of the women were married. 6.7% were found to be widowed and 6.7% were single.

Table 2. Distribution of women by marital status in Kipkaren division

Married	86.7%
Single	6.7%
Widowed	6.7%
Total	100

Source: Field survey, 1997.

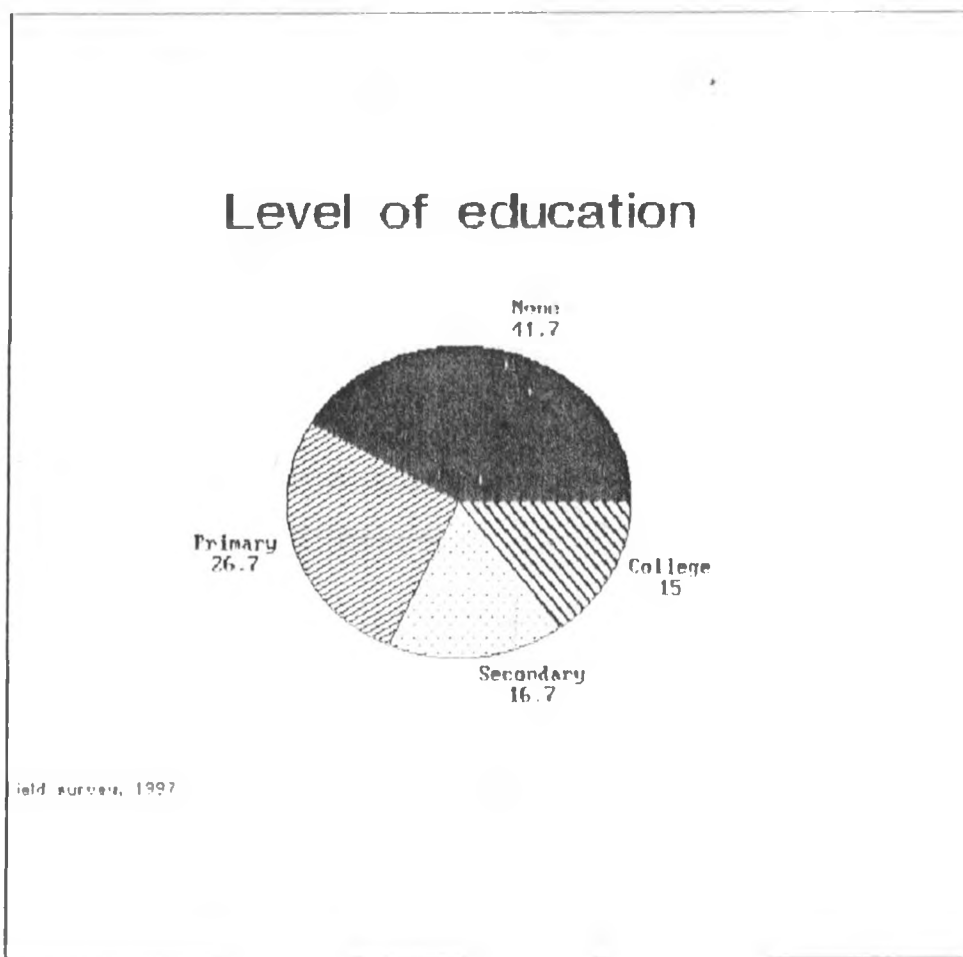
Figure 4.2 Marital status of women in Kipkaren Division



4.1.4 Level of education of respondents

As concerns the level of education, about 42% of the women had no education at all, about 27% had primary school education, about 17% had secondary school education and 15% were college leavers.

Figure 4.3 Level of education of the respondents



Studies supported by the world Bank have demonstrated the critical link between farmer efficiency and farmer education (Jamison and Lau, 1982). The impact of education on efficiency

is likely to be particularly strong when modern as opposed to traditional agricultural techniques are being introduced.

Individual farmers rate of adoption of innovations may be influenced by the level of formal education, the tendency being that those with higher formal education are more innovative than those with none. Also, farmers with higher aspirational levels view farming as a business and not merely as a way of life, are more exposed to the outside world, have greater access to information, are all more innovative than their counter parts with the opposite qualities. The former are ready to experiment on an innovation once a reputable company or the government has confirmed the research (Ng'ethe, 1995).

As quoted from Ndengu (1995) a socio-cultural study on gender and age by Suda in Kakamega District in 1988 (ed G.S. Were I.A.S. 1990) indicates that only 15% of the surveyed women had secondary education, while 66.4% had completed primary education. About 16.8% were illiterate and mere 1.9% had participated in some kind of adult literacy programme. This shows that most women in the rural areas lack adequate formal education, which is a major hinderance to economic development.

In this research the level of education is a proxy for the level of management. A woman with a higher level of education is assumed to provide better management and hence higher

agricultural productivity; however this was not found to be a significant factor inhibiting agricultural productivity as 5% of the women who were college leavers showed a lower crop productivity from their farms. The interviews with these women confirmed that they were less committed to their farms and were more involved in off-farm activities.

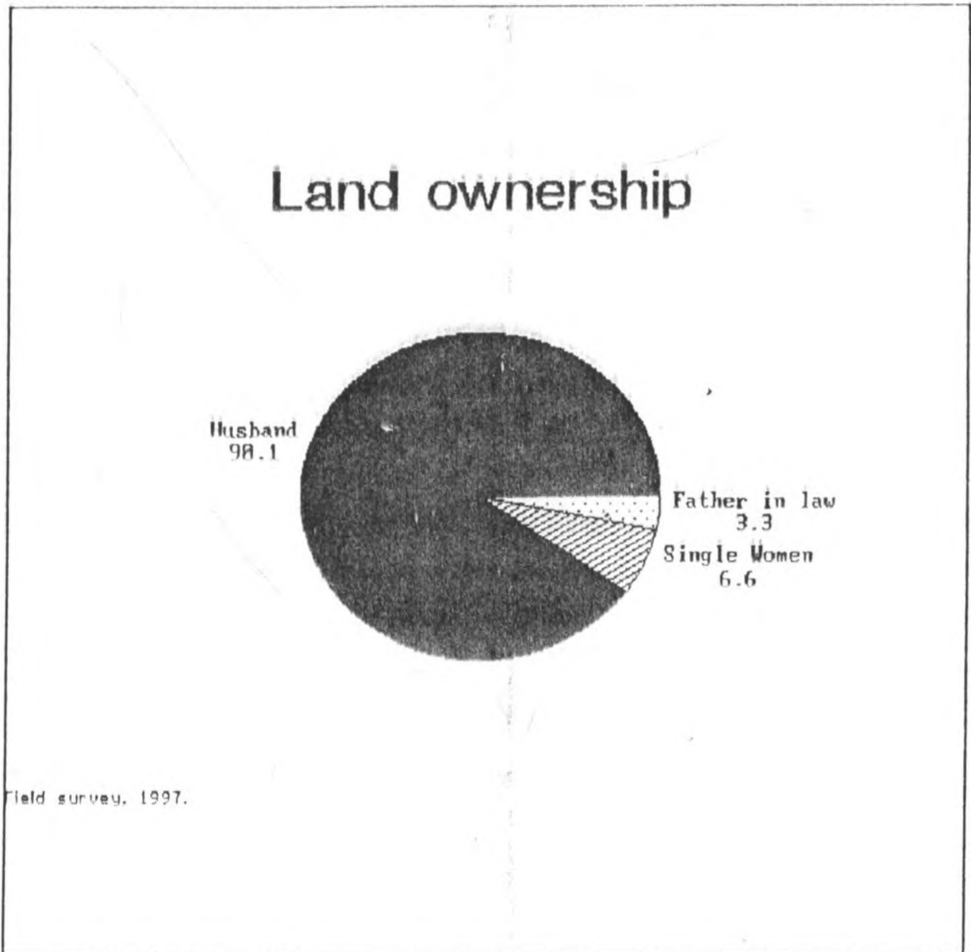
4.2 Access to land

4.2.1 Mode of land ownership

security is defined as the ability of a farmer to cultivate a piece of land on a continuous basis, free from imposition, dispute or approbation from outside sources, as well as the ability to claim returns for land improvements while operating the land and upon its alienation (Adhola et al., 1990).

On the question of land registration, all respondents said their land was registered. When asked in whose name it was registered and their own relationship with the registered owner, about 90% of the respondents said that their land is registered in their husbands name; about 7% said that the land is registered in their own name, about 3% said that the land was registered in their father's inlaws name. This is illustrated in the figure 4.4.

Figure 4.4 Mode of land ownership



This supports the argument by Were (1983:7) that though technically Kenyan women and men have equal rights, in practice, the latter have more privileges. For example, it is generally more difficult for women to acquire loans for investment purposes. This is because the vast majority of the women are handicapped due to lack of securities.

This shows that a rural woman as an agriculturalist is limited by structural barriers within the country's financial institutional framework. Lack of adequate access and rights over land has also affected women as decision-makers. Studies by Staudt (1975) show that women work on land but wield little or no power in decision-making.

In Kikaren Division, the group which was constituted to assist in the adjudication of land was entirely male. These men argued that by custom women did not take part in land disputes, and therefore it was reasonable for such a group to be all male. As things stood at the time this research was carried out, there were clear indications that the all-male advisory group would not give advice which would lead to the strengthening of rights to land accessibility by women. They have overemphasised the structural points of allocation and inheritance of land at the expense of use rights, which is the area in which women cultivators stand to be most adversely affected. About 70% of the women pointed out that lack of capital was their major handicap in agricultural production and productivity. And as pointed above, about 90% of the households plots were registered under the husbands names and about 3% under the fathers in laws names. This means that most of the women cannot obtain loans if they have to use land titles as securities. This was observed to be a significant factor inhibiting women to participate actively in agriculture.

single women heads of households by various dispositions owned land. The widowed inherited land from their deceased husbands and are considered guardians awaiting to pass the land to their sons, whereas the divorced and separated women could have access to their father's land. Likewise unwed women may have parcels of plots from male relatives on their father's side.

The amount of land accessible to women for their agricultural activities is hypothesised to be influenced by whether the woman is in female headed household or male headed household, her marital status, whether she is in an inherited land, land which was initially obtained from the white settlers or a family household land obtained through purchase. It is also hypothesised to be influenced by the total area of land possessed by the household and whether she is involved in cash crop production or not.

According to the survey, about 91.% of the women did not own land although they were accessible to some portions of the household land. About 7% owned the land and had titles under their name. Pala (1975:11) describes lack of land holding and property control as a limitation to women's participation in the economy.

Single women bought their own land. Most of the single women surveyed had experienced financial constraints to acquire the property they owned.

Research studies by Mucai (1976) and Njau (1979) on matrimonial property in Kenya, indicate that married women were free to own the property they acquired on their own.

In Kipkaren Division, widows controlled the land that they had inherited from their spouses. This finding is supported by a study done by Nyabundi (1987), which states that a woman can only have the land registered in her name if the husband is deceased and she is the only adult member of the family. This could therefore go a long way in explaining why the widowed women have access to bigger portions of land (4.5 acres) compared to the single (1.25 acres) and the married women in male headed households (1.4 acres) as shown in table 4.4. They controlled virtually all the property under their care. This outcome concurs with Pala's study (1975) on women's participation in Kenyan society. In her study Pala (1975) states that although men have the power to land allocation, women control the same, being producers and reproducers. The survey revealed that the widows could allocate land and other property like livestock to their sons.

According to the socio-cultural studies by Suda and Oyiendo, (1990) a woman whose husband was deceased was expected to consult with any other adult male within the family for instance a son on decisions regarding the disposal and use of land.

4.2.2 Land accessibility

As quoted from Mwambazi (1994), older women are expected to have access to more land for the simple reason that they have had more time to seek and accumulate more plots during the course of their lives. Widows too are expected to have inherited larger plots from their deceased husbands. This was proved positive by the research. As shown in table 4.3, women between the ages of 15-34 were found to have access to small plots of land (0.82 acres), mainly given to them by their husbands or fathers inlaws. These women have had little time to seek their own assets or even purchase land. They formed the least number in the sample (14 respondents). In most cases they have been dependant on their parents.

Table 4.3 Land accessibility by age

Age	Total amount of land in acres	Percentage	Average amount of land in acres
15-34	11.5	10.1%	0.8
35-49	54.5	47.8%	1.95
50+	48	42.1%	2.67
Total	114	100%	5.42

Source: Field survey, 1997.

Women between ages 35-49 were found to have reasonably more land (1.95 acres) compared to the former. They formed the largest number in the sample. These women have had some reasonable time to acquire land from the family household land and also through purchase of more land. Older women and who are mostly widows were found to have more land (2.67 acres).

4.2.3 Land accessibility by marital status

Married women and women in male headed households could be expected to have access to more land than those in female headed households in support of the findings that male headed households possess more land than female headed households (Due, et al., 1987 and Phiri, 1986). This may not however, be true considering the fact that most male headed households have big families and as such have to apportion the total land over a big number of individuals. Additionally, men will rarely allocate big parcels of land to their womenfolk as they want them to provide labour for joint fields as well.

According to marital status married women were found to have access to the least area of land 1.4 acres. Single women owned land. The average amount of land owned by single women was 1.25. Widows were found to have access to 4.5 acres of land for agricultural production, while married women in female headed households were found to have access to the biggest portion of land (5.2 acres).

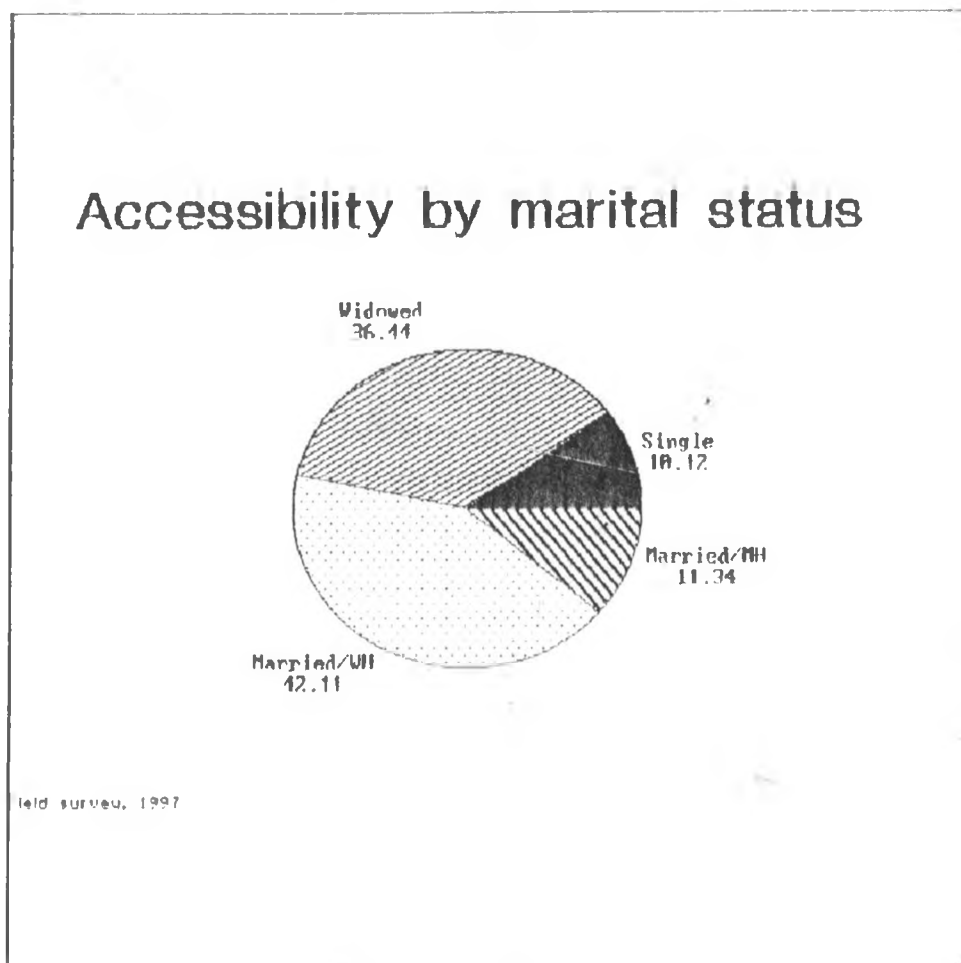
The survey data also shows that the amount of land available to women who produce cash crops is higher (5.2. acres) than that available to women who do not produce cash crops (1.25 and 1.4 acres).

Table 4.4 Land accessibility by marital status

Marital status	Average amount of land in acres accessible to women of different marital categories	Average amount of land expressed as a percentage
Single	1.25	10.12
Widowed	4.5	36.44
Married women in female headed households (WH)	5.2	42.11
Married women in male headed households (MH)	1.4	11.34
Total	12.34	100%

Source: Field survey, 1997.

Figure 4.5 Land accessibility by marital status



These findings are supported by a study done by Geilsier et al. (1985) which showed that women's access to land is affected by their marital status among other findings.

4.2.4 Categories of who should inherit land

Approximately 40% of the women surveyed felt that only men should inherit land, as they are the next of kins. Daughters on the other hand join other families yet land is immovable. About

6% were of the opinion that women should inherit property since they manage it better than men. About 30% felt that everybody who has access to land should inherit it regardless of one's sex and marital status. 1% of the women surveyed was not sure whether women should inherit land or not.

Table 4.5 Categories of who should inherit land

	No. of respondents	Percentage
Men	24	40%
Women	5	8.33%
Both men and women	30	50%
N/A	1	1.67%
Total	60	100%

Source: Field survey, 1997.

For the surveyed women who felt that women should inherit land, said that it is because women are the producers, domestic workers, and that men are not always at home. Furthermore, both men and women should be equal when it comes to land ownership. Njau and Mukabi (1985) have described women as the peasants, domestic workers, small and large scale farmers, reproducers and petty traders. They also, head families as bread winners. Lack of land ownership would be a hinderance to women's participation in the agricultural economy.

Nyabundim (1987) indicates in his study of the Luo community that inheritance was from father to son and particularly land. This was after their father dies or immediately a son got married. Oyiendo (1990) indicates that it was not expected that girls inherit land from their parents because it was considered a bad omen to their brothers. However, in some parts, women inherit land if the family has no son; this was also found to be the case in the Nandi community. They could also get land as a rare gift from the father.

As quoted from Ndengu (1995), the idea that women should inherit the means of production, particularly land, is not yet accepted. Imbuga (1988) reiterates this in his play when a will meant for a woman to inherit land, brought a saga in the whole village. The change however is gradual. None of the women surveyed had inherited land from their fathers.

4.2.5 Mode of land acquisition

The research found out that the percentage of the land that is bought is higher than the land inherited and the one obtained initially from the former white settlers (Settlement scheme) and having not been sold to anybody else by the family members. This shows that there is much subdivision of land in the area, resulting to smaller household plots and thus more pressure on land. It also means that women tend to have access to smaller acreages of household farms and thus less income and

underutilization of their labour for household food production.

Mutimba (1982) argues that the problem is not only the amount of land use and quality of land which constraints women's agricultural production, land pressures due to increased population have led to reduced women's ownership of land. In addition, due to small size of women's holdings, good cropping methods, such as crop rotation are difficult to follow resulting in low productivity. These findings are confirmed by the research.

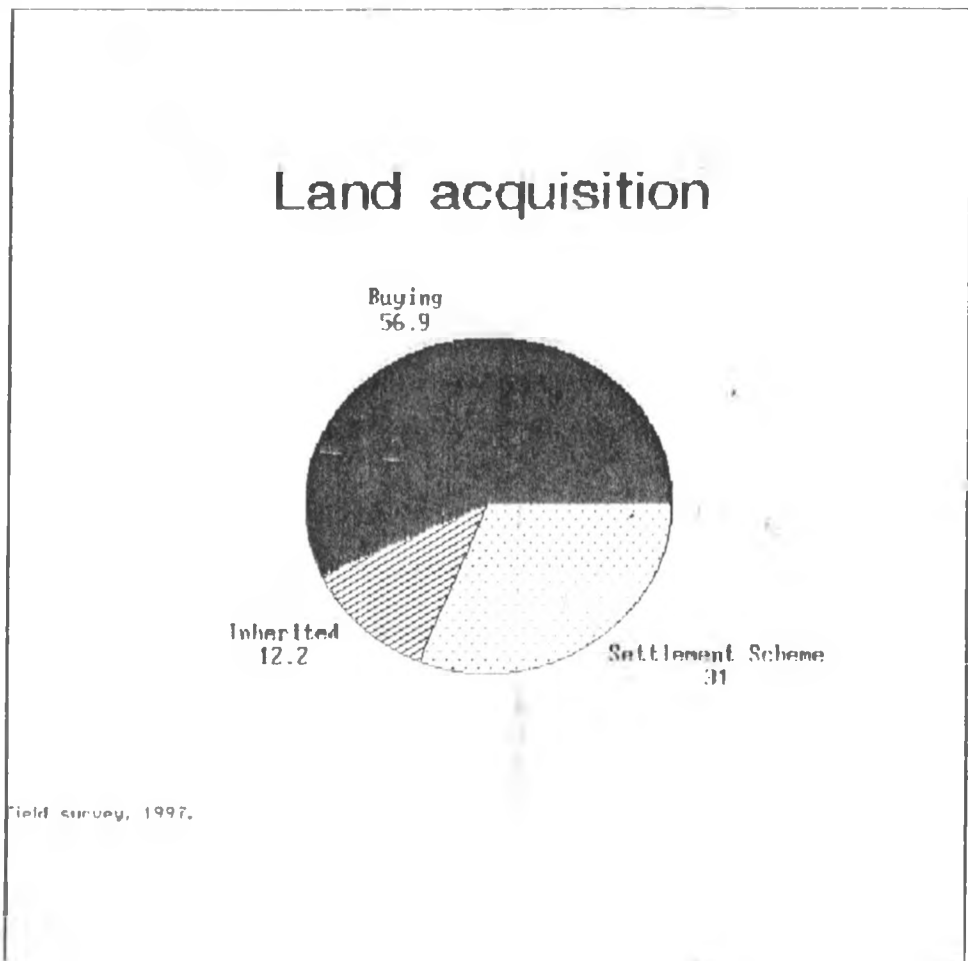
Women whose's household land was acquired through purchase was the smallest (1.4 acres), those whose's household land was acquired through inheritance of the parents land was found to be reasonably larger than the former (2.2 acres) and those in the lands that were acquired from the white settlers and having not been subdivided through selling to other people were found to be accessible to the largest parcel of land (3 acres).

Table 4.6 Average amounts of different categories of land accessible to women

Mode of acquisition	Average amount of land in acres	Percentage of the total amount of land
Bought	1.4	41.67%
Inherited	2.2	28.95%
Settlement scheme	3	29.39%
Total	6.6	100%

Source: Field survey, 1997.

Figure 4.6 Mode of land acquisition



CHAPTER FIVE: ACCESS TO LAND, DECISION-MAKING AND AGRICULTURAL PRODUCTION

5.1 Women's agricultural productivity and production

Married women in women headed households, are the women whose husbands are not at home to execute decisions on the farm. These women execute decisions on the cultivation of the farms, the purchasing of the inputs, the planting of the crops and the marketing of the produce. They are the managers of their farms.

Male headed households are the households that the husbands are present at home and they execute decisions on the farm on a day to day basis. They make decisions concerning the cultivation of the household land, the purchase of inputs, the planting and marketing of the crop and the expenditure of the income accruing from the crop.

Single women were shown to own small portions of land (1.25 acres). These women were therefore accessible to the land they had purchased and therefore under which their names were registered. The field survey showed that these women had little assets to purchase bigger pieces of land. They were shown to produce little from their farms because they have little capital and are more involved in off-farm activities.

Married women in female headed households were shown to have access to bigger plots of land (5.2 acres). These are the women

who remain at home while in most cases their spouses are involved in other occupations outside the home area. They were shown to make all the decisions concerning the household farm and also controlled the outcome from the crop. Most of them reported their husbands sending back remittances to their homes to assist in getting labour, obtaining machinery and purchasing inputs. Mook (1976) however, found women farm managers, equally productive per hectare when compared with male managers, though less productive per hour. This also confirms the results by Kosura (1990) that, total acreage is the most important variable in accounting for the variability in total production.

Widows ranged second in these category with access to 4.5 acres. but with low productivity of 13.75 bags of maize per acre, the reason being lack of capital and labour. This argument confirms the comments by Staudt (1978) that, women with responsibility for particular crops or with management responsibilities for entire household production systems often lack access to modern inputs through exclusion from farmers associations or cooperatives, and through lack of access to capital, credit or government extension services.

Women in male headed households were shown to have access to 1.4 acres of land with a productivity of 17.87 bags of maize per acre. Single women were not accessible to any land but owned land (1.25 acres). This is illustrated in the table 5.1.

Table 5.1 Women's agricultural productivity and production

Marital status	Average Volume of Maize in bags per acre	Average Total production of Maize in Kg	Average land size (acres) accessible to women of different marital status	Average productivity per acre in Kg
Single	12.5	1406.25	1.25	1125
Widows	13.75	5568.75	4.5	1237.5
Married women in male headed household	17.87	2251.62	1.4	1608.3
Married women in female headed households	18.75	8775	5.2	1687.5
Total	62.87	18001	12.35	5658.3

Source: Field survey, 1997.

The results in this research supports the studies by Himonga et al. (1988) which indicated the possibility of widows being better off in as far as land ownership and accessibility is concerned.

As documented by a number of studies (Phiri, 1986; Due and Magayane, 1990; Chileya, 1990; Geister et al., 1985), women and female headed households plant small hectarages and hence their total production is lower with a higher percentage needed for consumption. This supports the theory that the amount of land size is one of the most important factors affecting their total production and productivity.

Given the same amounts of labour and capital, and assuming there is little difference in land quality those who cultivate more land have higher agricultural yield. In addition, it is assumed that the higher the amount of land accessible to women the more land they cultivate. Women from households with large family plot were found to cultivate more land (5 acres) while women from households with small plots were found to cultivate little land (1 acre and below).

This study is supported by Lee and Stewart (1983), on land ownership, and the adoption of maximum tillage in the United States, that small operating size poses minimum tillage adoption than does the type of security.

These results also supports the results from a regression analysis done by Due et al. (1990) on the 1986 Zambian data set of 124 farm households revealing that total acreage appeared to be the most important variable in accounting for the variability in total production.

Women's lack of access can be a strong disincentive to adopting new techniques or investing in the land (Saito, 1990).

The above explanations suggests that there is a difference in agricultural productivity as well as production between women in male headed households and those in female headed households.

It is hence suggested that in terms of access to land, what affects women's agricultural production and productivity more is the area of land accessible to women rather than the type of security on that land or even the mode of acquisition of that land.

5.2 Value of purchased inputs

Due and Magayane (1990) showed that total farm operating expenses were the second most important explanatory prediction of total crop production. This study is proved positive in this research. The women who were shown to purchase a little number of inputs per acre were shown to have a lower productivity per acre (10 bags) of maize per acre. Those who purchased a bigger

number of inputs per acre were shown to have higher productivity per acre (18 bags and above). Widows and the single women were shown to purchase a little number of inputs due to lack of capital, their productivity was shown to be low 13.75 bags of maize per acre and 12.5 bags per acre respectively. Most of them were not shown to practise good farming methods like top dressing because of lack of capital to purchase the required inputs in this exercise.

In the sixties and early seventies, FAO (1966) sponsored fertilizer trials in Kenya. The study demonstrated to farmers the extent to which fertilizers can enhance crop yield. They collected a lot of data showing the response of maize to fertilizers. The study covered a large number of districts so as to make recommendations for specific regions. This was important because of the need to make a regional specific recommendations necessitated by great variability in agro-ecological conditions. The results, showed that it was profitable to use fertilizer for all regions. This study is proved positive by the findings in Kipkaren Division.

5.3 Level of decision making

Decision making in all aspects of life is a topic that has attracted considerable scholarly investigations. In the agricultural sector, decision making studies have focused more on male than female farmers because of the assumption that men

are always heads of the households and owners of the land on which production is carried out. Women are assumed to be merely house wives whose activities are in the kitchen. In cases where they go out of it they only assist either their spouse farmers or male relatives if unmarried (Sachs, 1983). However, Bernes (1978:58) notes that more and more women are becoming heads of their own households. It should follow, therefore, that such female heads do make or should make decisions for their own households.

There are those women who are heads in their own households because their spouses are away from home and cannot execute day to day or season to season decisions on farming activities. There are those who are heads because they are single and also those who are widowed.

The research found out that about 8% of the women made decisions on the farm because their spouses were away and cannot execute decisions on the farm. These women revealed a higher agricultural productivity at 18.75 bags of maize per acre. Where a woman has a high decision making power especially in areas of production, marketing and control of income, she has more incentives to provide more labour and inputs and hence higher agricultural production.

The level of decision making power of a woman is considered to be high if she has a say in two or more of the following, including control over income: production decisions and use of inputs, marketing of produce and control of income and expenditure.

It has been shown that the ability to control income affect peoples willingness to provide labour input and to be productive (Horenstein, 1990). Research from Kenya comparing the effectiveness of weeding (a female task) on maize yields in male and female headed households underscores the implications of the differential incentive structure. In female headed households, weeding raised maize yields by 56% while in male headed households, yields only increased by 15% (Horenstein, 1990). This study suggests that where women controlled the crop, they did have the incentive to provide the necessary labour.

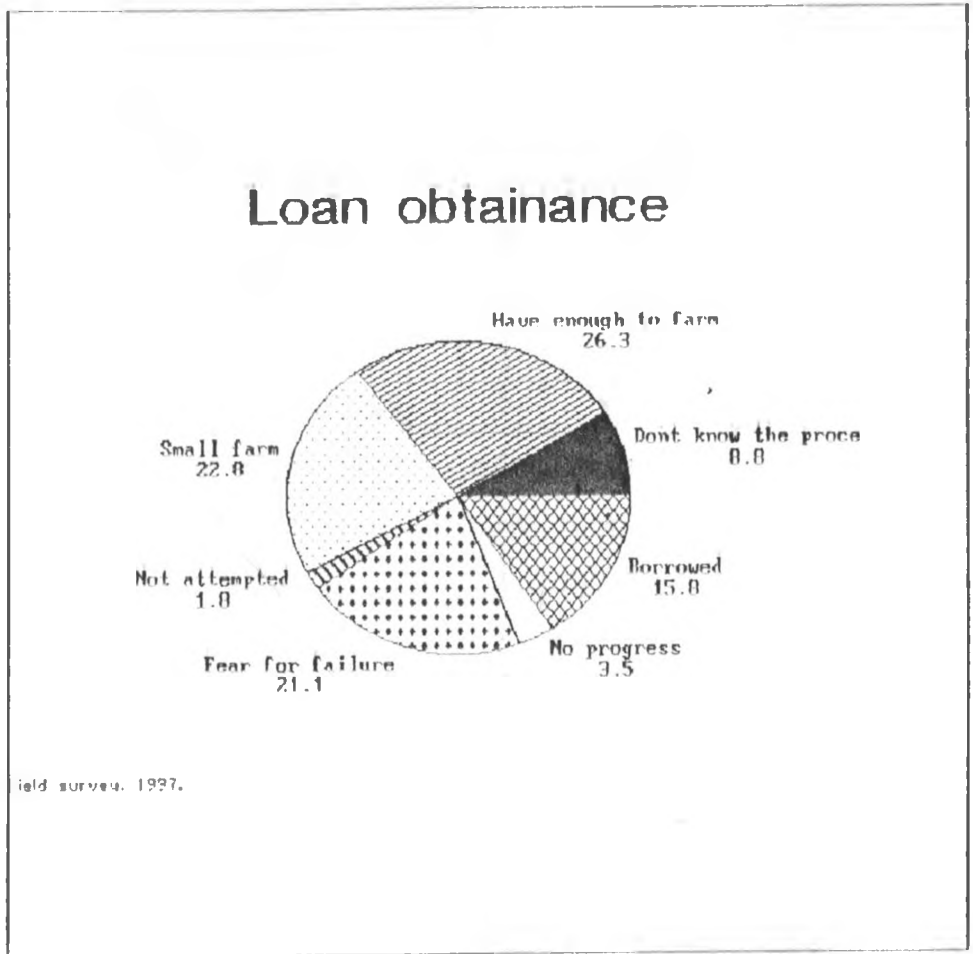
Due to women's predominant role in providing for the family, their access to and control of income is critical to their roles in assuming household food security. The issue of control over income is a delicate one since it is often related to land ownership and can impinge upon deep seated cultural beliefs and traditions. But it has been shown that the ability to control income affects peoples willingness to provide labour input and to be productive (Horenstein, 1990).

pala (1975) in his paper "Avenues for and constraints of women in development process in Kenya", says that women heads of households who are land owners with substantial acreage can make independent decisions concerning land use, can use the income derived from their land as they see fit and can receive credit from government agencies. However where women are defacto heads of households, but not land owners, they tend to be bound to a large degree by the decisions of the men who have title to the land.

5.4 Loan obtainance

About 70% of the women interviewed in Kipkaren Division cited that lack of capital was their major problem. This is supported by a study done by World Bank in 1989, which states that "lack of cash" kept them from using more improved varieties of seeds, fertilizer and other inputs. Payment of wage labour also require cash, often at a time when low resource farmers are unlikely to have ready cash or access to credit. Farmers who cannot afford inputs and who cannot pay for hired labour are less likely to be interested in extension activities, likewise, extension agents are less likely to target this group because of their inability to respond to recommendations to purchase inputs and additional labour. 96.7% of the women had stated that they were not visited by the agricultural extension officers.

Figure 5.1 Loan obtainance



Women are by passed by formal credit systems for a number of reasons, lack of collateral, (usually land title); need for a male co-signer; lower levels of literacy, numeracy, and general education; lack of information, distance and cost of travel to credit institutions and the small scale of many women's operations.

It is not so much that formal laws prohibit women obtaining credit but rather these factors discourage their access to it. Studies in countries as diverse as the Gambian (Shipon, 1986) and Kenya (Maitha, 1986) report that few women small holders obtain credit from the formal lending institutions. Women represent only 7% in Sierra Leone and 6.3% in Malawi of recipients of seasonal loans (IFAD, 1985). Yet women are generally a better credit risk than men. Women have higher repayment rates than men, not only in Africa but throughout the world, as the examples of the Grameen Bank in Bangladesh and the Rural Farmers Scheme in Uganda demonstrate (Saito et al., 1990).

As stated by Saito (1990), without credit, women are less likely to be able to afford the inputs recommended by extension agents. This can in turn, lessen their chances of having contact with extension agents. The study in Kipkaren Division found out that about 72% of the women had no savings accounts because of low income. About 70% cited lack of capital as their major problem in agricultural production. About 17% had cited the lack of capital in hiring agricultural machinery. About 24% said that they lacked capital in their effort to purchase fertilizer, while the same percentage also said that they lacked capital to purchase seeds.

Women have less access to and higher effective costs for information, technology, inputs and credit. Their productivity

is thereby depressed (Swchult, 1988). The explanations underlying these barriers to access relate to child bearing, time mobility, education, and an array of socio-cultural characteristics.

5.5 Access to extension services

Discussions with the agricultural officer confirmed that most women in Kipkaren Division did not attend agricultural barazas or demonstration fields, the possible explanation was that the women were shy and reluctant to speak up in extension meetings in the presence of male agents or men from the same village. Studies from the field also showed that most women are held up in their homes due to home chores including childcare and preparation of food to their family members.

These results supports the findings by Krogh (1988) and Evans (1989) which revealed that women lack confidence because of lower educational levels and less contact with the outside world. Men are seen as authority figures whose decision are to be followed. Male extension agents raised in the same cultural traditions often expect women farmers to follow their directions and do not encourage their questions.

Men are less likely to pass information along to women when crops or tasks are gender specific, which is the case in much of Africa. In Malawi for example, wives of agricultural extension

group members said their husbands rarely passed advice on to them. If they did, the women had difficulty understanding the advice second hand or did not find it relevant to their needs (Evans, 1989). Even if men were willing to teach their wives, they may simply not be familiar enough with an agricultural operation or crop to effectively transfer the information (Saito, 1990). However the number of extension visits a farmer was accessible to did not show any significant relationship to agricultural productivity and production in Kipkaren Division.

CHAPTER SIX: SUMMARY OF THE FINDINGS

6.1 Findings

It was found that the respondents ranged between 26-60 years of age. Majority of them were between 35-49 years of age, women whose spouses in most cases were not to be found in the rural areas. The average age of the women was 42. 30% of the respondents were 50 years and above.

Nearly all respondents were married (86.7%), with a few cases (6.7%) single, and widowed (6.7)

A woman's marital status was an important factor affecting the amount of land she was accessible to. Married women in female headed households were found to have access to the highest amount of agricultural land (5.2) acres. Widows ranked second with 4.5 acres while married women in male headed households were found to have access to 1.4 acres of land. Single women owned land. The average amount of land owned by single women was 1.25 acres.

The amount of land women had access to was found to be affected by the total area of land owned by the household, and the age of the women. Older women were found to be accessible to bigger portions of land. Women in families with smaller household land size were found to be accessible to smaller land sizes.

The gender of the head of household was found to affect women's total production and productivity. Married women in female headed households were found to have higher productivity than those in male headed households. Widows and the single women were found to have lower agricultural productivity of 13.75 bags of maize per acre and 12.5 bags of maize per acre respectively.

The level of purchased input was found to be a significant factor in increasing women's productivity and total production.

Land was acquired through various ways. Most of the land had been acquired through purchase. Some land had been inherited, either from parents or spouses.

With reference to control of produce, the analysis established that not all women controlled the produce. Some women (widows and the single) controlled the produce and the land.

The survey established that although most women had access to land, disposal rights were very much restricted. It was noted that widows and the single were in a better position to dispose land than the married. Widows were free to dispose of the land they had inherited from their deceased spouses, a part from a few cases when they had to seek the approval of an elder son or brother to the deceased husband.

The respondents had different opinions as regarding ownership of land. 24% felt that it is only men who should inherit land, 30% were of the opinion that both men and women should inherit land regardless of their marital status and sex.

However, women were described as the producers, the best managers of the property, bread winners and heads of families. Thus, they should not only have the right to use (access), but should have the authority to control and make decisions. Most respondents (50%) were for the opinion that women should have equal ownership rights with men since men are never at home most of the time. It is not easy to make decisions on land while absent from home. Land ownership would enable women to improve their economic and living standards.

6.2 Recommendations

Women constitute the backbone of rural economy in Kenya. It is therefore imperative that they be able to own land if they have to continue playing their role of improving their social-economic status and that of the rural masses, and therefore the whole nation.

There should be clear policies regarding ownership of property, particularly land in marriage. While recognizing the existence of different national laws and/or systems of land tenure, Government's at the appropriate levels, including local

authorities, should nevertheless strive to remove all possible obstacles that may hamper equitable access to land and ensure that equal rights of women and men related to land are protected under the law. The failure to adopt, at all levels, appropriate rural and urban land policies and land management practises remains a primary cause of inequality and poverty. It is also the cause of increased living costs, the occupation of hazard-prone land, environmental degradation and the increased vulnerability of urban and rural habitats, affecting all people, especially disadvantaged and vulnerable groups, people living in poverty and low income people.

Extension agencies need to consider that women tend to be less mobile and have less uncommitted time than men. The time and energy involved in providing the family with food, fuel, and water leave little time to participate in regular extension programmes and inhibit women's ability to, respond to opportunities. Women's dual roles and the relative inflexibility of domestic chores, such as family meal preparation, require that extension planners consider carefully the timing and scheduling of extension contacts to allow more women to participate.

Reallocation of resources that would increase extension and other support services to women farmers would improve the overall effectiveness of many policy programmes even where it

might be more costly to reach women (Russo et al., 1989).

Increasing school enrolment of girls will help boost the productivity of female farmers. But effective extension service can also help narrow the productivity differential between more and less educated farmers as a number of studies (including Schultz, 1988) show.

Another option of land reform is to give women reserve powers. These comprise two parts: one, that no renting out or sale of land is legally valid unless the wife's signature is on the contract; and that in the event of divorce or widowhood the wife obtains lifelong usufruct rights over part of the land. It should counter most of the negative effects of male inheritance without interfering with it. It should encouraged respect for wives' views on crop, and technology choices while at the same time not obliging women to attend meetings at different times. There is no chance in the foreseeable future that men will share housework and childcare equally with women. Asking women to share equally in the organizational aspect of farming would just be another burden (Palmer, 1985).

The government needs to design credit delivery mechanisms and lending policies that fully and fairly assess women's financial needs, assets and risk potential.

Methods must reflect the need for women's priorities and concerns to be articulated in public debate, research analysis, and in professional and political decision-making. There is need to develop methods that enable women to participate in decision-making and design at all scales.

Decision-making structures have to be reviewed, dismantled where necessary, and adapted into institutional forms that ensure the effective participation of women.

6.3 Conclusion

In the light of the forgoing analysis it is evident that women are not in control, of the proceeds of their labour. This is inspite of the fact they are the producers, small and large scale farmers, petty traders, professionals, domestic and factory workers. lack of ownership of the major means of production hinders women from being even more economically productive. Their participation in development is hindered. Lack of land ownership has therefore been cited as a hinderance to women's participation in economic development by these writers (Boserup, 1970; Gutto, 1987).

A woman should have the right to control the means of production and the produce as well. Women for instance, do not have much power over land when it comes to disposal or renting out of the land. Decisions are made by the man, sometimes in absentia, over land which women control, entirely.

As quoted from Ndengu (1995), Kenya is mainly an agricultural country. It depends on agriculture for exportation of cash crops, for foreign exchange earnings and for the production of food for local consumption. It is women who, provide most of the labour for these agricultural activities both on the plantations and the small parcels of land. It is only desirable that they control and own the property they work so hard to produce in order to get fully involved in the development of the country.

Laws relating to land ownership by women, however need to be improved a lot. There is for instance a contradiction between the customary and civil law. According to customary law, acquisition by a woman after marriage are considered part off her husbands property. Civil marriage on the other hand does not affect rights of spouses. On the other hand, the English married women's property Act of 1882 puts the wife and husband on a formal and mechanical equality. All in all, the study stresses on the need of fundamental changes in law to bring it in line with the existing and future structure, for example, social and political economy in Kenya.

The study concluded that, decision making and land ownership go hand in hand. A woman head of household, who owns land, can make independent decisions concerning land use control, allocation and its disposal as well. She can even use the income derived from the land as she sees fit. In such a case she may receive

credit from the financial institutions for her development. However, in situations of household but not land owner, she tends to be bound to a large degree to decisions of the man who has title to land, yet does not work on it.

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Appendix: Research Questionnaire
UNIVERSITY OF NAIROBI
DEPARTMENT OF URBAN AND REGIONAL PLANNING
M.A THESIS RESEARCH QUESTIONNAIRE

WOMEN'S ACCESS TO LAND AND AGRICULTURAL PRODUCTIVITY IN KIPKAREN
DIVISION, NANDI DISTRICT, KENYA.

Code Number

Contact person.....

Date of the interview.....

Plot number.....

Location.....

Name of farmer

1. Age of the respondent

2. Marital Status

- | | |
|-------------|--------------|
| (a) Married | (b) Divorced |
| (c) Single | (d) Widowed |

3. Who owns the land?.....

(b) What is the size.....(acres)

4 When did you acquire it?.....

How was it acquired

5. Has the farm been registered? Yes/No

(b) If no why

6. Do you own any other land in Nandi District? Yes/No

If yes, ask: what is the area and location of each plot?

When was it acquired?

7. Plot acreage location date acquired

a)

b)

c)

d)

e)

8. What amount of land is are you accessible to you?.....

9. Do you control the produce from the land? Yes/No

10. How much income do you get from the farm produce per year?

(Ksh).....

11. Do you rent land? Yes/No

If yes ask: what is the area rented?.....

12. Level of education.....

None

Primary

Secondary

College

University

(b) Have you had any other training? Yes/No

If yes, specify.....

(c) What is your main occupation?.....

(d) How much income do you get from your occupation per month (Ksh.).....

(e) What is your husbands occupation?.....

13. Do you make any decisions on the farm concerning agriculture? Yes/No

(b) If no why?.....

Are you accessible to any extension services? Yes/No

If yes, how many times per month?

14. What crops do you grow?

(Distinguish between local and hybrid maize, include fodder crops

Local

crop area

crop area

yield

a)b)

c)d)

e)f)

g)h).....

i)j)

15. What crops do you sell? Value of sale per year

16. What is the best yield you have obtained since starting to plant hybrid maize?..... bags/acre
 which year?(year in which the crop was grown)

17. What is the worst yield you have obtained since starting to plant hybrid maize? bags/acre.
 Which year?.....

18. What do you consider to be the average yield for your hybrid maize?..... bags/acre.

19. What are the major causes when the maize yield is poor?

20. How and who does the following

	by hand	ox plough	tractor	others
a) Clearing
b) Ploughing
c) Sowing
d) Weeding
e) Harvesting

21. If a tractor is used, ask:

Do you (a) own a tractor Yes/No

(b) Hire a tractor Yes/No

22. Do you use fertiliser?

(a) At time of planting? Yes/No

(b) Force feeding? Yes/No

(c) Top dressing? Yes/No

23. What type of fertiliser do you use?

(b) What problems do you face in acquiring

(i) Machinery for farming.....

(ii) fertilizer.....

(iii) Seeds.....

(c) What problems do you face in marketing your
crops?.....

24. What is the best time to plant hybrid maize?

25. What is the best spacing of the plants?

26. Do you use animal manure? Yes/No

27. Do you belong to a cooperative society? Yes/No

29. Do you have any access to agricultural extension services?

29. How many members of the family work on the farm?

a) all year round: adults children

b) Part of the year adults children

If (b) At what time of the year and for what purpose?

30. Do you hire any labour?

a) All year round: adults children

b) Part of the year: adults children

If (b) At what time of the year and for what purpose?

31. Do you have any other help on the farm apart from family and hired (labour) Yes/No

If yes, How many?

adults children

What work do they do?.....

When do You work on the farm?

32. Do you have any of the following

a) Current bank account

b) Savings account

c) P.O. savings account

d) Shares in a co-operative society in Nandi District

e) Shares in any other agricultural activity.

If no, in a, b, c, d, and e, why?.....

33. Have you received any loans for the improvement of your

farm? Yes/No

If yes.

Amount

Purpose of loan

a)

b)

c)

d)

e)

If no why.....

34. What do you think are the problems facing Nandi women farmers at present?

a)

b)

c)

d)

e)

f)

35. What do you suggest as solutions to these problems

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

36. Any comments.