

1. INTRODUCTION

The aim of this chapter is to provide a general overview of this study. In particular, the chapter deals with the reasons why I chose to focus on women and farming. The following key issues are, therefore, addressed: the research problem, research objectives and the rationale for designing a study on women, food production and sugarcane farming.

1.1 An Over-view

This study set out to analyse the cumulative effect of sugarcane farming on the role of women in food production in Bokoli location. In designing this study, the economic model was found to be useful in ordering and analyzing the data. This model stipulates that women in Bokoli location are engrossed in a wide range of activities. These activities include all agricultural processes such as cash crop and food crop production, processing, storage and marketing. This clearly indicates that women in Bokoli location are engaged in all facets of the food procurement system, ranging from land clearing, land preparation to planting, harvesting and distribution of food crops. In addition, the women actively participate in all domestic tasks which include fetching water from long distances, milling grain, gathering wood, child-bearing and child-nurturing. These activities are usually carried out betwixt and between the main agricultural activities. Similarly, the domestic tasks constantly demanding women's attention interrupt the main agricultural activities which they may be involved in at a particular time. Hence, the economic model informs us that women are involved in a wide range of activities which constitute remunerative economic production. Since these women are the central performers, it is through such activities that we can define their positions in their marital *dyads* as well as in the wider Bukusu Society.

1.2 The Socio-cultural Context of Women's Activities

All agricultural and domestic activities in Bokoli location are today being carried out in a pseudo-modern Socio-cultural context. In this context, the Bukusu family system is very authoritative and women are mere pawns in the game of patriarchy and kinship relationships. The Bukusu customary norms segments and discriminates against widowed and divorced women, and indeed all women, by disinheriting and depriving them of their economic rights (Dwyer and Bruce 1988). In addition, present employment preferences of the capitalist economy tend to confine these women "at home to assume full responsibility for farm management" (Gisbert et al. 1992:3). The same employment trend confines women in marginal roles in their marital dyads and in the Bukusu society. Therefore, this pseudo-modern setting provides an excellent opportunity to research on issues of women, food crop production and cash cropping. The broader empirical goal of this study is, therefore, to gauge the impacts of the processes of socio-cultural change and modernization on the status of women in Bukusu society today.

1.3 Research Problem

The area chosen for research was Bokoli location, Webuye division, Bungoma District (Maps 1 and 2). Bokoli location was ideal for my research focus since it is similar in many respects to other locations in Bungoma District. Specifically, in Bokoli location many households still rely heavily on subsistence farming for their livelihoods and survival. However, the type of subsistence farming undertaken in Bokoli location today is radically different from that of the past. This is because in the agrarian past farming was a mode of life. Today, it has been transformed into a form of income to complement cash cropping and off-the farm incomes. It is considered here that both cash cropping and off-farm incomes have been responsible for modifying traditional attitudes and ideology toward traditional farming practices in Bukusu society in Bokoli location. These three modes of sustenance have, nonetheless, been mutually reinforcing each other over time without bringing major complications to the households. However, in recent times, commercial farming and in particular sugarcane farming has

begun to bring about certain developments that have now led to very acute tensions between commercial farming and subsistence agriculture. One very serious outcome has been the subsequent overloading and overburdening of women with all sorts of farm responsibilities. The second serious consequence has been the fact that as more and more land is lost to cash crops, many women are forced to move to marginal, unproductive lands on which to produce food crops the products from which are not enough to provide adequate food security (Russo et al. 1989; Dey 1988; FAO 1985, 1988). Some women have even entirely lost access to such marginal and unproductive land thus propelling member of entire households into an existence of hunger and poverty.

The men in Bokoli location are constantly out-migrating to various urban centres within the Nation state of Kenya thus leaving a majority of their women behind. Even in cases where there have been seasonal out-migrations to commercial and urban centres within the district itself, it is the men who have been predominant. The particular attraction within the district to warrant male out-migration has been the need to provide cheap migrant labour on sugarcane farms as well as the search for salaried employment. In this particular scenario, the need to focus on women takes on an added significance. This is because women being the majority in Bokoli location are providing the bulk of the labour needed in both subsistence and commercial agriculture. This, in itself, means that the role of women in the production of food for their households has been adversely transformed.

Cash crops were first introduced in Bungoma district by the colonial administration in the 1920's. The first cash crop to be introduced was flat white maize (*Zea mays*). Today, hybrid maize which was originally introduced in Bungoma District in the 1960's, is the staple subsistence crop of Babukusu. The commercial farming of coffee began in the 1940's while the cultivation of tobacco and sugarcane farming started in the 1970's. Other cash crops which are cultivated today on a small scale include pyrethrum and tea. In addition, commercial manufacturing of paper and pulp products is extensively carried out in the district. All these activities have increased the commercialisation and

industrialisation of the district and as such they have caused drastic effects on the traditional Bukusu social and economic life, especially the subsistence mode of farming.

Of all the cash crops that are cultivated in the district today, none has led to a significant number of social and economic changes in many households as has the sugarcane crop. This crop is made to compete with food crops for land allocation, time, money, labour and farm inputs. In a majority of cases, farmers devote much more of their energies, time and money on sugarcane farming at the expense of food crops. Ironically, there have been serious and perennial delays in harvesting the sugarcane crop when it reaches maturity. This intimates that the sugarcane crop ties up land for long periods of time without indemnifying farmers in any profitable way. A very serious outcome of such delays is farmers' failure to receive their payments. Even after delivering the cane, farmers are usually never paid on time. This is an aspect of the cane crop that has created the "web of poverty" in many households in Bokoli location. The term poverty is not my own heuristic device conveniently adopted in this study to give a false description of the people in Bokoli location. This is because informants themselves frequently defined their own socio-economic status as an epitome of poverty. In effect, the emerging picture shows that many families cannot even dream of a meaningful livelihood from sugarcane growing. This is a lack of a significant subsistence which has transposed into exacerbated poverty levels, migration, wage labour and off-farm incomes for members of households for survival. Indeed, many families in Bokoli location have now forcibly been propelled into impoverished and marginalised socio-economic status by factors beyond their own immediate control.

Today, in Bokoli location, there has also been a radical shift in the original concept of agriculture. In the agrarian past, agriculture was a means of subsistence where both women and men grew their local staple crops using an exclusively subsistence technology. The produce was then controlled by both sexes, although women had the prerogative in the distribution of the major proportion of the produce and surplus.

Nowadays, many of the traditional staple crops as well as the newly-derived ones are all grown as a means of earning money based on wage labour and modern technologies. Additionally, the agrarian economy has been transformed into a male-dominated monetary and national economy in which cash crops are grown for "outside" sale while women provide an asymmetrical share of the required labour. One serious consequence has been that the previous prerogative of women controlling the major portion of the produce and surplus has been lost entirely to men. Therefore, this study attempts to document the extent to which the prerogative of women in controlling the family produce has been eroded. Since the Bokoli location is an ideal locale for research on issues now confronting women in areas of agricultural transformation, the result of this study should apply throughout Bungoma District (Gisbert et al. 1992).

1.4 Research Objectives

The main objectives of this study are as follows:

1. To look into the roles of women in both food production and sugarcane farming;
2. To see how women cope with the socio-economic constraints caused by the imposition of sugarcane farming; and
3. To determine the constraints and choices of commercial and subsistence farming on the status of women.

1.5 Rationale of the Study

This study is based on the fact that there is the monoculture of the sugarcane crop in Bokoli location today. This monoculture has in turn involved a total modification of traditional attitudes toward the production of food crops. However, the study recognizes that there are several key elements which remain unaltered. For instance, the household in Bokoli location is still the basic unit of subsistence production and women are the major players. Therefore, the underlying assumption, and the first important rationale, for this study

is the recognition that the great majority of food producers in Bokoli location are women. Furthermore, any transformation of agriculture has direct consequences (both negative and positive) on women, their dependents, and food production. This, I believe, is worthy of empirical anthropological investigation.

The second rationale is the recognition that today in Bokoli location, the farm on which women work is no longer an isolated unit of subsistence production. Rather, the farm is the beginning of a long chain in commercial agriculture. This chain is in turn shaped by forces operating at the regional, national, and international levels and women are the vital link in this chain with its world-wide configurations.

2. LITERATURE REVIEW AND THEORETICAL BACKGROUND

Introduction

This chapter is organised in two parts. The first part is a review of the literature on women and agriculture. The second part sets forth the specific theoretical orientation of this study. This theoretical framework is meant to situate the study in its broader socio-economic context.

2.1 Literature Review

Previous research on Babukusu has been carried out on a number of issues pertaining to socio-economic development and change. Such issues include self-interest and corruption (Hamer 1981), co-operative societies and socio-economic development (Ogutu 1985), local leadership (de Wolf 1977) agricultural modernisation (Buch-hansen and Kieler 1983), biological diversity and innovation (Juma 1989), rural poverty and impoverishment (Lavrijsen 1984) as well as social, economic, and political organisations and religious beliefs (Wagner 1970).

Unfortunately, none of these studies took women as the focus of analysis. The only recent exception is Nasimiyyu (1985) in which the author looks at the traditional roles of women in the Bukusu economy up to the end of the nineteenth century. However, even this particular study did not cover the issues dealt with in the present study.

The dearth of data on women has also been noted by recent ethnographers working in other African societies as well as in other Third World countries (Dwyer and Bruce 1988). Specifically, contemporary studies have tried to question the conventional "invisibility" of women in the ethnographic literature as well as to analyse how women have been affected by changes in their own communities (Fapohunda 1988; Guyer 1988; Munachonga 1988; Oboler 1985). Many of these studies maintain that the subordination of women

is a result of the capitalist organisation of production and use of labour. It is argued that capitalism leads to the separation between production and reproduction and, secondly, there is always a mutual alliance and accommodation between capitalism and patriarchy which perennially leads to women being confined to the home compound and to inferior jobs if employed in the formal sector. In other words, the daily lives of women in many ethnographic contexts is overly dominated by men in the form of fathers, brothers, husbands, employers and other authority figures in the community (Masini and Stratigos 1991).

Arguing from a socio-historical perspective, Boserup (1970) stresses that colonialism was solely responsible for undermining the traditional roles of women in food production. In traditional societies, and within marital dyads, all productive and reproductive activities were culturally regulated and specified under a commensurate system of division of labour by gender. Colonialism led to a breakdown of this system. First, men out-migrated from the rural areas to work on European farms and in the major urban centres, leaving women behind to care for the family and family production single-handedly. Second, cash crops and modern agricultural methods were introduced and the onus of production and provision of labour for these new crops fell on women. Thus, women and their children produced food crops and engaged in cash cropping, sometimes to supplement the meagre wages of their employed spouses (UN 1986; Mead 1976; Boserup 1970; Nelson 1979, Ehlers 1983). The outcome was an unwanted "overload" for women.

Many of the other socio-historical studies have specifically focused on the inter-linkages between women and development. Such studies have demonstrated that very few development projects have given genuine consideration to the total well-being of women or, specifically, to the role of women in food production. In fact, the general belief prevailing now among many social scientists is the fact that until the participation of women in agriculture is duly and properly recognised, the production of food crops will still remain stagnated (Russo et al. 1989). For example, Fortmann (1981:205) states that: "agricultural development policies seem to proceed from the assumption that either

agricultural producers are all male or the sex of producers is not a relevant factor... Women are seen as reproducers and consumers of both goods and social services. But their labour and their production are for all intent and purpose invisible."

It has been estimated that a majority (80%) of the direct beneficiaries and active participants in subsistence agriculture are males. Similarly, 90% of beneficiaries in commercial and industrial agriculture are men. The benefits which men enjoy at the expense of the women include education, training, decision-making, control of resources as well as access to credit facilities (ILO 1984; Beneria 1981; Traore 1984; Nelson 1979; UN 1985a). These studies therefore indicate that the needs and roles which women represent in the overall economy are masked and never addressed by development and policy makers. According to the United Nations, denying women access to resources such as land, education and services, ill-equips them to cope better in the economic sector and this will consequently lead to poverty in many households (United Nations Office at Vienna 1991). Furthermore, we cannot hope to fully comprehend the extent of economic and social changes in society unless specific attention is paid to the status and role of women in their marital dyads as well as in the wider society.

Nonetheless, a few development schemes have attempted to alleviate the domestic plight and drudgery of women. Such projects were aimed at developing those areas of life which are stereotypically considered to be the world or domain of women, for example, fetching water, providing fuel, processing, producing and storing of food. Even in such women-dominated activities it is manifested that the outcome has really been disadvantageous. Instead of benefiting women, both men and machines have taken over the traditional roles of women without providing them with alternate and viable productive roles (UN 1985b). For instance, men took over fish smoking and marketing in Senegal, South Asia, Sierra Leone, and Gambia (ILO 1984; Boulding 1981, Tinker 1981; Papanek 1981; Stevens 1984; UN 1985b); and handicraft production in San Pedro, Sacatepequez, Guatemala (Ehlers 1983). In some other cases, technological innovations aimed at alleviating the drudgery of women's

work have instead aggravated the problems. For example, an attempt at improving chicken-rearing in Zaire made women go to the river more times than they had been doing before (Nelson 1979). In other cases, technological innovations and economic adjustment policies have often displaced women from the workforce (United Nations Office at Vienna 1991).

Alternatively, where such schemes have successfully integrated women, it has only been the urban and elite who have benefited. The majority of rural women, "poorest of the poor" (UN 1985a:18), have had "disbenefits" (Nelson 1979) and their situations actually worsened. In considering the situation of rural women in Bangladesh, Abdullah and Zeidenstein (1982:3) recommend that: "programs directed towards women cannot accomplish their objective unless they address the practices of women, recognising what women want ... Nor, obviously, can they accomplish their objectives unless women directly participate in the direction the program will take."

The United Nations Development Fund (UN 1985a:7), on its part, assessed the situation of rural women in Third World Countries and concluded that there is a dire: "need to provide women with "bridges" from their subsistence/reproductive activities to a more conscious and controlled participation in the mainstream of their societies." One of these "bridges" is the support of existing, or creation of new, opportunities that can lead to the self-reliance and self-employment of women in impoverished rural areas. According to the United Nations Development Fund for Women, employment "... embraces, for the most part, income-raising group activities, including clothing factories, animal husbandry, pottery production, smoking and marketing of fish, handicrafts production and other small-scale industrial activities" (UN 1985a:19).

2.2 Theoretical Framework: Delocalization

The theory which was used in this study is delocalization. Delocalization from a social systems perspective or ecological approach has proved to be a useful instrument for describing different

transformation processes or impacts of "modernisation" on small-scale societies. That is to say, the construct is germane for an analysis of macro-level and micro-level interactions of modern with traditional, showing the general processes of socio-cultural change and the nature of integration of systems (see Ortner 1984; Poggie, J. Jr. et al. 1992; Stonich 1992; Poggie and Lynch 1974). This concept was coined by Pelto (1973) in his original ethnographic study of the Skolt Saami (formerly Skolt Lapps) of north-eastern Finland. He used the term to refer to a wide range of interrelated processes which incorporate small-scale (micro-level) societies into the capitalist systems and whose local manifestations are a loss of autonomy for the affected local system. He writes (p. 166): "de-localization summarizes in a single term a large number of interrelated processes that make up the main elements of modernization all over the world particularly in previously non-industrialized (and non-Westernized) societies."

Pelto's concern was to describe the impact of the adoption of the snowmobile in the management of reindeer herds. He shows how the Skolt Saami shifted their production processes of reindeer herding from the local autonomous sources (humans and reindeer sleds) to a dependence on outside sources (gasoline-powered snowmobiles). One concomitant result was that the entire Skolt Saami population was pushed "sharply into the direction of cash dependency and debt" (p. 137). Consequently, there developed social stratification and socio-economic inequalities in a society that had otherwise been largely egalitarian in nature.

This local dependence on the outside world has been described as "economic delocalization", a term which Poggie and Lynch (1974) extended to the economic realm and defined it as: "a chain of complex events that results when food, energy resources, and services which had formerly been provided within the local setting are transferred into market exchange commodities, most of which originate from outside the local area" (In Kilbride 1992:187-188).

Delocalization recognises that all members in a household are affected by processes of change. The processes are at times gradual while at other times they are sudden but nevertheless they affect all members of given households. In other words, delocalization affects and brings about profound changes in the economic, social and cultural matrix of small socio-political units.

According to Kilbride and Kilbride (1990) and Kilbride (1992), there are now in Kenya, for example, several modern forms of delocalization taking place because of the "ever-increasing connectedness and interdependency" (Bernard and Pelto, 1987) of the local human systems in Kenya to the supra-community or global systems (see also Poggie, DeWalt and Dressler 1992; Stonich 1992; DeWalt and Dewalt 1992).

Economic delocalization is one of these new forms and it has had a profound effect on "family structure and female power" (Kilbride and Kilbride 1990:13). Indeed, women, for example, in Bukusu society can never hope to achieve social power and status through their agricultural labour and other traditional tasks ascribed to them because of economic delocalization.

Delocalization was thus significant for this project since it emphasises the loss of local autonomy (resources), dependence on imported ideologies and technologies and lastly, transformation of society. And for the study region, all these resulted when the small-scale and undifferentiated world of Babukusu was incorporated into the world economy from the end of the nineteenth century with the coming of colonialism. It was, therefore, hoped that the theory of delocalization could be used to investigate the role of women in food production as well as the impact of this incorporation and the loss of independence in Bokoli location.

3. METHODOLOGY

Introduction

This chapter gives a brief summary of the research activities which the author engaged in during the tenure of research in Bokoli location. In particular, it focuses on the study population, life history approach, data collecting techniques and project personnel.

3.1 Study Population

The focal unit of analysis in this study consists of all households¹ in Bokoli location. The main rationale for choosing the household is because of the fact that in Bokoli location, the household is the land-owning unit today and, therefore, it is the one which determines contemporary land utilisation. It is thus at the household level that the most important matters pertaining to land allocation, food crop production, food security, cash cropping as well as labour and time schedules are decided. It is also at the household level that all major decisions concerning income and income-generation are deliberated and decided. Finally, all households in Bokoli location rely almost entirely on the land to provide sustenance, income and other employment opportunities. Therefore, any changes in the use of the land at household level provide us with valuable insights into issues that concern general agricultural, food production and the status of women in Bokoli location. Indeed, the important change in land use patterns very fruitfully inform us about how the spread of commercial farming, specifically the introduction and spread of sugarcane farming in recent years, has fundamentally been altering traditional farming methods and food production.

In Bokoli location the household² is headed by either a male or female. This indicates that, at least, in each household an adult of either gender is always present at one time or another. Also, the household consists of unmarried children and one other person directly or indirectly related to the household head living there. The average age of the household head in Bokoli location is 48 years and, in most of the cases (N=175), the head of such a household³ is the male. There are also *de facto* female-

headed households (N=25), however, *de jure* female-headed households were not encountered in the course of the fieldwork. *De facto* female-headed households were defined as those where male spouses have out-migrated out of the marital homes in search of wage employment and actually stay away for more than six months in a year. Also, if the woman in the household stated that she was the head of the household because she made all the decisions, despite the presence of the husband, such a household was defined as being a *de facto* female-headed household. The basic characteristic of a *de facto* female-headed household is the fact that the woman has no legal rights to the household and clan land because of the Bukusu patriarchal system. In this kind of system it is normative for all legal rights to any clan land of a household to belong to the husband and his male children. The woman in a household is only endowed with custodian and usufruct rights which terminates upon her death or upon divorcing or separating from the husband. However, for all intents and purposes, the manager of the household and, hence the land, is the woman. Given the inheritance laws and the patriarchal system found in Bukusu society, *de facto* female-headed households are expected to be predominant in the rural villages of Bokoli location. On the other hand, *de jure* female-headed households are those where the women in a household has legal rights, in the form of a title deed, to the land independent of the spouse. Such female-headed households are expected to be few or rare in the rural villages of Bokoli location.

3.2 Life History Approach

The major approach used in this study is the life history methodology. The concept of life history implies eliciting narratives from an individual in which these individuals describe and comment on their lives in whole or in part. Usually the data that one elicits is retrospective "and not the corroborative evidence implied by the term *life history*" (Tagg, 1985). This reconstruct system, by informants, provide vital subjects, normative accounts because it is my precept that retrospective data is important in ethnographic discourse. The importance of this approach is its stress on showing how the roles,

activities and status of an individual (at the micro-level) are related to socio-cultural, environmental and historical changes at the macro-level (Masini 1991; Kertzer 1991).

Methodologically, the strategy of the life history approach "moves from a format in which the informant directs the structure of the narrative and selects elements to be included in the life history, to a middle-range format in which the researcher asks the subject on what appear to be salient experiences or events mentioned by the subject, to a perspective in which the researcher's notions of what is important direct inquiry" (Rubinstein, in Press). The narrative accounts of informants form the case studies presented later on in the study. The other data were collected by the following techniques:

3.2.1 Participant observation

This method was used in observing and recording information on farming practices and activities. The method furnished this study with insights and clues necessary to formulate necessary interview questions. Also, this technique was used to check and evaluate the information given by the key informants.

In this method, researchers participated in and asked questions about farming activities so as to gain an overall view of the farming situation in Bokoli location. The method, therefore, set the stage for the more discriminating inquiry that followed later. Also, through this method, researchers gained enough general and background information to investigate in detail specific areas of interest later on.

3.2.2 Structured Interview Schedule (questionnaire)

The interview schedule (questionnaire) consisted of both open-ended and close-ended question. In the open-ended questions, the informant responded freely whilst in the close-ended questions, the informant was required to chose from a set of categories. The field research was guided by a research schedule (instrument) which encompassed an array of data categories, including methods and practices of production, costs of

production, adoption of modern technology, alternative economic strategies, attitudes concerning food production as well as different crops, and lastly food preferences. The important question addressed was how these variables affect women in the role of food production. The research guide also focused on the status of women relative to education, sexual division of labour, land use and sizes, crops grown and harvested, crops sold and/or stored, livestock, material possessions, income and expenditure patterns. Lastly, the method was used to conduct a basic census of the research community. The questionnaire instrument was designed after conducting initial archival work and also after my first visit to the research location.

3.2.3 Key Informant Interviews

This research technique focused mainly on the elderly women (above 50) years as well as other knowledgeable people. These were informants who were judged to possess knowledge concerning the introduction of commercial farming in the district. They also provided information about the beginning of commercial crops for instance, coffee in the 1940's, hybrid maize seed in the 1960's, tobacco and sugar cane in the 1970's. Many of them were young when coffee was first introduced. They have seen and witnessed how cash crops have changed their subsistence world, the world in which they were born and grew up, and in many respects have resulted in status reversals between men and women (Cattell, 1989). Therefore, this cohort of informants provided valuable information concerning the impact of cash cropping on subsistence agriculture. It is through the memories (recall power) of these informants that researchers came to learn about commercial agriculture. In fact, to a very large extent the key informants assumed the significant role of educators to all the members of the research team. Other key informants were those people involved in agricultural extension work as well as development and community affairs in the research community. These informants provided valuable information about government projections and expectations concerning subsistence and commercial agriculture in the research area.

3.2.4 Archival and Library Research

Archival work identified several documents dealing with various aspects of Bungoma District in general and my research location in particular. Also, I located various books written by colonial educators, missionaries, medical officers, police officers (then called the Kenya Police), military officers (then known as King's African Rifles), livestock officers, explorers and other colonial administrators. These old colonial ethnographies provide valuable background information. These include Thomson (1885), Hobley (1887, 1898, 1902, 1903, 1929), Johnstone (1902), Dundas (1913), Wagner (1939, 1970), Foran (1962), Anson (1899), Jackson (1930), and Moyse-Bartlett (1956). Library research also identified various books, articles, Dissertations and Theses dealing with various aspects of Bungoma and Babukusu.

3.3 Data Analysis Techniques

The data analysis technique was a mix of both quantitative and qualitative methods. Qualitative analysis was used to analyse those aspects of the data which are descriptive and hard to quantify. On the other hand, quantitative techniques, such as tables, percentages, averages were used to analyse those aspects of the data which are quantifiable.

3.4 Project Personnel

The field research was conducted by a team of four researchers, one principal researcher, two male and one female research assistants. The author had the overall responsibility of the research project, the interviews, data analysis and writing up of this final report. The requirement for one to be a research assistant was that she/he had to be familiar with farming practices in the location. Also, she/he had to be familiar with the local enthronelement and the Bukusu culture as a whole. And lastly, the research assistant had to be a university student. These research assistants were identified with the help of local village elders and teachers. The main task of these research assistants was to

identify and recruit potential informants as well as to collect the demographic profiles. In addition, they assisted in administering the questionnaires. All the interviews were conducted in the local language of Lubukusu while English and Kiswahili were only useful when interviewing non-Bukusu government officials.

4. GEOGRAPHICAL SETTING

Introduction

The main purpose of this chapter is to provide the reader with basic geographical data concerning Bokoli location. Specifically, this chapter deals with the geographical setting of the location, vegetation, climate and agro-ecological zones. It therefore serves a very useful and necessary function since it basically describes the physical milieu under which women carry out their agricultural activities in addition to their other domestic tasks. This discretion is thus a bridgehead and mirror into the daily activities of women in Bokoli location without which we cannot hope to fully apprehend nor understand these activities.

4.1 The Geographical Setting: the Research Site

Bokoli, a location in the division of Webuye, Bungoma District, is situated 20 km from Bungoma town, 10 km from Kimilili township and 15 km from Webuye township. These three are the main urban centres in the whole of Bungoma District. This location is one of four which make up Webuye Division and the other three locations are Webuye Town, Ndivisi, and Misikhu. The location is bordered to the east by Ndivisi location, to the west by North Bukusu location, to the south by Webuye town location, to the south-east by East Bukusu location while to the north are Kimilili and Misikhu cloaking (Maps 2 and 3).

The location lies approximately between 1,500 - 1,950 metres above sea-level and has a total area of about 21,800 hectares with a density of 235 persons per square kilometre. Out of the total area of land, the non-agricultural land (the unsuitable steep slopes, roads, homesteads, and

rivers) constitute 4,300 hectares while the suitable agricultural land is 17,500 hectares.

The people who live in this location are Babukusu, a sub-group of the larger Abaluyia supra-community. According to the 1979 census, there were a total of 51,313 people living in 7,336 households in Bokoli location (Kenya 1981). However, Jaetzold and Schmidt (1982), basing their data on the estimates of the Central Bureau of Statistics, report that there were 7,308 households during the same period. Nonetheless, according to the Central Bureau of Statistics, a family of a typical farmer consists of 3.70 adults above 15 year, 2.01 children below 15 years of age and 1.10 other relatives (Kenya 1988). On the other hand, the number of persons per household in Bokoli location is 6.98, a slightly higher figure compared with 6.36 persons per household for the entire district. The agricultural land per household is 2.39 hectares while the agricultural land per person is 0.34 hectares (Jaetzold and Schmidt 1982). The sex ratio in Bokoli location indicates that there were 24,888 males and 26,425 females. These figures are based on population census of 1979 (Kenya 1981) which indicate that most of the population consists of females implying that women play a critical role in the economic development of Bokoli location.

4.2 Vegetation

Much of the original vegetation cover in Bokoli location has now almost been cleared, mainly by agricultural activities, cutting wood for charcoal, firewood, fencing building and also through over-grazing. The original vegetation population consisted of *Vernonia croton* forest and montaine forests at higher altitudes (Ominde 1971). The vegetation at present consists of elephant grass, *Pennisetum purpureum* and star grass, *Cydon dactylon*. This vegetation is associated with a dark-red friable soil. This type of soil consists of dark brown sandy loams which have a carbon content of only 2 percent. This type of soil supports a stunted and truncated vegetation, particularly protea trees, *Combretum savannah* woodland and a variety of grasses such as *Loudentia arundinacea*, *Andropogon dummera* and *Setaria trinerva*. In areas where

the soils are more lateritic, the vegetation cover is dominated by *Cymbopogon afronardus*, lemon grass.

4.3 Climate

The climate is on the whole pleasant with afternoon hours sometimes hot but never oppressive. This is because of the presence of a constant light cool breeze. The evenings and nights, on the other hand, are comparatively cold. The mean annual temperature range from 21-22 degrees Celsius. On the whole, a typical day starts with blue skies and brilliant in the east which is then followed by a short heavy downpour usually accompanied by violent thunderstorms. Afterwards the sky clears up, giving way to a calm and pleasant evening (Wagner 1970).

4.4 Rainfall

The rainfall received in Bokoli location is characterized by two periods which follow a strong seasonal pattern with some minor variations from year to year. Towards the end of March the south-eastern monsoon trade winds, originating in the Indian Ocean, take over from the north-east trade winds. The south-east trade winds create a high pressure and consequently deposit rain over the whole of Kenya. This is the major rain season which occurs from March to July. The second rain season starts in August and continues into October. The average annual rainfall received in the location ranges from 1,200 - 2,000 mm.

The dry spell occurs between December and February, although it is not unusual for the area to experience localised showers during these dry months. According to Hobley (1897:363), "the dry season practically commenced about the close of December, and continued until the middle of March, while from March to December it rained with regularity." Also, during this dry spell there is a dry easterly wind which originates from the Nandi escarpment and blows the whole day. This dry spell is brought about by the north-east monsoon trade winds which essentially originate from the Arabian Peninsula and cross the Sahara desert on the way down to East Africa.

4.5 The Agro-Ecological Zones

Bokoli location has two important agro-ecological zones. According to Jaetzold and Schmidt (1982), an agro-ecological zone (AEZ) is a geographical area which can be defined on the basis of its moisture supply, differences in the soil patterns as well as the associated crops and livestock it can support. Accordingly, the agro-ecological zones which have been defined for Bokoli location are the Upper Midland Zone (UM) and the Lower Midland Zone (LM) both of which are further subdivided into Upper Midland and Lower Midland sub-zones.

4.5.1 Upper Midland 1 (UM 1)

The total area encompassed by this agro-ecological zone is 3,600 hectares and it has been defined as being typically a Coffee and Tea Zone (Jaetzold and Schmidt 1982:318). The first rains usually begin in early March while the second rains come sometime in early August. Similarly, this zone is at times characterised by the presence of intermediate rains. The early rains enable people with swamp land, particularly along rivers Bokoli and Kuywa, to plant early-maturing hybrid maize and beans. People could also grow early maturing sorghum and finger millet, with a maturation period of three months, during February and March to boost their food supply, but unfortunately, many people have tended to neglect these two crops. These two crops are very drought-resistant and they can also be very suitable alternatives in the event of the sugarcane crop not being harvested as well as if there is a poor harvest of the hybrid maize.

The type of rainfall regime has actually determined the type of cropping season prevailing in this particular agro-ecological zone. Specifically, the cropping season here is a very long one and which can be subdivided into a medium to long and medium to short seasons. The annual average rainfall is between 1,620 - 1,800 mm, while the annual mean temperatures range from 21 - 18 degrees Celsius and it has an altitude of between 1,500 - 1,900 metres above sea level. This zone has the potential to support a wide variety of subsistence crops. Some of the crops

include maize and, specifically, the following hybrid varieties: H511, H512, H612, H614, H622, H632 and H7801. Other subsistence crops include finger-millet, sweet potatoes, bananas, sorghum, tomatoes and onions. The cash crops which are supported by this zone include hybrid maize, Arabica coffee, sunflower (like Comet and HS301A), and tea.

4.5.2 Upper Midland 2 (UM 2)

This zone has a total area comprising 4,900 hectares and, according to Jaetzold and Schmidt (1982), it is a main Coffee Zone. The cropping season is analogous to the one obtaining in the Upper Midland 1. The Zone, therefore, has a very long cropping season which can be differentiated into a medium to long and a medium to short cropping season (Jaetzold and Schmidt 1982). The first rain season normally starts at the beginning of March while the second rains at the beginning of early August. This agro-ecological zone ranges in altitude from 1,500 - 1,800 metres above sea level with mean annual temperatures of 21-18 degrees Celsius and an annual average rainfall of about 1,350-1,700 mm. This zone supports a wide array of agricultural products. Some of the crops which are grown include a wide variety of hybrid maize such as H511, H513, H612, H614, H622 and H632. The other crops consist of cabbages, finger-millet, beans, sweet potatoes, sunflower (for example, HS301A and Comet), onions, tomatoes, Arabica coffee, bananas, wheat and barley.

4.5.3 Upper Midland 3 (UM 3)

This is a zone in which both maize and coffee can do very well and it has subsequently been defined as a Coffee and Maize Zone (Jaetzold and Schmidt 1982). It ranges in altitude from 1,500-1,800 metres above sea-level. The annual mean temperatures are between 21-19 degrees Celsius with an annual average rainfall of between 1,200-1,600 mm. The first rains also begin in early March while the second rains in early August. The total area of this zone is 900 hectares and it supports the following crops: hybrid maize (H612, H614, H622 and H632), finger-millet, high altitude sorghum, beans, sweet potatoes, sunflower, Soya beans,

cabbages, kales, onions, tomatoes, Arabica coffee, bananas, wheat and barley.

4.6 Lower Midland Zone

The Lower Midland Zone in Bokoli location is represented by the Lower Midland zone 1 and Lower Midland zone 2.

4.6.1 Lower Midland 1 (LM1)

The Lower Midland 1 is actually the main sugar cane zone. The cropping season here is similarly long and this is normally followed by a medium one (Jaetzold and Schmidt 1982). The altitude in this zone ranges from 1,350-1,500 metres above sea level with annual mean temperature of 22-21 degrees Celsius and annual average rainfall of 1,600-1,800 mm. The first rains normally begin in February and the second rains come towards the end of August. The crops which can be grown in this particular zone include white sorghum, sweet potatoes, sunflower (like 252, and HS345), Soya beans, sugarcane, kales, cabbages, cassava, finger millet, beans, pigeon peas, cowpeas, yellow yams, onions, bananas, tea and Robusta coffee. The hybrid maize varieties which can be grown in this zone are H511, H512, H622 and H632.

4.6.2 Lower Midland 2 (LM 2)

This zone is described as a marginal Sugar-cane Zone (Jaetzold and Schmidt 1982) and the zone covers an approximate area of 8,100 hectares. It ranges in altitude between 1,350-1,500 metres above sea-level with annual mean temperatures of between 22-21 degrees Celsius. The annual average rainfall is between 1,400-1,650 mm. The first rains usually begin in mid-February while the second rains begin towards the end of August. The cropping season in this zone is of three types: the first is a long cropping season which is followed by weak medium to short season. The second is a long to medium cropping season followed by a weak short to medium season, and the third is a medium to long cropping season followed by a short to medium season (Jaetzold and Schmidt 1982). These differences in the cropping seasons have

influenced the types of crops which can be grown in the zone. But generally speaking, the crops which are grown here include sorghum, sweet potatoes, sunflower (such as 252, HS245, 511 and 513), soya beans, onions, cassava, hybrid maize varieties such as H511, H513, H622 and H632, finger-millet, pigeon peas, cotton, bulrush millet, bananas, tobacco, cowpeas, sugar cane, and *Robusta* coffee.

5. THE ROLES OF WOMEN IN FOOD CROP PRODUCTION

Introduction

This chapter deals with the different roles of women in food crop production in Bokoli location. Ethnographic data gathered in the field are presented, and particularly the issues which are dealt with here include women in the economy, crop rotations and mixed cropping, ploughing, planting, weeding, harvesting, traditional crops and dishes as well as home brewing.

5.1 Background: Women in the Economy

Early ethnographies suggest that in the agrarian past Babukusu had evolved an economy which was balanced between cattle rearing and subsistence farming. Describing this type of economic symmetry in the late 1890's, Hobley (1897:365) observed that Babukusu were "... a numerous people, possessed of considerable pluck, great cultivators and cattle breeders." This view is shared by an extensive archival source which has asserted that Babukusu were "apparently formerly more addicted to stock-keeping than agriculture". Writing in the 1930's, Wagner (1970:12) concluded: "although, no mean agriculturalists, the chief concern and pride of their men is cattle keeping, and they have, in fact, been influenced in many ways by the cattle customs of their nomadic neighbours."⁴

On the other hand, the cultural traditions of Babukusu relate that in the agrarian past Babukusu subsisted primarily on livestock, livestock products and agricultural produce. In fact, many informants narrated

that in the past the food of Babukusu consisted of meat, milk as well as porridge, a traditional dish called busuma (or *ugali* in *Kiswahili*) and beer all of which were prepared from finger millet and sorghum. Additionally, the traditions report that regular cultivation of subsistence crops started either in the sixteenth or seventeenth centuries at a place known as Bukaya which is located in the present Republic of Uganda. Intensive subsistence agriculture in Bukusu territory began in earnest in the 1920's (Wagner 1970).

Today, Babukusu who reside in Bokoli location, practice intensive mixed farming in varying proportions. Their traditional staple crops continue to be finger millet (*Eleusine coracana*), sorghum (*Sorghum vulgare*), simsim (*Sesamum indicum*), green grams (*Vigna aurens*), sweet potatoes (*Ipomoea batatas*), beans, ground peas, and bananas (*Musa paradisiaca*). The importance of each crop in the daily lives of these people varies from household to household. Also, the hectares allocated to each of these traditional staples varies. It would, however, appear that the importance of each of these crops depends ultimately on its labour requirements, profit returns as well as the authority and occupation of the man as head of the household. In most part, these traditional staple crops are perceived to be unprofitable since they provide low returns to labour per unit time compared with such pure cash crops as sugarcane and coffee. Therefore, most households have tended to eschew the cultivation of indigenous staple crops.

5.2 Land use in Bokoli Location

In Bokoli location, the household owns an average of about 8.53 hectares of land. A monogamous household (N=119) owns a total of 6.23 hectares. Out of this total hectarage only 4.25 hectares were being tilled. On the other hand, a polygynous household (N=81) owned an average of about 12.84 hectares and 6.5 hectares were being cultivated.

The ownership of land in Bokoli location is a clear mirror of the general ownership of land in Bungoma District. This is because most land holdings in the entire district are generally small. It has been estimated

that the smallest land-holding unit in the whole of Bungoma District is 2 hectares (Kenya 1984). Moreover, these small land-holdings are constantly getting smaller and smaller. For instance, in 1983 the number of households with such holdings in the whole of Bungoma district was estimated to be 49,973 which rose to 89,392 in 1989 (Kenya 1989). This increase is partially due to the traditional system of land tenure which requires that a man should partition land among all his sons. This increase is also partially due to the ever-increasing growth in population. For instance, in 1962 the population in Bungoma District was 241,900, rising to 345,226 people in 1969. This was a growth rate of 5.2% per annum. Again from 1969 to 1979 the population rose to 503,935, an increase of 158,709, or a growth rate of 3.85% per year. This is one of the highest growth rates in the country; in fact, it is higher than the Western Province rate and slightly above the national growth rate of 3.8% for the same period (Kenya 1971). Between 1979 and 1988, the population was expected to increase with an estimated average growth rate of 4.2% per annum reaching, 731,411 people in 1988 (Kenya 1989).

The small land holdings which are present in Bokoli location do not provide adequate incomes to households. It is estimated that, for the whole district, small holdings provide less than Kshs. 2,000 per family per year⁵ and produce even less than the required amount of food grain to feed the family. For a family in the district to adequately feed and clothe itself, what is needed is a minimum of 0.9 hectares regularly cultivated on an annual basis. Secondly, cultivation should not be confined to the monoculture of one crop; for example maize in many parts of the district and sugarcane in the sugarcane growing zones. The monoculture of maize has failed to ensure that there is sufficient food supply for the family as well as adequate surplus that could be used to bring in some cash income (Kenya 1989). Arguably, the monoculture of sugarcane could prove to be even far more catastrophic than the monoculture of maize farming. This is because while maize can be consumed as a food when it is green or dry, sugarcane can only act as a thirst-quencher. Adequate food supply and surplus can only be achieved

in Bokoli location if farmers undertake intense multi-cropping. This is because crops mature and are harvested at different seasons. It also means that farmers can maximise their labour requirements on a particular crop given its seasonality in a harvest year without necessarily expending all the time and energies on one crop. In the event of a catastrophe, a farmer can always rely on a different crop for food supply and survival.

5.3 Ploughing in Bokoli Location

Table 1: Modes of Ploughing in Bokoli Location, 1993-1994

	Hoe	Plough	Tractor	Total
Least Desirable				
Number	197	2	1	200
Percent	98	1	1	100
Most Desirable				
Number	168	16	84	200
Percent	84	8	42	100
Household method				
Number	13	156	31	200
Percent	6.5	78	15.5	100

Source: Interviews in Bokoli location, 1993-1994

Table 1 compares modes of land ploughing by different households in Bokoli location. As one would expect, 98 percent of the households (N=197) regard the preparation of land using the hoe to be very undesirable and 84 percent (N=168) perceived the use of tractors to be the most desirable method. However, people in Bokoli location primarily till their land using the oxen plough; 78 percent (N=156) reported that they personally used the plough, 15.5 percent (N=31) the tractor while 6.5 percent (N=13) the hoe. Tractors are highly desired as they make ploughing an easier task, however, not all households can afford to hire tractors. It costs approximately Kshs. 1,200.00 and Kshs. 600.00 to plough 0.405 hectares of land by tractor and plough respectively in Bokoli location today.

The plough is pulled by a team of oxen. In a majority of cases poor families use a team of two oxen while relatively well-to-do families use

as many as six oxen. Farmers also pool their farming resources and in such cases one individual may provide the plough, another yokes and chains, and still another the team of oxen. These farmers plough each other's farms on a rotational basis. Once all the farms of the pooling members are duly tilled, such farmers hire out their services to other people in the research community. The cash raised this way is then disbursed equally among the members of the ploughing conglomeration. Households without their own teams of oxen usually hire from the neighbours, friends and relatives. Similarly, those households who lack the money for hiring oxen have to depend on the good-will and generosity of their relatives, friends and neighbours to help out. For such households, planting is normally delayed since they have to wait until oxen-owners have completed ploughing their farms before the oxen are released. This is typical with *de facto* female-headed households who lack both the instruments of ploughing; or if they do own the ploughing instruments, they lack a male member in the household who can utilise such instruments for their benefit. A comparable scenario exists in Botswana where it is apparent that *de facto* female-headed households are similarly discriminated against and delayed in farming by males (Duggan 1985).

Oxen ploughing in Bokoli location is predominantly the work of men and young boys. However, women also participate a great in this farm activity. This is the normal case with newly married couples or *de facto* female-headed households who may not have any other male member around the homestead. In such cases the woman in the household will be expected to help the husband or any other adult members in ploughing the household fields. This is because oxen ploughing invariably requires one person to lead and guide the oxen and the other to hold the plough.

Early ploughing starts in December when the ground is still humid from the preceding short rains. If a farmer delays until January the ground becomes too compact and, therefore, the plough essentially becomes ineffective. Accordingly, the farmer has to await the long rains in April before breaking the ground. During the first ploughing, the

ground is broken up and left until the onset of the long rains. Once the rains arrive the ploughed field is harrowed using oxen; a team of two oxen usually suffices for this job. The farm is then ploughed for a second time and subsequently planted.

5.4 Planting in Bokoli Location

Table 2 is a schematic representation of the work cycle covering the agricultural activities of the people in Bokoli location. The table shows the season when the fields are prepared, crops planted, weeded as well as harvested.

Table 2: The Agricultural Cycle in Bokoli Location

Crop	Jan-Feb	Mar-Apr. May	Jun-July Aug.	Sept-Oct. Nov./Dec.*
Maize	Ploughing Marketing	Planting Weeding Thinning T/dressing		Harvesting Marketing Ploughing
Beans	Ploughing	Planting Weeding	Harvesting Marketing Ploughing Planting	Weeding Marketing Ploughing
Sorghum	Ploughing Planting	Weeding	Harvesting Marketing	Ploughing Marketing
Millet	Ploughing Planting	Weeding	Harvesting Marketing	Marketing Ploughing
Potato	Harvesting	Ploughing Planting Weeding	Harvesting Ploughing Planting Weeding	Weeding Harvesting
Sunflower	Ploughing Marketing	Planting Weeding	Ploughing Planting Weeding	Harvesting Marketing
Cassava	Weeding Harvesting	Ploughing Planting Weeding	Ploughing Planting Weeding Harvesting	Harvesting Weeding
Coffee	Ploughing Making holes Planting Manuring Pruning	Weeding Mulching Manuring Mulching Manuring	Picking Weeding Weeding	Harvesting Pruning

- Ploughing is only done in December: T/dressing = top dressing;
Source: Interviews in Bokoli location, 1993-1994

Planting in Bokoli location is done by women, men and children, however, much of the planting is done by the women. Most planting is usually undertaken after the second ploughing. All the crops are planted in much the same way as in the traditional past. Maize, beans and sunflower are planted in evenly-spaced furrows two meters apart, while crops such as sorghum and millet are broadcast. Beans may also be broadcast if not inter-cropped with maize.

In a polygynous household the husband allocates portions of his land to his wives to plant beans which are to be reaped and consumed by the wife and her children. The man also allocates land for the cultivation of cassava, bananas, finger millet, sorghum and vegetables. It is the duty of the wife to acquire the seeds or tubers for planting such crops. In many households members were, for instance, recycling beans during planting time as this was cheaper than buying new bean seeds. Today, the maize yield is regarded as belonging to the husband whose duty is to distribute it to his wives for household use as well as selling some of it when the need arises. On the other hand, the bean harvest belongs to the wife and is not for sale but is supposed to be used for cooking and subsequent plantings.

All the households in Bokoli location use oxen ploughs to make straight-lined furrows for planting maize. A team of oxen makes furrows while members of the farmers family and/or hired hands follow behind sprinkling fertiliser in the furrows. Hiring farm labour is rare for many of these cash-starved farmers in the research community. The maize seeds are next deposited in these furrows at an interval of approximately one meter apart. After planting all the tilled hectares, the oxen are again used to cover the planted seed with soil.

5.5 Weeding Today

Data indicate that weeding of food crops in Bokoli location is the responsibility of women. This is particularly the case with *de facto*

female-headed households where men are absent for a variety of reasons. In households where the man is present, data reveal that the woman was spending both the morning and afternoon hours in the field while the man was in the fields only during morning hours. A majority of the men were spending their afternoons in non-farm activities such as drinking *busaa* and *chanq'aa*. Normative accounts of informants further show that many women in Bokoli location did not even have hired labour because of lack of money to pay for such labour. Similarly, these women did not have the benefit of the labour and assistance of their children because weeding is nowadays performed when the children are at school. Children only help their mothers weed in the evenings after school or during weekends. In some other cases this is not even possible because children come out of school very late in the evening while some of them have to attend school even over weekends. According to the World Conference on Agrarian Reform and Rural Development (WCARRD), there is a dire need to reduce the household drudgery of women so that they may also "use their time to participate more in economic, educational, and political activities" (FAO 1988:1).

Clearly, weeding has been transformed by the process of delocalization. This is because old ethnographies concerning Babukusu often suggest that in the past, women, men and children spent the same number of hours in weeding food crops. This activity was never undertaken by one gender or age group because weeding was conceived of as a communal responsibility. It was also a great social activity which interwove, and brought together, diverse relationships to focus on one common task in the spirit of cooperation and reciprocity. It was an event as well as a time for helping and supporting a kinsperson, friend or neighbour. Thus, one participated in weeding because one would similarly be helped when it was one's turn. Above all, weeding was a time for people to reproduce and reinforce their social and ideological relationships since these gave meanings to the world in which they lived. Wagner (1970:28) aptly describes the sociality and reciprocity which typified weeding. He writes that weeding is: "usually done in the form of 'beer work': Several neighbours come or are summoned to help

and as a reward are offered kamalwa ke khukhwakila, the 'beer of weeding' (My underlining).

5.6 Harvesting

Nowadays in Bokoli location the bulk of the agricultural labour needed for harvesting food crops is provided by women. Before harvesting women perform other routine domestic chores such as milking cows, fetching water, gathering firewood and feeding household members. Harvesting usually begins sometime after sunrise and continues into the evening hours. Food is consumed on the farm where it is sometimes prepared by women.

The harvest is still stored in granaries, bibiaki (sing. sisiaki). In polygynous homesteads each wife has her own personal granaries in which to store the produce and which is supposed to be consumed by her husband and children. Such food crops are rarely meant for sale. Ideally, it is the responsibility of the wife to determine the consumption and distribution of such crops but in most cases it is the men who have the ultimate power and control. In various households it was evident that there were also granaries which stored crops meant for sale, although, some of such produce was similarly used for home consumption by the household. These granaries were also usually under the direct control of the man as the head of the household. In the agrarian past, men also had granaries of their own in which they kept the whole of the sorghum harvest and a part of the millet. This finger millet could be disbursed to the wife (wives) in the event of a shortfall in the granaries of the wife (wives). On the other hand, the sorghum harvest was regarded as the "crop of men" and it was from it that sorghum beer was prepared by a woman for her husband to consume with his friends, relatives and neighbours.

Data also intimate that in the agrarian past the harvesting of finger millet and sorghum was imbued with great symbolism. The symbolism was on two interrelated and vital levels. First, Babukusu associated the agricultural cycle of finger millet and sorghum crops with women, their fertility as well as their procreation powers. Mature millet and sorghum

were believed to be dangerous to women who were still of childbearing age. Thus, it was ritually dangerous for menarche women to engage in the actual harvesting of finger millet and sorghum as this act could endanger their fertility. Therefore, these staple were normally harvested by men while women only assisted in carrying the produce home for storage. Second, Babukusu associated entire millet and sorghum fields with pregnant women and, specifically, to pregnancies that could culminate in the birth of twins. Twins symbolised fertility, prosperity, well-being as well as strength of Babukusu and their society which could only be realised with a good harvest of these two crops. Finger millet and sorghum provided people with both food and beer which were the most important elements essential in the socio-economic relationships and ritual lives of Babukusu. Therefore, harvesting of millet and sorghum was symbolically construed as being similar to the imminent birth of twins; and, hence, it was a time for rejoicing. Thus, in the evenings people would dance every day until the two crops had been harvested from the fields. In fact, it has been reported by an early colonial source that: "They have harvest dances, which seems to be seasons of rejoicing while gathering the grain. They work in the day time and dance by the light of the moon at night. Men, women and children dance about a central orchestra of drums and shields which are beaten in unison to some songs."⁶

Many of these harvest songs and dances were an explicit recreation of the sexual act. Women and men who participated in these dances were always naked, however, it was taboo for any male to have an erection. In fact, the usual fine for a man who sustained an erection during this sexual creativity and performance was one bull. The same sexual songs and dances were, and still are, reproduced and enacted during the birth of twins. People engage in what is called *khukhina bukwana* (dancing the twinship) in which "people take part in a very peculiar sort of dance where sexual songs are sung and sexual acts are imitated by the dancers."⁷ A similar fine of one bull is also imposed on a man who nurtures an erection during this occasion. The traditional symbolism

associated with millet and sorghum harvests has been adversely transformed by the process of delocalization.

5.7 Women, Traditional Crops and Dishes

The role of women in the production of foods now, as in the past, does not usually end with the harvest and storage of food crops. Indeed, one of the most important post-harvest responsibilities for women is food processing which occupies a greater portion of their time and energy.

5.7.1 Preparation of Dishes

This is one of the most significant roles of women in their households. Normative accounts of informants reveal that foods are usually prepared three times a day -- in the early morning, mid-morning and evening. However, not all households follow this normative pattern but it is true to conclude that most households do at least have two meals a day. The staple dish of the people in Bokoli location continues to be *busuma* which is made from a combination of the flour of finger millet, sorghum and cassava. However, this staple dish is nowadays commonly made from hybrid maize flour.

It is also the duty of women to grow, procure and prepare the vegetables used in eating the traditional dish. There are a number of local species of vegetables which women prepare for their families. These vegetables include pumpkins, chisaka (*Gynandropsis gynandra*), litoto (*Amaranthus hybridus*), murere (*Corchorus olerarius*), kimiro (*Crotalaria Brevideus*), endelema (*Basella alba*), lifwafwa (*Commelina bhenqalensis*), esufwa, khafululu (*Crassocephalum crepidiodes*), Sarati (*mushrooms*), namasaka (*Solanum nigrum*), emboka (*Amaranthus lividus*) and makoe (*Bidens pilosa*).

The traditional dish may also be eaten with milk and boiled or roast meat. An alternative dish which women make to a mixture of beans and potatoes, or a combination of green grams and potatoes.

5.7.2 Women and Home Brewing

In the agrarian past life was localised and closely-knit and the main axis of daily encounters was the entertainment of others with adequate amounts of sorghum beer (Ogutu 1985). This beer was usually taken in public settings and all people could partake of it. In fact, Wagner (1970:68) gives the following precis of the consummation of sorghum beer in the agrarian past in Bukusu society. He wrote:

Next to the possession of cattle, the ability to entertain guests at frequent intervals with beer of good quality and sufficient quantity is one of the chief ambitions of an elder. It is, in fact, one of motives for plural marriages, for under the traditional system of production both the growing of sufficient quantities of grain and the brewing of beer on a large scale was only possible in a polygynous household or if several families pooled their resources. One of the most humiliating experiences which a man can suffer is to be derided by his age-mates for having offered them 'beer of the women which is not of the husband's kind, i.e. weak stuff that has not properly fermented, or to be despised because he drinks beer at other people's places, but does not know how to brew the right stuff himself.'

Today, home brewing is done either as the sole source of family income or as a supplement to the meagre family income. This activity is being done mostly by married women usually with large families to support. Although, a majority of these women are married to an unemployed spouses, my research findings show that even women married to salaried spouses are also engaged in home brewing. This was, for example, the case of a wife of an officer in the police force working in Nairobi. Home brewing is a very important commercial activity in the lives of many women in Bokoli location. This is in spite of the fact that home brewing of *chang'aa* and busaa has been banned by a Presidential decree since 1978.

In the agrarian past beer was made from sorghum and finger millet. Ogutu (1995), however, notes that during colonialism these two traditional staples declined in importance because the emerging educated Africans disdained their production. Maize which was prolific

in the district at the time became a very reliable option and hence increased beer brewing and consumption. According to Ogutu (1985:79), "grinding of maize in the posho mills [was] also an easy task for women. The process of preparing it for pombe⁸ [was] less laborious and less time consuming." The preference of maize over sorghum and other traditional staples in the preparation of traditional beer and other dietary contexts represents cultural delocalization. This is because attitudes and values of people are transformed to the point where they associate maize with modernization and traditional staples with conservatism. This type of change in attitudes and values normally has negative effects beyond the mere substitution of one crop for another as it can have "a profound impact on family structure, female power, and previous rationale for reproduction" (Kilbride and Kilbride 1990:13).

There are two types of brew in Bokoli location: *bussaa* (or *kwete*) and *chang'aa* (or *enguli*). The process of preparing *bussaa* is very simple. First, the women grind maize and add cold water to the maize flour. This is then fermented for three days. After this period is over, the flour is fried (baked). Next the women mix fermented millet (*kamamela*) as a malt with the fried flour and cold water in one large pot. This mixture is left for three days and then it will be ready for drinking.

Many women in the neighbouring Kimilili division regard this traditional method of brewing as being too laborious, time consuming and uneconomical (Nangendo 1994). Therefore, some of them have devised ingenious ways of preparing "quick brews", to use Malahleha's (1985) term. Instead of mixing cold water to the maize flour these women use hot water and matures within twelve hours and is ready for consumption in twenty-four hours or sometimes even less. As Malahleha (1985) observes in regard to the Swazi women, "quick brews have become popular both for the brewers and consumers" and this is also very true in Bokoli location. Specifically, the popularity of the quick brew could partly be a direct result of police raids. The police constantly harass the brewers and customers alike. Therefore, both prefer a brew which can be dispensed with speed and ready to dash off in the event of a police raid.

Chang'aa is a distilled moonshine (liquor) with a very high alcohol content. The technique of its production is said to have been brought in Kenya by Sudanese-Nubians then employed by the British East African Company; thus, it was originally called Nubian gin (Ogutu 1985). To brew *chang'aa*, one sieves *busaa* into a large container to which white sugar, jaggery or molasses is added. This mixture, called *muna*, is then left alone for three days. It can also be sold to those willing to partake of it when it is in that state. Next the mixture is boiled, distilled and poured into 700mm bottles of Tree-top.⁹ It is then ready for sale. *Chang'aa* is a very popular liquor with many people in the rural areas because, like *bussa*, it is also cheaper than bottled commercial beer. Similarly, it is a favourite drink because on the average a person who is not a veteran drinker can hardly consume more than two whole bottles alone. Ogutu asserts that: "for an ordinary person a glass or so of "chang'aa" places him in a good mood for the day" (Ogutu 1985: 78).

The production of *chang'aa* is a little bit more expensive than that of *busaa* mainly because of the addition of sugar, amounts of sugar, molasses or jaggery. Good quality *chang'aa* needs adequate amounts of sugar, molasses or jaggery. For the past couple of years the price of sugar has been fluctuating considerably. For instance, a kilogram of sugar in 1989 cost Kshs. 9/00; in 1991 it was Kshs. 13/45. At the beginning of 1992, the price provisionally stood at Kshs. 16/65 following a price hike at the end of 1991. The price was again hiked in February 1992 with the officially gazetted price of one kilogram of sugar at Kshs. 17/00. However, this last price increase came at a time when it was alleged that the country was facing a serious sugar shortage. Consequently, this created an impression of a price decontrol since traders could fix their own price tags. Therefore, the minimum price for one kilogram of sugar in Bokoli location in 1993 ranged between Kshs. 35/00 - 40/00. This means that each time the government increases the consumer price of sugar, there is always a corresponding increase in the cost of a glass of *chang'aa* by the brewers. The price of *chang'aa* has, therefore, steadily been increasing and it is several times higher than what it was in the 70's and 80's. Ogutu (1985:78), writing in the mid-

1980's, reports that: "a bottle of "*changaa*" cost shs. 3/- and remained so until after independence when it rose to 6/- the [sic] shs. 9/-. Today it cost shs. 12/-." One bottle of *chang'aa* in 1991 cost Kshs. 40/00 and a glass Kshs. 12/00. This had increased to Kshs. 60/00 per bottle and Kshs. 25/00 per glass in 1993. However, the prices of *chang'aa* and *busaa* are still relatively cheap compared to that of Kenya Breweries commercial beer where the cheapest brand costs Kshs. 32/00 and a shot of whisky (sold in 30 ml mini-packets) costs Kshs. 25/00. It is no wonder that people in the rural areas prefer *busaa* and *chang'aa* while home brewing is a booming business. The current prices of the commercial liquors are now well beyond the means of most people in rural Bokoli location.

6. THE ROLE OF WOMEN IN SUGARCANE FARMING

Introduction

This chapter is concerned with women, sugarcane cultivation and food security in Bokoli location. The chapter deals with the historical background to sugarcane farming, optimum conditions for sugarcane growing, sugarcane in Bungoma District and Bokoli location and the impact of sugarcane farming in the daily lives of people in Bokoli location.

6.1 Background: History of Sugarcane Farming

In Botanical terms sugar is known as sucrose and this sucrose is found in many different living plants since it is formed by the process of photosynthesis. According to Mintz, sources "can be commercially extracted from various plant sources"; although, "the two most important sources of processed sucrose - of the refined carbohydrate product we consume and call "sugar" - are the sugar cane and the sugar beet" (1985:19). In fact, sucrose is the most abundant as well as important organic element which is present in the sugarcane plant. Mintz adds (1985:21) that: "there are six known species of sugarcane, of

which *Saccharum officinarum* - "sugar of the apothecaries" - has been important throughout history. Though other species besides *saccharum officinarum* have been used to breed new varieties in recent decades, the source of genes for sucrose accumulation has continued to be this species above all..."

The sugarcane plant (*Saccharum officinarum* L.) is a grass of the Gramineae family and, was perhaps, first domesticated independently in different parts of the world during different periods. At the moment the earliest known domestication centres are thought to have been New Guinea and Indonesia where the domestication of sugarcane began before the 8th millennium BC. In Africa, the cultivation of sugarcane was introduced in North Africa by the Arabs where it probably dates earlier than 996 AD (Mintz 1985). Today, the cultivation of this plant can be found in many tropical and subtropical regions of Africa. Here, in Kenya sugarcane was first introduced in 1902 at Kibos, near Kisumu, in the present Nyanza province by an Australian farmer for use in the production of jaggery. It is now grown in the Coast, Nyanza and Western Provinces of Kenya on a commercial scale.

6.2 The Growth of the Sugarcane Plant

Sugarcane does well in a wide variety of soils ranging from sandy to heavy clay soils. However, the ideal soils should normally be well-draining with a pH of 4.2 to 8.5. The soils should also receive between 1,600mm - 1,700mm of rainfall since excessive rainfall leads to water-logging which in turn makes sugarcane farming a hazardous task. The cane crop can do very well at an altitude of 1,600m above sea level with a minimum temperature of 18 degrees Celsius and a maximum of 32 degrees Celsius, with an optimum of 25 degrees Celsius. Mintz (1985:21) has stated that "cane is propagated asexually from cuttings of the stem having at least one bud. Once planted, the cane sprouts and with adequate heat and moisture may grow an inch a day for six weeks." The sugarcane plant, also called "noble cane", usually has sweet and juicy stalks which can measure from 5.1 centimetres in thickness to 4.6 metres in height when it is mature.

The seed cane plant in many parts of the tropics takes between eighteen and twenty-four months to mature and thus be ready for harvest. If the seed cane plant is left in the fields for more than thirty months, it becomes over-mature cane and thus has low juice and sugar content. Mintz cautions that "cane must be cut when ready so as not to lose its juice or the proportion of sucrose in this juice; and once it is cut, the juice must be rapidly extracted to avoid rot, desiccation, inversion, or fermentation" (p. 21). The ideal sugar content in ripe sugarcane is normally between 9-15 per cent. Therefore before being harvested, samples of the cane should be taken to the factory for quality testing and sucrose distribution. The seed cane plant should ideally yield about 90 tonnes per hectare with an average of 45 to 50 tonnes per hectare. Thus, if the cane is not harvested in time, for one reason or another, the sugar content will naturally be low thus leading to considerable losses. The stubble or ratoon cane, on the other hand, matures after sixteen months and becomes over-mature cane after thirty months have elapsed. The first ratoon cane should ideally yield approximately 50 tonnes per hectare with an average of between 45 and 50 tonnes per hectare. On the other hand, the second ratoon cane should approximately yield about 35 tonnes per hectare with the same average as the first ratoon. If the cane is really good, the farmer can have a third ratoon harvest which will have considerably less sucrose and hence low tonnage.

Commercial sugarcane in many areas of the world is mainly grown for the eventual extraction of white sugar, also called centrifugal sugar. White sugar is normally used to sweeten beverages and candies and may also be utilised in spirits in order to manufacture industrial lactic acid. There are a number of derivatives discharged during the production of centrifugal sugar. These derivatives can be used to perform a variety of functions. For example, one of these by-products, is as sweet as centrifugal sugar, is known as molasses or treacle which is primarily used in the production of ethyl, alcohol, acetone, ethyl acetate and carbon dioxide. Molasses may also be used to sweeten the rums of bakers as well as the yeast of the brewers. Lastly, molasses is also a very good silage and roughage material for livestock since it increases

palatability. The second derivative is bagasse or cane trash which has mainly been useful as fuel for factory boilers as well as in the production of electricity in many sugarcane factories. Bagasse can be and has been used in the manufacture of paper products, building materials, and furfuraldehyde. Furfuraldehyde is a liquid aldehyde or aldose normally used in the production of nylon and resins. Furfuraldehyde also functions as a solvent. Finally, bagasse is a very good mulch material for other crops.

6.3 Sugarcane Farming in Bungoma District

The commercial growing of sugarcane began in Bungoma District in 1976 when a cane factory was started at Nzoia, located 25 km east of Bungoma town, approximately 30 km south-west of Webuye township and 45 km due south of Kimilili township. The Nzoia Sugar Company (hereafter referred to as NSC) started crushing cane in 1978. During that time the Government of Kenya owned 95 per cent while the French managing agents called Five Cail Babcock controlled the remaining shares. The contract of these French agents was terminated in the early eighties and, therefore, the NSC is at present fully owned by the Government of Kenya.

The NSC was started with five basic objectives; however, only two of those objectives are germane to the present study. The first objective was for the NSC to provide income to the local farmers and hence enhance their socio-economic status. In 1986 there were 16,000 registered farmers and this figure has now increased to roughly 18,000 people. The figure represents the number of families who derive their livelihood more or less from growing sugarcane for the NSC. The second objective was for the NSC to create employment opportunities in the rural areas of Bungoma District. This was one means of discouraging the rural out-migration of people, particularly the male youth, from the area to urban centres in the country. The NSC currently employs 2,300 people while an additional 1,155 people are hired on temporary or contract basis to harvest the cane. The total area under sugarcane which belongs to the NSC is 37,516 hectares. Out of

the total hectares, approximately 34078 hectares belong to the sugarcane farmers while 3,438 hectares are on the Nucleus Estate of the Nzoia Sugar Factory.

6.4 Sugarcane Farming in Bokoli Location

Sugarcane farming in Bokoli location started as far back as 1976 and today more people are still contracting as cane farmers. In my sample there are five farmers who began cane farming in 1976 while eight had so far contracted with the NSC in 1993 (Table 3). One of these early cane farmers was the father of a 30 year old man who today lives in the village of Miendo, Bokoli location. According to the account of this informant, his father was among some of the early people to be moved from Nzoia area and relocated elsewhere in 1976 when the NSC extended its nucleus estate. Since it is necessary to settle these people, the NSC bought them equitable parcels of land to compensate for the land it took. The father of this particular informant had 2.63 hectares in his original village of Nzoia and he was bought the same number of hectares in Miendo village.

A majority of the farmers in Bokoli location fall outside the immediate nucleus zone of the NSC and have thus entered into a mutual contract with the Nzoia sugarcane factory. In this partnership the farmer has agreed to provide his/her land, time and labour to the NSC. Second, the farmer has also agreed to deliver to the NSC three harvests within a period of five to six years. Third, the farmer has conceded to set aside a minimum of one-third (0.6 hectares) of the farm land for pasture, subsistence crops and a homestead. On its part, the NSC has countenanced to provide the farmer with those services and inputs which are both too capital-intensive as well as labour-intensive for the average farmer to afford. These inputs include sugarcane fertilisers and seed cane while the services include ploughing the farmers land as well as harvesting and transporting the cane to the factory. The Agronomy Department of the NSC is charged with the responsibility of carrying out soil studies in the village of the farmer. The main purpose is to find out which sugarcane diseases and pests are likely to be present in the

area and provide the germane pesticides. This exercise is also meant to ascertain which suitable sugarcane seed can be issued for planting. After the soil analysis, the NSC undertakes ploughing, harrowing, as well as furrowing of the farmer's land. In addition after the cane has been planted the NSC extension personnel instructs and supervises the weeding, top dressing and spraying of the cane of the farmer.

All the villages in Bokoli location have been divided into sugarcane growing zones by NSC. The sugarcane in one zone is planted, harvested and transported to the factory in one harvest season. The Cane Transport Department is responsible for delivering the cane from the fields to the factory. According to the policies of the NSC, the farmer should normally be paid fourteen days but not later than 3 months after cane delivery.

Table 3: Sugarcane Farming in Bokoli Location

Year cane started	No. of Farmers
1976-1980	94
1981-1985	40
1986-1990	24
1991-present	42
Total	200

Source: Interviews in Bokoli location, 1993-94

Table 3 shows that the highest number of people became sugarcane farmers in the period between 1976 and 1980. This number has steadily been decreasing such that between 1986 and 1990, only 24 people became sugarcane farmers. A majority of the people in Bokoli location initially perceived sugarcane farming to be very lucrative in comparison with the cash crops such as maize and coffee. Thus, many of them opted for sugarcane cultivation claiming it was a more reliable source of income. For instance, between 1976 and 1978 a total of 77 farmers in Bokoli (39%) contracted with the NSC. This was a relatively high figure

compared with the period from 1979 to 1990 where only 81 people (41%) became cane farmers; and, this was over a period of eleven years.

It is my view that the low number of people contracting as sugarcane farmers is not unique and confined to Bokoli location alone. Rather, it clearly mirrors similar reactions occurring widely in the other parts of the Nzoia Sugarcane Belt. It is evident that many people in Bungoma district were simply becoming reluctant to engage in sugarcane cultivation after their initial euphoria. This view is based on the fact that the overall operations of the NSC were adversely affected during this period. In fact, between 1982 and 1984 the crushing factory at Nzoia closed down purportedly because there was little or no sugarcane to crush. The data in my sample, showing a time frame of 11 years where only 41 per cent of the people in Bokoli location contracting as sugarcane farmers is within this sugarcane shortage period.

Even if the NSC had not closed down its operations, it is clear that since its inception it has managed only once to operate at full capacity. The Government itself has officially admitted that while the number of sugarcane farmers and their hectares have steadily increased, the NSC still operates at less than full capacity (Kenya 1989). The full capacity of the NSC is supposed to be 50,000 tonnes of white sugar after crushing 2,000 tonnes of sugarcane daily. However, the available crushing figures show that it has been unable to produce the required tonnes of sugar on a daily basis. For instance, in its first crushing season between 1978 and 1980, a total of 48,178 tonnes of white sugar were produced by the NSC. This was followed in three subsequent seasons by 43,570, 43,450 and 43,587 tonnes, respectively. In fact, by the end of the 1983-1984 harvesting season, the figure was down to 23,867 tonnes. All these figures clearly intimate that, between 1978 and 1985, the crushing rate at the NSC never really surpassed 1,500 tonnes of sugarcane per day. However, the NSC claims that it usually crushes over 1,500 tonnes of sugar per day.

The data clearly show that the NSC management was aware of the limited crushing capacity of its factory and insufficient sugarcane to crush as early as 1982. Therefore, it undertook several measures to

address this situation. The first measure which the NSC pursued was a vigorous recruitment drive to lure more farmers into sugarcane cultivation. In fact, this decision was made immediately after the factory was closed down between 1982 and 1984. These efforts paid off because the NSC increased its production to 32,928 tonnes of sugar in the 1985-86 crushing period. And, by 1988-89, the factory recorded a high production figure of 51,018 tonnes, a figure higher than its annual target of 50,000. This is the only time that the NSC has ever managed to operate at full capacity since its inception over 15 years ago.

In the second measure, in 1984, the NSC proposed to the Government that it wanted to increase the milling capacity of the factory by installing a new mill, boiler, and boiling house. These installations were meant to enable the factory increase its milling capacity from 2,000 to 3,000 tonnes per day. Increasing the milling capacity was a very laudable decision as it would have ensured that the sugarcane of farmers was harvested on time. Unfortunately for the farmer, the NSC at the same time also borrowed a loan of Kshs. 50 million from several commercial institutions in order to bring more hectares under sugarcane cultivation. This loan was borrowed on the assumption that the Government would immediately agree to the proposals. As it turned out, however, borrowing this loan was one of the most unfortunate decisions ever made by the NSC authorities, mainly because authorisation from the Government to purchase and install the new machinery came only in 1988 four years later. Yet, the sugarcane, which the NSC planted after the loan of Kshs. 50 million, had already matured and was ready for harvesting by 1986. The tonnes for this new sugarcane in 1988 were 1.2 million and had even increased to 1.6 million tonnes in 1990. During this time, however, the NSC was still crushing sugarcane at a rate of below 2,000 tonnes instead of the expected over 3,000 tonnes per day. This implies that from 1982 to 1992, the NSC could not harvest and crush the sugarcane of all the farmers because of the limited capacity of its factory.

As stated above, the Government authorised the NSC to purchase new machinery and extend its milling capacity to 3,000 tonnes per day in

1988. The proposed rehabilitation and expansion plans were not finalised by the NSC until September 1988. However, the completed crushing factory, which only covers the first phase of the intended expansion, had not yet started milling sugarcane at the time of this research. Therefore, the entire expansion programme has victimised the sugarcane farmer. In fact, statements of informants show that the NSC had only started to harvest some of the sugarcane in the villages of Bokoli location from the beginning of 1992 after a "very, very long time." The data also indicate that sugarcane farmers in Bokoli location in particular and Bungoma District in general are still stuck with sugarcane until the crushing capacity is increased to 7,000 tonnes per day.

Nevertheless, sugarcane farming is still perceived by many of the local people as a better alternative to maize and coffee in terms of income generation. This study shows that more and more people in Bokoli location are actively engaged in the cultivation of sugarcane. Many of these people have put and in fact continue to put, a greater portion of their land under the sugarcane crop as data from these villages show.

6.4.1 Machakha Village

The household in Machakka village owns an average of 4.12 hectares. A monogamous (N=23) holds an average of 2.65 hectares while a polygynous one (N=5) has 7.62 hectares. However, the largest land-holding unit recorded for an individual in this village is 24.3 hectares while the smallest unit of land is 0.45 hectares. On the other hand, 75 per cent of the households (N=7) in Machakha village have already procured title deeds while 25 per cent (N=21) still do not have deeds for their land. This intimates that households which lack title deeds as collaterals cannot procure agricultural credit. The types of food crops which are grown in this village include maize, beans, sweet potatoes, sorghum, groundnuts, cabbages, kales and bananas. The cash crops consists of maize, sugarcane, coffee and sunflower.

Table 4 below compares the hectares of maize (both a staple and cash crop) and sugarcane (a pure cash crop) in the village of Machakha. The

table shows that the cultivation of sugarcane started in the village of Machakha in 1977. The data further depict that sugarcane cultivation did not immediately seem very attractive to the inhabitants of this village. This is because the highest number of people in my sample who contracted as sugarcane farmers was 7 in 1977. In the next ten years only 14 people joined sugarcane farming. Nonetheless, Table 4 clearly shows that the predominant form of farming in the village of Machakha is the monoculture of sugarcane. This is because over the past ten years nearly all households have been putting a large portion of their land for cultivation of this particular crop. People with small land-holdings have generally tended to put all their land under sugarcane, sparing nothing for subsistence crops.

Table 4: Sugarcane and Maize Hectares in Machakha Village (N=28)

Year Cane Started	Total Ha.	Cane Ha.	Maize Ha.
1977-	35.35	11.34	2.43
1981-1982-	15.39	10.53	3.24
1986-1987-	14.99	12.55	1.45
1991-1992-	6.075	1.62	2.43
present			

Source: Interviews in Bokoli location, 1993-94

The narratives of informants strongly suggest that the family provides most of the labour in the cultivation of sugarcane. This family labour is organised around the division of labour by gender. It was found that both men and women are responsible for weeding and top-dressing

sugarcane. However, men also cut and arrange sugarcane in stacks before it is transported to the Nzoia Sugar Factory. Lastly, children engage in weeding, top-dressing, harvesting, cutting and arranging the sugarcane in stacks as well as being supervised by their parents. There was no household which engaged hired labour to supplement the household labour in the cultivation of the sugarcane crop in this village.

Many informants harvested very little, or actually no, maize at all in 1992. Farmers were affected by the prolonged drought in the early part of 1992 which made timely planting and weeding of maize and other food crops impossible. Informants also added that the Government distributed inferior maize hybrid seeds which resulted in very dismal yields. Lastly, the supply of fertiliser was very poor and irregular. In fact, when fertilizer finally became available it was far too expensive for most of these cash-starved farmers to afford. Therefore, a majority of the households resorted to planting using manure or without any form of fertiliser at all. This adversely affected maize yields (Table 5). An analysis of the data show that 50 per cent of the households in Machakha village did not harvest any maize, 25 per cent harvested less than 5 bags and 21 per cent harvested less than 20 bags in 1992. This means that a majority of the households do not have food security because the data show that a household in this village needs an average of 14.68 bags annually. And yet my sample discloses that an average of 13.29 bags of maize were produced in 1992.

Table 5: Maize Production per Household in Machakha Village 1992 (N=28)

Maize Bags needed per Household PA	Maize Bags Produced	Maize Bags Sold	No. of Households
0-5	4	1	3
6-10	27	9	9
11-15	19	5	8
16-20	3	1	1
21 and over	318	48	7

Source: Interviews in Bokoli location, 1993-94.

One of the households affected by the drought as well as lack of proper farm inputs was that of Khaemba (pseudonym). He is 68 years old and has nine children residing in his household. He inherited 0.405 hectares

of land and has never been able to buy any additional parcels of land. He started sugarcane farming in 1982 and since that time the cane has been cut four times, the last time being 1988. He needs twelve bags of maize to feed his family. However, in 1992 he did not harvest any maize. This is because he has no additional land as he has planted sugarcane on his 0.405 hectares of land. Therefore, members of his household constantly provide labour on the farms of other people in order to buy food. His wife and children pick coffee, plant, weed and harvest maize for wages on the farms of relatively richer households in Bokoli location. While, the informant himself cuts sugarcane as well as ploughs farms of his neighbours for wages.

On the other hand, Wanyama (pseudonym) is aged 40 years and married to one wife with whom they have had five children. He inherited 2 hectares of land and was able to buy an additional 2 hectares. He did not start sugarcane farming until 1992. He stated that he was forced into sugarcane farming because of "his poverty". This poverty made him to plant sugarcane on all his 1.45 hectares and spared nothing for food crops. His sugarcane has not yet been cut, as a result of which, members of his household have to contract out as farm labourers in order to earn money for buying food. They are usually paid to pick, select and sort the coffee beans by their relatively better-off neighbours.

Naswa (pseudonym) is entirely disillusioned with sugarcane farming. Before she started sugarcane farming in 1989 she hoped that it would improve her material and economic life; instead, her husband married another wife in 1992 after their sugarcane was first harvested. She continued: "We have five children, 2 girls and 3 boys. My husband inherited twelve acres of land. We do not have a land title yet. Last year (1992) we planted three acres of maize while two acres were sugarcane. I usually need eight bags of maize to feed my family. Last year we were lucky to harvest twelve bags. However, we were forced to sell some of the maize so as to buy hybrid seeds, fertiliser and beans. We started sugarcane planting in 1989 in order to receive some capital. The sugarcane has been cut only once and we were paid Kshs. 38,000. My

husband married a second wife, built a house for her and used the rest of the cash on *chang'aa*. Today, there is no money left."

Today, this informant provides seasonal casual labour on three farms in her village in order to earn some money so that she can buy food and other basic necessities such as clothes, medicines and utensils. Her labour is usually required during the planting, weeding and harvesting of maize. However, the time and duration which this informant provides wage labour to her relatively well-off neighbours involves a trade-off which also has to take into account the unpaid labour needed on her own farm. Although, there are times when her need for obtaining a cash income may become more primary than the provision of food for the household, this informant stated that her farm always comes first.

The above account contrasts very sharply with the narratives of Nambuye and Nanjekhoh both of whom are very happy with sugarcane farming. Nambuye (pseudonym) is a 37-year old primary school teacher. Her husband, who is 41 years, is also a primary school teacher. They have ten children and only one girl has been married; otherwise, the rest are still in school. The couple owns 4.86 hectares of land and have planted 2.03 hectares of maize and 0.405 hectares of sugarcane. According to Nambuye, the family feeds on 15 bags of maize annually but she did not harvest any maize in 1992. They started cane farming in 1985 in order to obtain money to supplement their individual salaries. The cane has been harvested three times. The last harvest was in 1992. The payments from this sugarcane enabled this couple to build a new modern house, buy a radio cassette and a black and white battery-operated television set. These were things they had always dreamt about but could not afford on their combined salaries. Indeed, this was the only couple which admitted to have bought a television set in Machakha village.

The case of Nanjekhoh (pseudonym) is very illustrative. She is 41 years old and married in a monogamous union. She has ten children subsisting on 3.24 hectares of land. She usually needs 15 bags of maize

annually to feed her family but in 1992 she only managed to harvest three bags of maize. She started cane farming in 1985 and since then the cane has been harvested three times. The last time her sugarcane was harvested was in 1993 and during this time there were eleven stacks. The NSC paid the couple Kshs. 15,400.00 after all the deductions were made. Out of this money the husband allocated himself Kshs. 13,000/00 and gave her Kshs, 2,400/00 for her contributions to the care and management of the cane. Small as this amount may seem, this was the only case in Machakha village where the husband actually budgeted and gave the wife money from the cane proceeds. The rest of the male informants stated that they bought their wives shoes, clothes, baking flour, maize flour, milk, sugar, bread and tea as well as paid school fees and medical bills. In other words, a majority of the women in Machakha village did not directly benefit from sugarcane proceeds in the form of direct money being disbursed to them.

6.4.2 Bokoli Village

In Bokoli village a household owns an average of 3.04 hectares with a monogamous household owning 4.83 and a polygynous one having 3.36 hectares. The data also show that 21 per cent of the households (N=3) do not have land title deeds while 78 per cent (N=11) have already procured title deeds. Out of all this households, only one is a *de facto* female-headed household.

According to the table below, a total of 33 hectares, with an average of 9.99 hectares, were put to sugarcane farming while only 16.2 hectares, with an average of 4.05 hectares, were used for maize between 1976 and 1977. This suggests that the predominant form of agriculture in Bokoli village is sugarcane farming. The cultivation of sugarcane in this village started in 1977, however, it appears that many people did not immediately clamour for it. In fact, my sample shows that only one person started sugarcane farming in 1977 while the highest number (N=4) was in 1980.

Both the family and hired labour are used extensively in sugarcane farming. Family labour is organised around the division of labour by

gender. Thus, women are responsible for weeding and top-dressing the cane as well as supervising the children. It is the duty of men to weed, top-dress, harvest and arrange sugarcane in stacks. Women rarely cut and arrange sugarcane in stacks. Children engage in weeding, top dressing, harvesting, cutting and arranging the sugarcane in stacks. Households hire both female and male labour and these are usually required to engage in all the facets of sugarcane farming. These labourers are paid Kshs. 900.00 per hectare.

Table 6: Sugarcane and Maize Hectares in Bokoli Village (N=14)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
1976-	21.06	14.18	7.29
1977-1979-	10.94	4.46	4.05
1980-1985-	5	3.65	3.65
1986-1992-		9.32	1.45
1993			

Source: Interviews in Bokoli location, 1993-94

An analysis of the data clearly show that poor maize harvests were recorded in Bokoli location in 1992. The prolonged drought, inferior hybrid maize seeds and the indeterminate supply of fertiliser delayed timely planting and weeding of maize as well as other food crops. A household in Bokoli village needs an average of 14.07 bags of maize per year and yet in 1992 only 8.79 bags were harvested by all the households in my sample (Table 7). The data further indicate that 14 per cent of the households in the village of Bokoli did not harvest any maize, 50 per cent harvested less than 10 bags while 36 per cent harvested less than 25 bags. The *de facto* female-headed household in Bokoli village did not harvest any maize despite the planting of food crops such as maize, finger millet, cassava, sorghum, beans and bananas. Apart from the prolonged drought and lack of fertilizer, this household

was affected by the absence of adequate resident labour of adult children as well as any other adults in the homestead.

Table 7: Annual Maize Bags per Household in Bokoli Village 1992 (N=14)

Maize Bags Needed per Household PA	Maize Bags Produced	Maize Bags Sold	No. of Households
0-5	4	4	1
6-10	35	0	7
11-15	48	10	3
16 and over	36	0	3

Source: Interviews in Bokoli location, 1993-94

6.4.3 Chebiini Village

In the village of Chebiinei, the smallest land holding unit is 0.405 hectares while the largest land unit is 12.15 hectares. Also, a household in this village owns an average of 2.82 hectares. A monogamous household (N=19) possesses an average of 2.6 hectares while a polygynous one (N=28) has 2.97 hectares. According to the data, 71 per cent of these households (N=33) have acquired title deeds while 28 per cent (N=13) still do not have deeds for their land. The types of food and cash crops which are grown in this village include maize, beans, sweet potatoes, sorghum, millet, groundnuts, cabbages, kales, bananas, cassava, sugarcane, coffee and sunflower.

Sugarcane cultivation started in 1977 and the following year majority of the people became sugarcane farmers (N=28). The largest area under both sugarcane and maize is 6.15 hectares while the smallest hectare is less than 0.405. However, the data also indicate that on the average there are more hectares under sugarcane than under maize. Many of the farmers in Chebiini village were also affected by the drought as well as the absence of fertiliser in 1992. This is primarily because 11 per cent of the households failed to harvest maize, 30 per cent harvested less than

10 bags while 60 per cent harvested less than 25 bags in 1992. A household in this village needs an average of 15.47 bags annually, however, an average of only 11.34 bags were harvested in 1992 by all the households in my sample (Table 8). Similarly, during the 1993 plating period many farmers had even decreased the hectares for maize crop. Indeed, some people did not even bother to plant maize or other food crops at all.

Table 8: Annual Maize Bags Per Household in Chebiini Village 1992 (N = 47)

Maize Bags Needed per household PA	Maize Bags Produced	Maize Bags Sold	No. of Households
5-10	50	5	14
11-15	80		
16-20	35	15	7
21 and over		340	24
		35	2

Source: Interviews in Bokoli Location, 1993-94

According to normative descriptions of informants, the family provides most of the labour needed in the maintenance and caring of the cane. This family labour is organised around the division of labour by gender and, in many respects, this division is based on Bukusu traditional norms. It was found that women are responsible for weeding and top-dressing the cane as well as supervising the children. It is the duty of men to weed, cut, harvest and arrange the cane in stacks as well as to supervise their dependents (wives, children and labourers). The task of cutting and arranging cane into stacks is rarely done by women. This aspect of the division of labour by gender is a reflection of the traditional past when it was the duty of men to clear all bushes from virgin lands for subsequent cultivation. Lastly, children engage in weeding, top-dressing, harvesting, cutting and arranging the stacks as well as being supervised by their parents. Apart from family labour, a number of households also hired labourers to help in the cultivation of the sugarcane crop. Hired labour is used mostly in weeding and,

although the prices are negotiable, most farmers in this village were paying between Kshs. 500.00 and Kshs. 1000.00 per hectare.

Farmers in the village of Chebiini village were found to be involved in a very interesting aspect in the other villages of Bokoli location. It was discovered that a majority of the farmers assigned all their land to sugarcane and then rented land elsewhere in order to cultivate food crops for their households. For instance, Mutila (pseudonym), who is 24 years old, combines farming and rental business. The retail trade he is engaged in is buying onions and tomatoes from Kapkatenyi market in Mt. Elgon District and selling them in Nzoia market centre and Webuye Township. Mutila inherited 0.405 hectares of land and bought an additional hectare where he lives with his wife and their five months old son. This informant has put his 0.81 hectares under the sugarcane crop. He usually rents 2.84 hectares of land where he plants maize and beans. He stated that the family needs five bags of maize annually. He started sugarcane farming in 1990 because he saw it as a source of income. He added that the first sugarcane which he planted was actually on leased land and the cane was cut in February 1992. When he received the money from the NSC he bought his personal hectare of land. The NSC paid him Kshs. 56,000.00 from which it deducted Kshs. 13,500.00. According to the account of this informant, sugarcane farming has been personally beneficial to his family. This is mainly because their general standard of living has improved tremendously. Payments from the sugarcane has enabled them to buy a bicycle, radio and build a new iron-roofed house. The money also enabled the husband to start his onion business. Today, the couple also boasts of piped water, chicken dairy cows in the homestead.

Table 9: Sugarcane and Maize Hectares in Chebiini Village (N=47)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
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1977-		40.15	18.63
1981-1982-	71.68-10.1	4.86- 6.99	1.62
1986-1987-	3-10.13	2.84	1.62
1991-1992-	4.05		0.405
present			

Source: Interviews in Bokoli Location, 1993-94.

6.4.4 Chebosi Village

The average number of hectares held by any one household in Chebosi village is 30 hectares. Out of this total hectares, a monogamous household owns an average of 4.75 hectares and a polygynous one has 63.67 hectares. This intimates that land in Chebosi village is owned in relatively large holdings in comparison with the other villages of Bokoli location. This is because the largest land holding unit encountered in the entire location of Bokoli was 44.55 per cent) in the village of Chebosi possess title deeds compared to 42 per cent who do not have. Furthermore, the data indicate that an average of 30.86 households inherited land from their fathers while none of the households have ever bought additional parcels of land. The crops which are grown in this village include maize, beans, sweet potatoes, sorghum, groundnuts, cabbages, kales, bananas, sugarcane, coffee and sunflower.

Sugarcane farming started in 1977 and in 1993 more people were still registering with the NSC as cane farmers. The largest area under sugarcane is 4.05 hectares while the least is 0.405 hectares. Conversely, the largest area under the maize crop is 4.86 hectares while several households did not have any of their parcels of land under maize or any other crops for that matter.

Table 10: Sugarcane and Maize Hectares in Chebosi Village (N=7)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
1977-1982	83.4	10.5	11.3
1985-1993	6.2	2.8	1.6

Source: Interviews in Bokoli location, 1993-94

Maize harvesting in Chebosi village was comparatively fair because the least number of bags that a household ever harvested was three bags, although 57 per cent of the households in my sample harvested less than 10 bags of maize in 1992. The highest number of bags that a household ever harvested was three bags, although 57 per cent of the households in my sample harvested less than 10 bags of maize in 1992. The highest number of bags harvested in 1992 was 105 by Wasombi (pseudonym). He is aged 83 years and married to four wives. He is a retired agricultural instructor. At the time of this study he was supporting 11 children on 44.55 hectares of land which he inherited from his father. Between 1992 and 1993 he planted 6.15 hectares of maize, 2.84 hectares of sugarcane, 1.45 hectares of coffee, 0.81 hectares of bananas and 0.405 hectares of finger millet. He needs 40 bags of maize annually to feed his large family and in 1992 he was able to harvest 105 bags but sold all of them to pay school fees as well as to provide medical care for his first and ailing wife.

He started sugarcane farming in 1977 because of what he termed as "my poverty". Family labour is not sufficient since sugarcane farming is very "hard and tiring work. My children have to attend school. Me and my wives are too old." Therefore, Wasombi depends mainly on labourers. This informant pays each labourer Kshs. 300.00 per month to take care of all aspects of the sugarcane plant.

The highest number of wives married by any one male in Chebosi village, and indeed the whole of Bokoli location, was 12. Perepetwa (pseudonym) is approximately 73 years old and has given birth to five boys and two girls. Her husband has allocated to her and her children 3.24 hectares of land where she grows sugarcane, bananas, finger millet, cassava, sorghum and maize. During the 1992-1993 planting season she cultivated 1.013 hectares of maize intercropped with beans, 0.62 hectares of sugarcane and 0.405 hectares of bananas. This informant is a *de facto* head of the household because her husband resides with the other wives in the village of Kamtong'i located approximately 45

kilometres away from Chebosi village. He only visits her when there is an emergency in the homestead. This informant managed to reap only three bags of maize. The lack of adequate resident adult labour as well as the inability to hire additional substitute labour contributed significantly to the poor maize yields in 1992.

Her eldest son convinced her to engage in sugarcane farming in 1977 because of what she termed as "poverty." She hires labourers for weeding, applying fertiliser and top-dressing the sugarcane. Each labourer is paid Kshs. 300.00 monthly. According to her account, she has benefited from sugarcane farming because she has been able to construct a modern permanent house and pipe-borne water in the homestead. Sugarcane farming has also enabled her to start a hotel business on the nearby market of Matisi. Her husband does not interfere with the monetary affairs of the household; in fact, she gives him money from sugarcane sales only when she feels like it.

6.4.5 Lutaso Village

The largest unit of land owned by any one household in Lutaso village is 8.1 hectares while the smallest is 0.405 hectares. 53 per cent of the households (N=16) in Lutaso village have already procured title deeds while 47 per cent (N=14) still do not have deeds for their land. The data also reveal that an average of 3.03 households inherited land while an average 2.50 did not inherit any land from their fathers but instead they bought the pieces of land they are now cultivating. A typical household in this village owns on average 2.27 hectares of land with a monogamous one having an average of 5.18 while a polygynous one has an average of 2.82 hectares.

Out of the total land encompassed by Lutaso village, 4.05 hectares have been put under the sugarcane crop while maize occupies only 1.62 hectares. According to the table below, a total of 14.25 hectares were used in sugarcane farming and 7.29 hectares for maize. Between 1992 and 1993 the area allotted to both sugarcane and maize had decreased, although sugarcane still had the highest portion of the land (Table 11).

Table 11: Sugarcane and Maize Hectares in Lutaso Village (N=30)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
1976-1977-1979-	21.06	14.17	7.29
1980-1985-	12.55	4.46	4.05
1986-1992-1993-	10.93	3.65	3.65
	11.74	9.31	1.45

Source: Interviews in Bokoli location, 1993-94

The data show that 30 per cent of the households in this village did not manage to harvest any maize, 53 per cent harvested less than 10 bags while 17 per cent harvested less than 40 bags of maize in 1992. A household needs an average of 13.67 bags of maize annually and yet only 8.97 bags were harvested in 1992 (Table 12).

Table 12: Annual Maize Bags per Household in Lutaso Village 1992 (N=30)

Maize Bags Needed per household PA			Maize Bags Produced		Maize Bags Sold		No. of Households		
5-10	11-20	21-over	48	18	8	12	12	17	1
			40		10				

Source: Interviews in Bokoli location, 1993-94

Accounts from informants indicate that there is division of labour by gender in regard to sugarcane farming. Also, these accounts point to the fact that the most predominant form of labour used in sugarcane farming is hired labour. Hiring labourers constitutes 67 per cent (N=20), family labour 13 per cent (N=4) while a combination of both family and hired labour was 20 per cent (N=6). In Lutaso village labourers are hired for weeding, top-dressing and cutting sugarcane and were paid approximately Kshs. 300.00 per month.

6.4.6 Miendo Village

54 per cent of the households (N=7) in Miendo village have already procured title deeds while 46 per cent (N=6) indicate that an average of 5.56 households inherited land while an average of 1.23 households bought the pieces of land they are now cultivating. Out of the total number of households in my sample from this village, two are *de facto* female headed households while the rest are headed by males.

Farmers harvested very little maize in 1992 because of the drastic effects of the drought as well as the unavailability of fertiliser. The data thus shows that 23 per cent of the households did not harvest any maize while 77 per cent harvested less than 10 bags of maize (Table 13). The *de facto* female-headed households were very adversely affected and, in fact, constitute those households which failed to harvest any maize in 1992. There are several major interrelated factors which contributed to poor maize harvests in the *de facto* female headed households. The first was the absence of sufficient resident adult labour in these households. The second was the inability to hire ploughing and seeding services to enable timely planting and weeding (Dey 1988). The third factor was lack of money to engage supplementary male and female labour to replace the deficient labour prevailing in these households. Lastly, members of these households provided seasonal casual labour for more opulent neighbours in the village (Day 1988; FAO 1985, 1988). This wage labour affected the required family labour which was supposed to be expended on their own food crops.

**Table 13: Annual Maize Bags per Household in Miendo village
1992 (N=13)**

Maize Bags Needed PA per household	Maize Bags Produced	Maize Bags Sold	No. of Households
5-10	13	0	5
15-20	8	0	2
21-30	16	0	6

Source: Interviews in Bokoli location, 1993-94

According to Table 14 below, sugarcane farming started in Miendo village in 1976. Also, some of the women in this village are not exceptionally happy with the sugarcane crop. A good example is

provided by Nangachi (pseudonym) who is today married to a polygynous spouse. She is 50 years old and has given birth to a total of 13 children. Her husband inherited 1.45 hectares and bought 2.03 more hectares from a neighbour. The couple plants the following crops: Maize 0.203 hectares, finger millet 0.203 hectares, sweet potatoes 0.304 hectares, cassava 0.304 hectares and beans 0.203 hectares. According to her narration, she needs approximately 24 bags of maize to feed her family. However, in 1992 she only managed to harvest one bag of maize. Her households started farming sugarcane in 1985 and in her testimony that is when her marital woes also commenced. She narrated: "My husband used all the money from sugarcane to marry another wife. He spent all the money on this wife and the rest of the money on *Bussa* and *Chang'aa*. If you look at my house and even the whole homestead you can see for yourself the poverty in which I am living in. As far as I am concerned sugarcane has not been personally beneficial. In fact, the standard of living in this homestead has worsened because all the money is spent on booze. The only good investment he has bought with the sugarcane money is a bicycle and a calf. Even with these two things I just forced him to buy."

Nayumbu (pseudonym), on the other hand, is married to a field instructor (Extension Officer) of the NSC who has two other co-wives. She is a primary school teacher and is 33 years old. She has given birth to two girls aged 7 and 5 years, respectively. In 1992 and 1993 she planted 0.81 hectares of sugarcane. She is responsible for making all the decisions concerning the types of crops which should be grown by the household because as she added "my husband is interested in alcohol more than farming. However, he is the one who collects the money from NSC."

There were two other *de facto* female headed households both of whom are widows. Nabichachi (pseudonym) is aged 48 years old and had very limited formal education. She has given birth to ten children, although at the time of the study she was only supporting six. When her husband died, he left behind 10.94 hectares of land that he had inherited from his father. At the time of this study, she was planting primarily maize,

millet and sugarcane. She needs six bags of maize to feed her children but because of the prolonged drought she was not able to harvest any maize in 1992. Her husband started sugarcane planting in 1977 so that he could be able to pay school fees for his children. He also regarded sugarcane farming as a source of income. Out of her total hectares, the informant today has put 2.84 hectares under the cane crop and both family and hired labour are normally used in taking care of sugarcane. Each labourer is paid Kshs. 300.00 per month to weed, top-dress, prune and uproot weeds from the sugarcane field. According to her, sugarcane farming has generally been very beneficial since she has managed to buy dairy cows, two bicycles and clothes for her family.

The other widow in the sample is Namuluu (pseudonym) aged 50 years and went to school up to Standard Eight. She has given birth to five children, 1 girl and 4 boys. All of these children are resident in the home with their mother. This informant is a custodian of 7.29 hectares of land which her deceased husband inherited from his father. She started sugarcane farming in 1977 and since then the cane has been harvested three times. The last time the cane was cut was in 1992 and she was paid Kshs. 35,000.00. She spent this money on the clothes of her children, paid their school fees and built a new iron-roofed house.

Table 14: Sugarcane and Maize Hectares in Miendo Village (N=13)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
1976-1977-1983-	15.85	4.55	3.24 1.45
1985-1991-1992	6.18	3.24	1.45
	4.55	2.84	

Source: Interviews in Bokoli location, 1993-94

6.4.7 Sirende Village

Many of the households in this village are headed by males while only one is headed by a female. A majority of these people inherited land from their fathers. Out of the 30 informants from this village, an average of 4.48 households inherited land while an average of 0.87 households inherited and also bought additional pieces of land. The

largest unit of land which was inherited was 8.1 hectares while the largest land holding unit which was bought was 5.67 hectares. Similarly, it was found that whether a household had bought or inherited land, most of them have not yet registered their land. According to the data, 53 per cent (N=16) of the informants have no land title deed while 47 per cent (N=14) possess a land title deed. In fact, the absence of land title deeds in Sirende village is characteristic of the situation in the whole of Bokoli location. In essence, lack of title deeds imply that farmers cannot hope to apply for a loan from any commercial bank or from a government institution such as the Agricultural Finance Corporation (AFC). Only one informant (3%) had applied for loans from the Farmers Co-operative Society as well as the Agricultural Finance Cooperation while 97 per cent of the informants never did. Surprisingly, 100 per cent of the informants agreed that agricultural loans improve farming.

The types of food crops which are grown in this village include maize, beans, sweet potatoes, sorghum, groundnuts, cabbages, kales and bananas. The cash crops consist of maize, sugarcane, coffee and sunflower. The data also show that farmers in Sirende village were adversely affected by the acute drought and the indeterminate supply of fertiliser in 1992. Thus, 57 per cent of the household failed to harvest any maize, 30 per cent managed less than 5 bags while 13 per cent had only 25 bags of maize.

The highest number of people (47%) in Sirende village to become sugarcane farmers occurred in 1992 while only 7 per cent contracted between 1977 and 1981 (Table 16). These people had a number of complaints regarding sugarcane farming in their village. The most recurring problem is the deductions which are made by NSC. Many informants felt that such deductions renders sugarcane farming to lose its lucrative appeal. In fact, the first cane delivered to the NSC is normally not very profitable to the farmer. This is mainly because the NSC has to deduct the expenses it incurred when preparing the farm for planting. These deductions can indeed be numerous if the farmer has taken an advance payment or loan from the NSC. The usual deductions

include the costs for the sugarcane seed, transportation, harvest, survey, farm inputs (such as fertilisers and other chemicals), nursery preparation, as well as administrative and service charges.

An illustrative case is provided by Wabichachi (pseudonym), 59 years, who is a retired Agricultural Technical Assistant. He owns 7.29 hectares of land and has ten dependents living in his household. According to his account, during the 1992-1993 period he planted the following crops: Maize 3.24 hectares, bananas 0.203 hectares, potatoes 0.405 hectares, cassava 0.203 hectares, beans 0.405 hectare, kales 0.405 hectares and sunflower 0.405 hectares. He usually needs 24 bags of maize to feed his family; in 1992 he harvested only 20 bags but did not plant any maize in 1993. He started cane farming in 1977. At the time he thought the cane crop was very lucrative, therefore, he put 2.03 hectares of land under the crop, however, at the time of this study he had decreased to 0.405 hectares. He applied and was advanced a loan of Kshs. 16,745.00 by the NSC to pay school fees for his children. Table 15 shows the deductions which appear on his bank statement:

Table 15: Deductions Made by NSC After Cane Delivery

	Kshs.
Total loan	16,745.10
Total Interest Charged	153.60
Burnt Cane Penalty	0.00
Council Cess Charge 1%	267.10
NOCO Capital Levy 6% PT	254.40
Presumptive Tax 5%	1,335.60
Transport Charges	5,088.00
Harvest Charges	1,930.45
Total deductions	25,774.25
Harvest Qty 45.60	
@Kshs. 630.00 Per Ton	26,712.00

Source: Interviews in Bokoli location, 1993-94

The sugarcane of this farmer was harvested in June 1992 and he had a total of 16 stacks. After the deductions, he was only paid Kshs. 937.75. Concerning all the deductions made by the NSC, this farmer feels that

sugarcane farming is no longer beneficial to him. Furthermore, he pointed out that the time it takes to get payments after harvesting is too long. Equally long, is the actual harvesting itself after the cane has matured. In his particular case since 1977 the NSC has only managed to harvest his sugarcane five times in fourteen years. Despite the pessimism of this informant, he grudgingly acknowledges that sugarcane has actually aided him to procure things which he would never have afforded by planting maize. This was the only informant in the whole of Bokoli location who used the money from the NSC to harness what he called biogas from the cowdung in his homestead. Today, he has electricity in his homestead. He explained: "I dug a hole measuring 10 feet deep and 5 feet wide and cemented the bottom. Inside this hole there is a large steel tank which is inverted and has two pipes. The first pipe is an inlet which brings in the cowdung solution while the second is an outlet. The outlet pipe has a release valve. This steel tank is supposed to float on the cowdung solution so that the gases produced from the cowdung solution enters the outlet pipe. This pipe then leads the gases into the main house. I also added a small opening on the side of this main hole to enable the addition of more cowdung solution. This opening is always sealed so that the gases may not escape. The cowdung is mixed with one *debe* of water and poured into this small opening daily. The cowdung is usually mixed with water on a raised platform adjoining the small hole. This solution is supposed to flow down the main hole through another small hole which joins the platform and the main steel tank in the hole. There is a steel pipe which runs from the bottom of the hole into the house and it is then connected to an electrical switch."

Table 16: Sugarcane and Maize Hectares in Sirende Village (N=30)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
1977-1981	19.04	2.84	3.24
1986-1992-1993	21.47	10.53	4.05
	19.04	6.48	3.65

Source: Interviews in Bokoli location, 1993-94

In the village of Sirende the data show that in 33 per cent (N=10) both the wife and husband collected the money from the NSC. Some of these informants stated that joint bank ownership was sometimes insisted on by the NSC while others stipulated that the couple themselves decided to have a jointly-owned bank account. On the other hand, 20 per cent (N=6) of the women were responsible for collecting the money while 47 per cent (N=14) of the men collected the money from the NSC. In the cases where the wife collected the money it was because she was a *de facto* head of the household for example, widowed, divorced or separated. Naitu (pseudonym) is aged 41 years and married in a monogamous dyad. Her educational status is Standard Five while her husband who is 47 years old did not have any Western formal education. The couple have six children and owns 2.43 hectares of land where they usually plant maize, bananas and sugarcane. According to her narrative, her husband is not interested at all in farming so she usually makes all the decisions concerning both food crop production as well as sugarcane farming. Her responsibilities also includes collecting the money from the NSC. Additionally, the informant provides seasonal casual labour on the farms of her neighbours. This labour entails planting and weeding maize, bananas and sugarcane.

6.4.8 Soita Village

According to the data, there are only two *de facto* female household heads in this village, otherwise the rest of the households are headed by males. A typical household owns an average of 4.91 hectares of land. A monogamous household possesses an average of 3.96 hectares while a polygynous one has 8.56 hectares. The information also shows that 48 per cent of the households (N=16) in this village have acquired land title deeds while 52 per cent (N=15) still do not have deeds for their land. Lastly, an average of 6.16 households inherited land while 5.66 households inherited as well as bought additional pieces of land.

The types of food crops which are grown in this village include maize, beans, sweet potatoes, sorghum, groundnuts, cabbages, kales and bananas. The cash crops consists of Maize, sugarcane, coffee and sunflower. Table 17 shows that this village was the first to start sugarcane farming in 1976 in the whole of Bokoli location. However, data indicate that over the years sugarcane farming in the village of Soita has not been popular. This is because in my sample (N=31), the highest number (N=5) of people to engage in cane cultivation was 1977. Also, between 1981 and 1985 no person contracted with the NSC as sugarcane farmers. Nonetheless, the monoculture of sugarcane is the dominant mode of farming in the village of Soita. This is because many people have been assigning a greater portion of their land to sugarcane than to any of the food crops. Like in the other villages of Bokoli location, maize yields in 1992 were very poor, for instance, 23 per cent of the households harvested no maize, 52 per cent had less than 10 bags of maize while 23 per cent of the households harvested less than 40 bags of maize. This clearly indicates that there is an acute shortage of adequate food supplies in this village. A typical household in Soita village requires an average of 13.23 bags per year to survive. However, in 1992 all the households in my sample harvested an average of 7.23 bags of maize only.

Table 17: Sugarcane and Maize Hectares in Soita Village (N=31)

Year cane Started	Total Ha.	Cane Ha.	Maize Ha.
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1976-	32.23	17.01	8.10	5.67
1977	14.99	18.22	12.15	3.24
1979	9.72	4.55	6.15	4.86
1981			7.99	6.48
1986				1.62
1993				

Source: Interviews in Bokoli location, 1993-94

Sugarcane farming has had negative impacts on women in the village of Soita. These negative effects have mainly been in two ways. First, some of the males married additional wives after receiving the first sugarcane payments. Second, many of the females have been forced into the brewing and selling of the "illicit" traditional *chang'aa* beer in order to survive. For instance, Lusaria (pseudonym), 47, is a *de facto* head of the household. Her husband "deserted" her over fifteen years ago and, therefore, she is technically separated from him. She makes all the major decisions in the homestead including the types of crops to be grown, how to feed, clothe as well as educate her children. She supports two daughters and four sons and all of them are still of school-going age. She lives on 3.24 hectares of land that belongs to her "former" husband. The crops that she usually plants include maize, bananas, beans, and sugarcane. In 1992 she planted 0.81 hectares of maize, reaped 2 bags, however, she did not harvest any maize during the 1993 season. The two bags of maize can hardly feed her family, therefore, she is forced to engage in off-farm incomes, particularly the home-brewing of *chang'aa*, to subsist.

However, Lusaria is not very much worried about her meagre maize harvests. Instead, she regrets that day in 1977 when her husband decided to venture into sugarcane farming. She recalled that in those days they were happily married but the cane has destroyed all that. This is because there are now seven co-wives, her standard of living has worsened considerably and she never sees any of the money from the sugarcane harvest. She narrated: "My husband started cane farming only after he saw other people doing it. Later on he realised that there was some good money in it therefore he put all our acres under sugarcane. After the

first harvest he used the money to buy a big farm in Cherang'anyi, married other wives and that is where he now lives with them. He only comes here when he knows it is time for harvesting sugarcane. He comes to collect the money because the account is in his name. Yet, I do all the weeding of the sugarcane. He never gives me any money to use in this home and, therefore, I have now restored to brewing *chang'aa* to survive and educate my children. I have never known how much money we get from delivering the sugarcane to Nzoia. I don't even know the number of *biteki* [stacks] which are normally harvested because I am not allowed to go to the farm during harvesting."

Naala is also technically separated from her husband who "deserted" her after marrying a 20 year old second wife. Indeed, this second wife did not even reach Standard Eight (8.4.4.). Naala is aged 45 years old and today she supports five children. She lives on her husband's 2.43 hectares where she plants maize and beans on 1.45 hectares. She needs 10 bags of maize to feed her family and she was lucky to harvest 9 bags in 1992. She started sugarcane farming in 1990 and has subsequently put 0.81 of her land under this crop. It was apparent that she does not have money to hire labourers to weed her sugarcane crop, therefore, she depends on her children to provide the much needed labour. Her sugarcane was cut for the first time in October 1993. She is the one who collects money from NSC and in 1993 she was paid Kshs. 15,000.00. She admitted that although sugarcane farming is beneficial in her family's life, she has been forced to engage in the brewing of *chang'aa* for extra cash sales.

6.5 Women, Food Crops and Food Security

The data clearly show that since 1976, when sugarcane cultivation started in the location of Bokoli, people have neglected their traditional staple crops. Thus the prevailing mode of farming in Bokoli location nowadays has increasingly become the monoculture of sugarcane. This monoculture has in turn affected the provision of adequate supplies of household labour to food crops; hence many households lack food security. The types of food crops which people in Bokoli location can

still grow very well include maize, finger millet, sweet potatoes, sorghum, and cassava as well as different varieties of vegetables, fruits and nuts. However, 49 per cent of all the households in my sample have less than 2.025 hectares under finger millet, cassava and sorghum while 51 per cent have planted less than 0.405 hectares under these crops for the last five years. The allocation of less land to these crops, and more land to maize and sugarcane, implies that farmers in Bokoli location do not pursue prudent agronomic practices which can stimulate the production of food crops.

In the agrarian past these people followed a farming system which emphasised the cultivation of a "variety of crops with different maturation periods in order to spread risks" (Dey 1988:51). In this system, the first crops to be planted were finger millet and sorghum. Both of these crops were grown in January and February and harvested in June and July. Also, these two crops required only one weeding during their growth.

These two crops also had additional advantages. First, the two crops produced a second yield after the first harvest. This ratoon crop was usually harvested around December or January. Secondly, both crops are more drought-resistant than maize hybrids. This means that in case of a drought, such as the one experienced in Bungoma District in 1992, these two crops will provide "some harvest, while maize is more likely to fail completely" (Dey 1988:49).

However, sorghum had other advantages over finger millet. According to a correspondence between the then Colonial Director of Agriculture and a Plant Pathologist in the United States Department of Agriculture "Plantings of sorghum are made at different times of the year, mostly in April, July and September but it all depends on local climate and tribe customs."¹⁰ In describing the modern cultivation of hybrid sorghum in Mexico, DeWalt and Barkin (1987:148) state that this is a crop: "with many advantages, especially when compared with the relatively more labour intensive maize, which requires two to ten times as many person/days of labour per hectare. It is also less risky undertaking

because it is more drought tolerant than other crops. In addition, farmers report that, compared to maize, there is no need to worry about "midnight harvests" of sorghum."

Nowadays a hybrid strain of sorghum called KAT 369 is available in Bungoma District. This new strain is early-maturing and can ensure that the people have adequate supplies of food during the famine months of February through May. However, none of the farmers in Bokoli location have even bothered to cultivate this type of sorghum.

In the traditional past crops such as cassava and sweet potatoes were planted during all the months except from December through February. Both of these crops do not take a long period of time to reach maturity, and in fact, both take only three to four months. Moreover, both crops can be left in the ground for a period of over one year before the tubers became unsuitable for human consumption. The fact that these two crops can be cached in the ground for over 12 months is an efficient storage system as well as an important consideration for women who have to provide labour to several crops. According to Dey (1988:48), the natural storage of cassava and sweet potatoes spreads labour so that it partially eases the drudgery of women's domestic tasks. On the other hand, the cultivation of bananas also had its appeal. This is because bananas yield throughout the year and yet they do not, as a general rule, need constant weeding. Table 18 below gives a breakdown of the harvest period of various crops after planting. The table clearly shows that if food crops were to be grown as in the agrarian past, the food security of many households in Bokoli location would not be threatened as the case is today.

Table 18: Harvest Period of Corps After Planting

Type of Crop	No. of Months After Planting
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Finger millet	406-703-606-805-603-
Maize/Sorghum/Cotton	406018-480303-5
Rice/Beans/Groundnuts/Cassava/Cowpeas/Green grams/Sweet potatoes	

Source: KNA: File No. AGR/KSM/1/48, 1951

The other sound agronomic activity practised in the past involved "crop rotations or multiple and inter-cropping systems which include crops of major economic importance" (Dey 1988:69). These systems have also been neglected in Bokoli location. Nonetheless, in crop rotations sorghum was usually interplanted with cassava and such cassava would remain in the ground until the land was required for more or other grain crops. However, famine could sometimes make it imperative to uproot the cassava crop early so as to feed the family. In fact, most people preferred to plant the early-maturing mosaic resistant type of cassava for reasons of food security. Cassava was also interplanted with sweet potatoes in August following finger millet was sometimes intercropped with sorghum, traditional maize varieties (*sipende*), beans, and peas. And such cassava was ready for harvest in 18 to 20 months. However, Dey (1988) states that cassava should normally not be intercropped with any other crop because it depletes soil nutrients. Lastly, finger millet was sometimes intercropped with sorghum, traditional maize varieties (*sipende*), beans, and peas.¹¹

The people in Bokoli location could also grow secondary crops which include pulses, ground-peas, fruits, nuts and groundnuts. In the past, such crops were normally planted from the end of January until the middle of April, often in mixed stands. Pulses can be harvested after four months while ground-peas and groundnuts after three months. Table 19 shows the months in which maize, sorghum, finger millet, simsim and beans were sown and reaped in the past. This table also

clearly shows that to stimulate the production of food crops in Bokoli location farmers need to revert to the farming systems of the past.

Table 19: The Cropping Cycle of Various Crops

Long Rain Crops	Breaking Ground	Sowing	Reaping
Maize	January	Feb. - March	July - August
Sorghum	Januray	Feb. - March	July - August
F. Millet	January	Feb. - March	July - August
Short Rain Crops			
Simsim			
Beans	July - August October	Sept. - Oct. November	Jan - Feb February

Source: KNA: File No. PC/NZA/1/. Nyanza Province, Annual Report, 1916

Secondary crops can make significant contributions to food security as well as supplementing the staple diet of the people in Bokoli location. Also, secondary crops can be intercropped with the "staple cereals, roots and tubers. They balance soil nutrients, provide ground cover which improves water-retention and erosion-control, and may help to reduce crop diseases and pests" (Dey 1988:68). Lastly, secondary crops can provide energy, proteins and vitamins as well as palatability and appetite of household members. According to a recent survey, the nutrient value of the diet of children in the sugarcane growing zones of Bungoma District has been adversely affected. This is because: "walking through the plantations, hungry and ill-clad children who should be in school, present a sorry sight. They content themselves with chewing sugarcane, the main food for most of them. The dilapidated structures that house them tell the story of the poverty that is the lot of the farming community."¹²

The absence of these secondary crops in the diet of children leaves them vulnerable to eye lesions and a host of other ailments (FAO 1988; Dey 1988). Therefore, it is the recommendation of this study that more

research be conducted to find out about the nutrient value of the diet of children in Bokoli location.

7. CONCLUSION: The Web of Poverty in Bokoli Location

This study set out to analyse the productive roles of women in both food crop production and sugarcane farming in Bokoli location. The broad objective of the research was to identify various farming constraints which women face in the pursuit of their agricultural responsibilities. Specifying the exact roles women play as well as the constraints which they face provides vital information to development planning and projects aimed at stimulating agricultural production in Bokoli location and Bungoma District as a whole.

The economic model used in this study defines the role which women play in Bukusu society as highly valuable and visible in terms of both food provision and security. These roles are multiple, interdependent and include cash cropping, subsistence food production, processing, storage and marketing. The roles also involve domestic tasks such as livestock caring, dairy production, fetching water, milling grain, gathering wood, child-bearing and nurturing. These plural roles clearly manifest that women in Bokoli location are involved in the entire food procurement system.

However, the traditional Bukusu family system, the present legal legislation and agricultural development policies, planning and implementation collectively mask the need and roles that these women represent. The Bukusu customary norms of land inheritance endows women with only use rights and not long-lasting tenancies. The present legislation of land also disenfranchises women of legal ownership and inheritance because land is normally registered in the names of men who also have life-long tenancies under customary laws. Finally, all development policies, farm inputs and resources usually by-pass women because they are not *de jure* land owners.

According to FAO, agrarian transformations which direct all agricultural attention to men, lead to several unfortunate effects. The first effect is a critical shortage of land and chronic hunger in many households if there is a monoculture of a single cash crop. The second effect is the development of intense competition between food and cash crops on the farms of all households. The third effect is the pushing of entire households into impoverished statuses with members constituting a working class of rural off-farm paid labourers (FAO, 1988:24-26; See also FAO, 1985). In Bokoli location all these effects are present and were accentuated from 1978 with the introduction of sugarcane cultivation.

7. 1 The Impact of Sugarcane Farming

This study has shown that there is a shortage of land for the cultivation of food crops in Bokoli location. This is because many of the households have assigned a large proportion of their land to the sugarcane crop. Still, the data show that these people are disenchanted with the sugarcane crop although new sugarcane farmers keep assigning most land to sugarcane. Nonetheless, it was the view of many farmers that given a choice they would uproot and burn this crop. The case materials presented in this study indicate that there are actually serious problems with the cultivation of sugarcane. The data show that the socio-economic situations of Bokusu women in Bokoli location have varied dramatically forcing many of them into off-farm incomes, such as the home brewing of *bussaa* and *chang'aa*, for survival. People in Bokoli location are cash-starved and living in a vicious web of poverty. The term poverty is not a heuristic tag I am forcing and spuriously applying to the people in Bokoli location. This is because informants themselves frequently defined their own social and economic statuses as an epitome of poverty. This poverty is accentuated in the case of women because of the "pre-existing inequalities in women's access to resources like land, education and services, which might have equipped them to cope better in the economic sector" (United Nations Office at Vienna 1991:49). This poverty has hence marginalized women and propelled a great number of other people into a perpetual and vicious culture of the

Korokoro hunger. A *Korokoro* is a two-kilogram metal or plastic container which is today used for measuring different types of liquids (for instance, *busaa*) and solids (for example, maize and beans) in the rural and urban areas of Kenya. However, the amount of, for instance, maize, in this measure cannot feed a moderately large family for a week, thus, such a family is always hungry. The concept of the *Korokoro* hunger is closer in meaning to a culture of poverty which "arises from the very limited range of choice possible to those existing on the border of starvation" (Hakemulder 1980:38). Many of the people in Bokoli location have to buy a *korokoro* of maize as well as other domestic consumables in order to feed their large families. This is mainly because many people in Bokoli location rarely have a surplus because of only a few hectares are allocated food crops. Yet, at the end of the maize harvest season, these people rush off to the rural market centres to sell their maize crop such that by April of the following year they are starving. This habit has therefore tended to create a culture of the *Korokoro* hunger in Bokoli location.

When sugarcane farming was started many households felt they had finally found an avenue of gaining quick money which could attenuate the poverty in their daily lives. Therefore, most of them put a large proportion of their land under the sugarcane crop and, in the process, jettisoned their traditional staples. This was because these people perceived that the income from the sugarcane crop was ultimately going to be high. However, the anticipated income has completely failed to materialise. In fact, the little income which is present in many of the households of Bokoli location today has not engendered any incontestable changes in the welfare of many households that one would expect. The money from NSC comes as a flash; an absolute mirage in the socio-economic lives of sugarcane farmers. This money is usually available when the people have been subjected to a lot of suffering and; indeed, the arrival of the money is usually out of synch with the problems and needs of the farmers. This intimates that these farmers cannot budget for their money in advance since they rarely know when they are likely to be paid. Still, these people are virtually dependent on the cash from sugarcane harvests for their domestic and

extra-domestic needs. This situation is defined as a result of the process of delocalization which is an intrinsic dependence on outsiders for existence. This process is also a negative transformation of traditional beliefs and attitudes which are then replaced by others drawn from external sources. In terms of food production and sustenance, delocalization has the negative effect of causing a dependence on the monoculture of one cash crop at the expense of food crops. This dependence has insidiously happened in Bokoli location as I am sure it has in other parts of Africa and elsewhere. A comparable scenario can, for instance, be cited among the Dowayo of North Cameroon. These people were encouraged to cultivate cotton for export so that the Government of Cameroon could earn the much-needed foreign currency. However, by the early 1980's the cultivation of cotton was being undertaken at the expense of food crops as the following source shows: "... the people had spent so much time growing cotton that they had grown no food, prices had rocketed and a famine had only been averted by the intervention of the church relief projects" (Barley 1983:25).

The people in Bokoli location would like to use money from sugarcane sales on school fees, medical-care, birdewealth, food, and consumer goods such as bicycles, radio/cassettes, television sets and clothing. Two common items aspired for by nearly all households in Bokoli location are the bicycle and radio. 40 per cent of the households possessed a radio (N=79), 34 percent a bicycle (N=68), 20 per cent both the radio and bicycle (N=40) while 6 per cent did not own either of the two items (N=13). Households in Bokoli location which do not own a bicycle or radio are interpreted in this study as reflecting the absence of actual economic gains derived from sugarcane farming. This is because normative descriptions of informants in Bokoli location highly associate prestige, mobility, convenience, information, entertainment and interaction with these two consumer items. For instance, one of the research assistants told me that during the 1990 World Cup Soccer in Italy, numerous people were trooping to the house of a neighbour who owned a black and white television set. Although, this neighbour was

charging a fee of Kshs. 2/00 per person, this research assistant stated that he never missed even one of the soccer matches.

According to the accounts of informants, however, the bicycle is the most desired for item. The bicycle enables people to interact with each other during social visits as well as in funerals. An analysis of the data show that the bicycle is a very important "rural taxi" today because of the absence of commuter vehicles in the rural enclaves of Bokoli location. Specifically, the bicycle is hired to transport the sick to hospitals and dispensaries. Also, the bicycle is constantly hired by people who want to attend funerals, bridewealth discussions and circumcision ceremonies. The normal charge for a bicycle is, for example, Kshs. 10/00 for a distance of 5 kilometres in the neighbouring location of Mukuyuni.

People in Bokoli location would also like to use the money from sugarcane to buy hoes, ploughs, drought-oxen and tractors. These items can be very useful in stimulating the production of food crops so that surpluses can be generated and sold. However, the data clearly indicate that the aggregated yields of all the food crops cannot even provide food security for households in Bokoli location. This is primarily because, as I have argued, many households in Bokoli location today do not follow rational agronomic practices which involve "crop rotations or multiple and inter-cropping systems which include crops of major economic importance" (Dey, 1988:69).

The money from sugarcane can also be used to buy dairy cows, construct modern houses, have pipe-borne water and boreholes as well as invest in commercial plots and construct houses for rent in the urban centres of Bungoma, Kimilili and Webuye. However, in the whole of Bokoli location only one individual has managed to construct semi-permanent rental houses in Webuye and Bungoma. Also, only one individual has managed to harness energy (bioelectricity) from cowdung in his homestead. All these are taken as indices of actual economic gains being derived from sugarcane farming and contributes significantly to the material life style of people in Bokoli location.

7.2 Women and Food Crops

This study has indicated that the monoculture of sugarcane farming in Bokoli location has involved a total modification of the traditional attitudes and ideology toward subsistence agriculture. However, there are several key elements which remain the same. The household is still the basic unit of subsistence production and women are the major players. These women provide the bulk of the agricultural labour needed in the planting, weeding and harvesting of all the food crops. These agricultural activities have not changed much, instead, they remain labour-intensive and tedious. Women's drudgery in farming has also been increased because they now perform additional duties which were once considered to be the work of men.

The traditional staple crops which women still cultivate are finger millet, sorghum, sweet potatoes, beans, cassava, and bananas. However, this study discloses that these staples are not being grown on a large scale. In fact, the main staple food, busuma, is today made from hybrid maize which was first introduced in Bungoma District in the Mid-1960's. Traditional beer is similarly made from hybrid maize as people have eschewed the cultivation of finger millet and sorghum.

In the agrarian past, the subsistence agriculture which Babukusu in Bokoli location practised was a mode of life. Indeed, subsistence agriculture did not become a source of income until after the introduction of flat white maize (*Zea mays*). Flat white maize was first introduced in Bungoma District in 1923 and it was quickly adopted by the people. This was because the output of maize per hectare was higher than millet and sorghum. Additionally, maize did not require a lot of labour. However, cassava, sweet potatoes and bananas are even less labour-demanding than maize hybrids. This is because such crops can be "stored" naturally in the ground for a period of over one year before the tubers become unsuitable for human consumption. Yet, most households do not even bother cultivating them nowadays. Also, in spite of its high yields, hybrid maize is normally not as drought-resistant as sorghum, finger millet, sweet potatoes and cassava. The

study has revealed that these drought-resistant crops are the ones which can provide adequate food supplies in many households in Bokoli location if only they could be grown on an appreciable level.

The midnight harvesting of maize reported by Mexican farmers (DeWalt and Barkin 1987) is usually accentuated in Bokoli location during circumcision periods. Circumcision rites in Bukusu society are normally carried out in the month of August of each even year. During such times, circumcision songs and dances reverberate throughout the night interweaving and involving the entire community in the festivities. Troupes of men, and even women, roam from one household to another mostly in search of fun such as free beer, food, dance and flirtation. Occasionally, some of these men engage in midnight harvests of maize in those households whose members could be in the house asleep or away at some circumcision revelry. In fact, statements of informants indicate that 10 per cent of the households had their maize harvested at night during the 1992 circumcision year.

Another factor which contributes to midnight harvests is the selling of maize by households from the month of May onwards. Many of the households in Bokoli location with their farms forming the swamps of Bokoli and Kuywa rivers normally have mature green maize by April. Such maize is constantly roasted or boiled and sold by the owners to passers-by at the roadsides. The maize may also be sold in fresh green cobs after being plucked from the stocks. However, such maize is also harvested at night by unknown individuals despite the constant vigils kept by members of such households. This factor, hence, contributes to midnight maize harvests thus depleting the reserves of many households in Bokoli location which in the first place generally plant very little hectares of maize and other food crops.

A cultural factor has also been identified as contributing to the scarcity of food in the households of Bokoli location. This is the propensity of males to marry plural wives as an exhibition of their "manhood" and wealth. According to the population census of 1979, the average number of wives for an average male was four wives. This cultural practice is both misconceived and a redundant priority. This is because

the perceived wealth, which is supposed to be affiliated with multiple wives, is an absolute mirage similar to the anticipated high incomes from sugarcane cultivation in the sugarcane growing zones of Bungoma District.

7.3 Recommendations

This study, thus, makes the following recommendations regarding food security and the role of women in food crop production in Bokoli location:

1. Households should re-incorporate past agronomic practices which were rational in the sense that they emphasised food sufficiency. These agronomic practices were actually a balance between different maturing periods of each crop as well as their labour bottle-necks, shortages and risks. These sound farming practices included early-maturing crop strains, crop rotations and mixed croppings.
2. Households should adopt early-maturing sorghum and millet varieties which are currently present in the country. These crops are "being recommended for areas where rainfall is light or stops abruptly before the end of the normal season" (Dey, 1988:49). These crops are furthermore more resistant to diseases and pests than maize.
3. The monoculture of sugarcane has virtually deprived women of their traditional small fields for legumes and vegetables. This has pushed women off their household farms into farm wage labour so that they can purchase food for their households. Purchasing food also depletes the incomes as well as diets of women and their families. Therefore, this study recommends that households in Bokoli location should be advised by policy makers to reserve at least half of their farms for food and secondary crops. This is a very viable option if people in Bokoli location have to break out of the *korokoro* vortex. This is because in my view there is no meaningful existence for

many people in Bokoli location because their lives are now held at ransom by the sugarcane crop. Yet more and more farmers are still contracting with the NSC and continue to put a large proportion of their land under sugarcane at the expense of food crops.

4. Development policies should devise a way of ensuring that women also have direct access to agricultural education, training, improved inputs and credit. According to FAO (1988), increased food production can also be realised by ensuring that women have decision-making rights in their households. Such rights are especially crucial in areas, such as Bokoli location, where women are customarily forbidden to acquire the little deeds of clan lands independent of their spouses, FAO recommends that land use rights should be used instead by development policies aimed at stimulating the production of food crops.
5. It is recommended that protecting women's land use rights means they should also inherit part of the livestock, agricultural machinery and other property of their households. This will give women additional initiative to stimulate food crop production.
6. There is a need to start and promote women's savings groups and cooperative which can be used to facilitate the financing of investments beyond the capabilities of individual women. (Dey 1988).

These recommendations have wide empirical and policy implications beyond Bokoli location, and indeed Bungoma district. The question of food production and adequate food supplies are among many of the problems facing rural areas in Kenya in particular, and Africa in general. Food production is directly connected to questions and problems that deal with sickness, poverty, hunger, nutrition, health, unemployment, under-employment and rural out-migration.

Endnotes

- 1 In this study I have adopted the term household as the unit of analysis instead of the term family. The definition of the United Nations Office at Vienna (1991:33) has been instrumental in this regard. It has stated that: "households are usually families in the sense that most of their members are kin of some kind, but not all family members live in the same household and households may include people who are not family members." In Bokoli location there is no family which is nomolithic, pure and nucleated with similar needs and interests (see also Kertzner 1991 and Little 1985).
- 2 The Central Bureau of Statistics (1981) defines a household as "comprising of a person or group of persons generally bound by ties of kinship who normally resided together under a single roof or under several roofs within a single compound and who shared the community of life in that they were answerable to the same head and shared a common source of food." (Underlining in the original).
- 3 The Central Bureau of Statistics (1981) defines head of household as "one recognised as such by all the members of the household. He or she must have been a member of the household."
- 4 KNA: File No. 1911
- 5 According to the Central Bureau of Statistics (1981), Kshs. 2,000/00 per family per year is regarded as the poverty level line. This figure is thought to be rough indicator of the extent of poverty and also includes the imputed value of subsistence production, based on the number of people defined as landless, destitute, undernourished as well as the number of inadequate land-holdings.
- 6 KNA: File No, PC/NZA/1/1. Annual Report, Nyanza Province, 1905-6.
- 7 KNA File No, DC/EN/3/3/2. Also Hasani Kuloba, interviews 1993-94.
- 8 This is a *Kiswabili* word for beer.
- 9 This is a type of orange juice.
- 10 KNA: File No. AGR/KSM/1/666

- ¹¹ KNA: File No. AGR/KSM/1/48. Investigational Works: Land Tenure and Social Customs, 1950-51
- ¹² Daily Nation, Monday March 2, 1992

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