

|| SOCIO-ECONOMIC AND CULTURAL
FACTORS INFLUENCING FOOD
SECURITY STATUS OF CHILDREN
UNDER FIVE YEARS IN SIAYA
DISTRICT, WESTERN KENYA ||

BY

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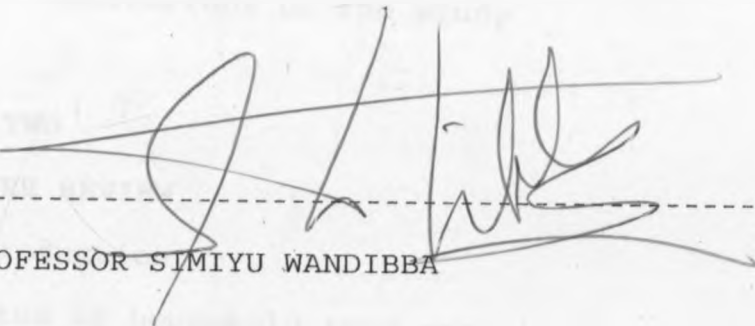
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LIST OF ACRONYMS

CBS	- Central Bureau of Statistics
FAO	- Food and Agriculture Organization
FGDs	- Focus Group Discussions
KEDHAR	- Kenya Denmark Health Research project
ILRI	- International Livestock Research Institute
NGOs	- Non-governmental organizations
OAU	- Organization of African Unity
ROK	- Republic of Kenya
UN	- United Nations
UNICEF	- United Nations Children's Fund
WHO	- World Health Organization
WMSII	- Welfare Monitoring Survey II

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ABSTRACT

This study investigated the socio-economic and cultural factors that affect the food security of children under five years in Boro and Usigu Divisions of Siaya District in Western Kenya. Food insecurity is a common problem in the area and children under five are the most vulnerable group that are affected by the problem. Children always need adequate nutritious food for body maintenance and growth. Fieldwork for this study was carried out between August 1997 and August 1998.

The overall objective of the study was to investigate how socio-economic and cultural factors affect the food security status of children under five years in the two divisions. The study had five specific objectives as follows: First, to document the extent to which the availability of food influenced the food security status of children under five years. Second, to examine the extent to which eating habits and beliefs concerning the consumption of certain foods influence the food security status of children under five years. Third, to determine the influence of food distribution systems by various households on the food security status of children under five years. Fourth, to examine the influence of income levels of heads of households on the food security status of children under five years. Fifth, to investigate how decisions made by powerful individuals in the household, such as husbands, mothers-in-law and senior wives, influence the food security status of children under five years.

The methods of data collection used were structured interviews, participant observation, case studies, focus group discussions, key informants and documentary sources. The sampling was done using probability sampling procedures, namely, simple random, cluster and systematic sampling. The main respondents were women of reproductive age, that is, those aged between 15 and 49 years, and who were mothers of children aged under five years. A total of 288 women were interviewed, 144 in each of the two Divisions.

Data were analysed through both qualitative and quantitative methods. Data from focus groups, case studies and key informants were analysed qualitatively, whereas those from structured interviews was analysed quantitatively. The qualitative methods were descriptions and explanations, while quantitative ones involved calculations of frequencies and percentages.

The main findings of the study were as follows:

First, most respondents cultivated very small pieces of land which did not yield enough food crops to last them from one harvesting season to another. This reduced the level of food availability in their households. Second, there were a number of foods that were prohibited to children under five years, notably meat and certain types of fish such as mud-fish and Nile perch. In addition, certain types of food were considered to be particularly nutritious to children. These included traditional vegetables such as the popular

Corchorus olitorius (**mrenda**) and *Amaranthus hybridus* (**ododo**) which are believed to be easily digested by the children's tender digestive system.

Third, food sharing between neighbouring households was found to be a cherished cultural practice that was beneficial to children's food security since it enabled them to consume the varieties of foods produced in the neighbourhood. Fourth, lack of stable income hampered respondents from improving the level of food security in their households. Finally, children's food security was dependent on decisions made by powerful individuals in the households such as mothers, fathers, mothers-in-law and grandparents. This study recommends that further research needs to be done concerning traditional foods that are suitable for children under five years in order to improve their food security.

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

This study examined socio-economic and cultural factors that affect the food security of children under five years in Usigu and Boro Divisions of Siaya District, Western Kenya. Field work was done for one year between August 1997 and August 1998.

Food security can be defined as *access by all individuals at all times to an adequate diet for an active healthy life* (FAO 1994). This definition implies that food ought to be produced or acquired from the markets and the available food should be made accessible to all members of the household at all times.

The essential elements of household food security are the availability, adequacy and accessibility of food. On the other hand, food insecurity means lack of access to sufficient food. Household food security is particularly important in Kenya's rural areas where a great number of households rely on their own individually produced food, and have little income to enable them purchase food from markets or any other place. Food security has proved to be a difficult condition to achieve, particularly in Boro and Usigu Divisions of Siaya District. These Divisions constitute some of the areas with high rates of malnutrition in Kenya.

Republic of Kenya (1988a) and Jansen (1997) observes that local communities around Lake Victoria are among the most food insecure.

Although a lot of fish is taken away from the region, many of the local people do not have the purchasing power to buy the fish. Consequently, most of the fish is sold to far away people or is exported after being processed in factories located in the urban areas far away from the region. In addition, modernization processes such as the introduction of exotic crops, have contributed to the diminishing of the indigenous food crops that served to maintain food security in most households.

It is observable that Kenya's food security policies are articulated in sessional papers and development plans. For instance, Sessional Paper No 10 of 1965, the 1978/83 Development Plan and Sessional Paper No 2 of 1994/95, all articulate government policy concerning the attainment of food security for the people in Kenya. The government hopes to achieve increased food production and security through a number of ways, such as improvement in the volume and efficiency of farm inputs and discouraging cultural practices such as that which requires that senior members of a household plant their crops before the juniors could plant theirs. This practice often makes the juniors miss to plant their crops at the right season, thus leading to lower crop yields (Republic of Kenya 1994a).

The major problems that cause food insecurity have been identified as erratic and unfavourable weather conditions which lead to prolonged drought, lack of technological advancement in food production and processing, and negligence of the more adaptable traditional food crops. Other problems include overwhelming dependence on the female population who do not have the necessary skills or proper infrastructural support to produce the food (Orodho 1998). Furthermore, the technology employed in food production and processing is also important in determining the level of food yields and the palatability of the food. In addition, the type of food storage facilities that are used is also important in preventing food spoilage and wastage. Finally, the nature of animals that are kept determine the type of animal products consumed by members of the households, especially foods that are regularly consumed by children under five years.

Food security is particularly important for children under five years due to the fact that at this stage in life, they are more vulnerable since they depend entirely on the efforts of the older members of the household for all their food needs. Children need to feed more frequently than adults because they require more energy foods for playing, they also need more proteinic food for body maintenance and growth. In addition, since their bodies are in the process of developing and their immunity not yet fully developed, they are more susceptible to disease, and so need more vitamins and minerals for body protection against disease.

Furthermore, since children are the most important resource for the future, their well-being and potential should be developed at all costs (UN, 1997:47). This potential cannot be realized unless their food security needs are satisfied. It is, in fact, for all these reasons that children's food security acquires more significance than that of older people. The cultural factors that have been delineated as affecting children's food security include the customs, practices and habits that have evolved through time. Cultural practices that affect children's food security may include foods that children are allowed or prohibited from eating. Availability of such foods in the households may be determined by the distribution mechanisms used and the decisions made regarding which foods are to be produced and consumed by these children. Other cultural factors investigated by this study were how decisions made by powerful individuals in the household, as well as how food exchanges and transactions affected the food security status of the children. Other factors included social factors such as the systems of food sharing between and within households. On the other hand, the economic factors include income levels of heads of households and other bread winners in the households as well as the level of education of such heads.

In Kenya, the problem of food insecurity is particularly common among vulnerable groups such as children under five years, the aged and the sick members of the society. Among the factors that have

been identified as being responsible for food insecurity among communities and individuals alike, are ignorance or lack of information concerning the preparation and consumption of adequate nutritious foods, cultural beliefs and dietary practices

(UNICEF 1990), and misunderstanding between spouses (Whyte 1997).

In his study in Vihiga District, Orodho (1998:121) identifies land fragmentation, large family sizes, low educational levels, gender inequality and high rate of male out-migration, as the factors negatively affecting food production in the District.

Muyekho (1994:14), in a study in Webuye Division of Bungoma District, identified lack of advanced technology as being a great hindrance to increased food production, emphasizing that in a situation where farmers used traditional technologies such as short hand hoes for farming, labour becomes an increasingly critical factor in ensuring high food yields. On the other hand, Oyaya (1998:91) observes that poverty is a major factor that hinders high production of food in Kajiado District. He goes on to state that poverty has been aggravated by the breakdown in the indigenous social support systems that used to ensure that nobody was absolutely poor, dispossessed and landless, pointing out that pastures were communally owned. In her study in Kisii and Nyamira Districts, Omosa (1998b) also identified poverty as being a major factor that caused food insecurity. Other scholars who have associated poverty with food insecurity include Todaro (1984), Rempel (1984) and Manson (1985).

Thus, food insecurity is caused by a myriad of factors, all of which demand thorough investigation. This study was carried out in the two Divisions of Boro and Usigu because of the fact that these areas suffer from acute food security problems (Republic of Kenya 1994b). Other areas that have been noted to have similar problems, particularly for children under five years, are Kilifi, Kitui, Makueni and Kwale (Mwadime et al. 1995).

1.1 Problem statement

Siaya is one of the Districts in Kenya with acute food insecurity problems, particularly among children under five years as well as other vulnerable groups such as pregnant and lactating mothers, the aged and the sick (Mwadime et al. 1995). The standard of living of many people in the District is also lowered by the high rates of tropical diseases, such as malaria, and water-borne diseases, such as typhoid and diarrhoea, as well as afflictions such as intestinal parasites, measles and anaemia, which mostly attack vulnerable groups, of whom children under five years form the majority.

Mwadime et al. (1995) observe that mothers' care and nutrition are of paramount importance if the nutritional needs of babies are to be improved. This is because, at this stage in life, mothers and babies are very much together physically, and the mother's milk still remains the most nutritious type of food for babies (UNICEF

1990).

Food insecurity is a common and complex problem to which no single cause can be attributed. Among the factors that have been attributed to it are parental levels of income, age, educational level, occupation, cultural beliefs and practices, maladministration of available foods, sex discrimination, family strife or misunderstanding between spouses and other members of the family (Njeru and Macharia, 1996:7).

Food insecurity among children is particularly serious because of the fact that children need adequate nutritious foods at this stage in life for body maintenance and growth. Lack of adequate nutritious food may be a cause of malnutrition, a condition which interferes not only with the physical development but also with mental development and emotional suffering that it causes its victims. Thus, a malnourished child can never realize his/her optimum mental capacity. It is, therefore, important to investigate the factors that account for food insecurity in various parts of this country. This ought to be done by taking into consideration the major components of food security, namely, availability, adequacy and accessibility of the food. This study, therefore, investigated socio-economic and cultural factors that affect the food security of children under five years as the most vulnerable members of the household and whose health and physical development is at a critical stage in the life cycle.

The study endeavoured to understand those factors that influence food availability, distribution and consumption within the household and how they affected the food security status of children under five years. Particular emphasis was put on the beliefs associated with the feeding of the children. Also examined was the influence of powerful individuals in the households such as husbands, mothers-in-law and senior wives, and how their decisions affected the food security of children under five years.

A number of studies have shown that traditional beliefs held by members of some Kenyan societies deny children and other vulnerable members of the societies access to adequate nutritious foods. The Luo society is known in the literature to be among those societies that firmly hold on to some of their traditional beliefs (Cohen and Atieno-Odhiambo 1989).

Children who are not fed on adequate nutritious foods suffer from a variety of diseases such as kwashiorkor, marasmus and stunted growth. Also, because of unfairness in the distribution mechanisms, children are often denied access to certain well known nutritious foods. Children depend entirely for their survival on the decisions made by adults regarding food security in the household. However, such decisions are not always in favour of the needs of the children. Powerful decision-makers in the household may take decisions that are not in favour of the children because of

cultural factors.

Similarly, children may suffer from diseases that are closely associated with food insecurity but because of established beliefs regarding the way people perceive such diseases, many people may not interpret those diseases among their children to be symbolizing food insecurity. For example, *chira* is a well known condition of ill-health among the Luo. This condition could be caused by malnutrition but people often associate it with the breaking of certain cultural beliefs (taboos) or contravention of societal norms (Whyte and Kariuki 1997; Cohen and Atieno-Odhiambo 1989). The World Bank (1989) observes that in order to improve the food security of children, progress must be made on increasing food availability in the households and also in making efforts to reduce the incidences of diseases that reduced their food absorption levels and so weakened them.

1.2 Research questions

Arising from the aforesaid, this study sought to answer the following five research questions:-

- (i) To what extent does food availability influence the food security of children under five years?
- (ii) How do eating habits and beliefs concerning the consumption of certain foods affect the food security of children under five years?

- (iii) What is the influence of food distribution and transaction systems observed by various households on the food security of children under five years?
- (iv) How do income levels of household heads affect the food security of children under five years?
- (v) How do decisions made by powerful individuals in the household impact on the food security of children under five years?

1.3 Objectives

1.3.1 Overall Objective

The overall objective of this study was to investigate the extent to which socio-economic and cultural factors affect the food security status of children under five years in Usigu and Boro Divisions of Siaya District, Western Kenya.

1.3.2 Specific Objectives

- (i) To document the extent to which the availability of food influences the food security status of children under five years.
- (ii) To examine the extent to which eating habits and beliefs concerning the consumption of certain foods influence the food security status of children under five years.
- (iii) To investigate the influence of food distribution systems by various households on the food security status of children under five years.

- (iv) To examine the influence of income levels of heads of households on the food security status of children under five years.
- (v) To investigate the extent to which decisions made by powerful individuals in the household, such as husbands, mothers-in-law and senior wives, influence the food security status of children under five years.

1.4 Justification of the study

This study provides anthropological information concerning economic and socio-cultural factors that are closely associated with the food security of children under five years in the area of study.

The study is within the Kenya Government Policy Framework of achieving food security for its people (UNICEF/GOK 1998:143).

It should be noted that social and cultural factors have not been given as much emphasis when investigating the causes of food insecurity such as food sharing and exchange practices and food beliefs (taboos) that govern the eating habits of different household members. This study attempted to fill this gap in knowledge by making an in-depth examination of the role of socio-cultural factors in children's food security. Among the factors that were examined were food sharing between neighbours and beliefs that hampered children from having access to particular foods. Sen (1981) points out that food security can exist without any substantial decline in the general food supply. He also emphasized

the fact that even when there are widespread food shortages they do not affect everyone uniformly. According to him, people can suffer food insecurity if their entitlements decline. Food entitlement here refers to the ability of people to procure food, whether by production, purchase, exchange or gift (Sen 1981).

In many parts of Kenya, including Usigu and Boro Divisions, the process of westernization and modernization has contributed to many people preferring exotic foods to foods derived from indigenous crops. Therefore, crops such as maize, Irish potatoes and rice are favoured over crops such as sorghum, millet and cassava. This study investigated how these food preferences and perceptions affected the food security status of children under five years in the area of study. It was deemed important to unearth those perceptions that prevent people from feeding their children on some nutritious foods, and thereby make suggestions as to how such perceptions could be changed.

Another justification for this study is that it investigated the factors that lead to variations within and between households (e.g., monogamy versus polygyny) as far as the food security status of children under five was concerned. The study also sought to investigate the variations between the food security of children whose mothers combined farming and business activities and those whose mothers depended solely on farming. It was envisaged that an understanding of such variations would go a long way towards making

us understand the main factors that contribute to food security and insecurity at the household level. An in-depth examination of these variations is, therefore, important in the realization of the government's stated objective of achieving food security for all groups of its people as articulated in its sessional papers and other policy documents (UNICEF/GOK 1998). It is, thus, hoped that the Government, donors and non-governmental organizations will use this information to institute appropriate intervention programmes with the aim of alleviating food insecurity in the study area.

It has been established that food self-sufficiency at the national level does not guarantee self-sufficiency at the household level (UNICEF/GOK 1998:146). This means that studies that focus on household food security need to be given priority. This study attempted to achieve this objective by focusing not only on household food security but also on children's food security. It also endeavoured to identify some of the programmes that could be instituted in order to alleviate the problem. Among the programmes that could be instituted include nursery school children supplementary feeding programmes, provision of certified seeds and high breed animals to help increase food production.

This study also investigated the various causes of food insecurity and the coping mechanisms that the Luo employ in order to survive times of food shortages. The study, therefore, put emphasis on the reinforcement of cultural practices that serve to ensure food

security of the Luo society, such as the production and consumption of traditional vegetables. Those values that enable people to achieve food security for all the members of the family and more particularly the vulnerable ones, such as children under five years, ought to be investigated and, if possible, reinforced.

It may be argued that the people living around Lake Victoria do not experience food insecurity due to the plentiful supply of fish in the lake. However, a study by Jansen (1997) observes that the local communities around Lake Victoria are among the most food insecure groups. Despite the large quantity of fish taken away from the region for export and fish-meal production, Jansen states that most of the fish goes to the factories to be processed for export rather than being sold out to the local people for home consumption. He further observes that the modern methods of fishing that are used, such as trawling, have made the Lake lose a variety of indigenous types of fish, thereby making it difficult for the local people who depended on such fish, to maintain their food security.

This observation also supports Lester Brown (1994:177) who wrote that trends in recent years in food output per person have been declining and the fish catch per person had declined some seven percent from its historic high in 1989 and that generally human demands are approaching the limits of oceanic fisheries to supply fish, and of rangelands to support livestock. This indicates that the problems of food security that the Siaya people face are part

of international trends in food supply.

In addition, this could imply that the indigenous methods of ensuring food security have collapsed and that now the people have to design new ways of acquiring adequate and nutritious foods for all of their household members, including children under five years. This study shows that cultural practices such as food beliefs (taboos) are important factors that influence the level of food security of children under five years.

Abila and Jansen (1997) also observe that even if fish was available in the markets around the Lake, the local people do not have the purchasing power to compete with the factories. In addition, K'Okul (1996) observes that if the food security of communities around Lake Victoria has to be maintained women, who form the majority of the farmers, have to be supported since a great number of the male folk migrate to the urban areas in search of wage employment. Thus, food security in this area is a real problem that deserves further investigation. This study is, therefore, among the various attempts that are being made by scholars to try and find ways and means of alleviating the problem of food insecurity among the communities in Western Kenya. The study should also be a good reference material for students of cultural anthropology who are interested in studying the role of culture in determining people's survival as social and economic entities. Other studies which indicate that there is food

insecurity in Siaya District are those of Cohen and Atieno-Odhiambo (1989) and Republic of Kenya (1997a).

It should also be observed that food is the most basic of all necessities of life. Consequently, a study of the food ways of a community constitutes an essential element in the understanding of the overall culture of any community. Food is necessary for the maintenance of the health of the members of a given community. An unhealthy community may not be in a good position to cope with the challenges of living. Such a community is also highly unlikely to engage itself vigorously in development activities.

1.5 Scope of the study

This study examined the food security problems of children under five years at the household level in Boro and Usigu Divisions of Siaya District. It did not, therefore, deal with the food security problem of other vulnerable groups such as the aged, the sick, refugees, etc. It also did not deal with establishing the nutritional status of individual children but only with examining the socio-cultural and economic factors that impact on their food security. For this reason the study did not use the anthropometric methods of weighing the children to determine age for height and weight. However, it investigated the eating habits and beliefs in order to identify those that had direct bearing on children's food security.

1.6 Limitations of the study

The study was limited by the fact that a few of the respondents could have given unreliable information on what foods they actually gave their children at particular times. This limitation, commonly known as prestige bias, was overcome by asking the same question at a later time in a different wording to cross-check the answers given earlier. Furthermore, by staying in the community for a considerable length of time, the researcher was able to observe for himself what the children were commonly fed on. The study was also limited in the sense that the researcher was not a native speaker of the local language, Dholuo, being a member from another community. However, this limitation was overcome by engaging indigenous field assistants who were quite fluent in the language. In addition, the structured questionnaire was translated by competent Luo linguists. Finally, I endeavoured to learn the language during my stay in the study area.

The study was also limited by some respondents giving incorrect information on what the types of food they normally fed their children. However, this limitation was overcome by the use of open ended questions which allowed respondents to explore the overall food security situation as they know it in all seasons. The relatively long time (one year) I stayed in the field also enabled me to make use of the participant observation method to see how the people fed their children and the mechanisms they employed in overcoming their food security problems. Initially, I had one

killer assumption that if there was a major famine in the area the study could have been redesigned. Fortunately, there was no famine during the study period.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature that deals with some of the factors that constrain the achievement of food security at the household level. Particular emphasis is put on those factors that affect the food security of children under five years. The chapter commences by examining studies that have dealt with issues concerning food production and security at the international and national levels. It reviews the food security scenario in Africa and Kenya and also delineates the major socio-economic and cultural factors that have been identified as the major causes of food insecurity.

2.1 Status of household food security in Africa

As already stated, food security can be defined as access by all individuals at all times to an adequate diet for an active healthy life (FAO 1994). Central to this definition is the means for gaining access to an adequate diet. World Bank reports have always warned of the consequences of food shortages, hunger and famine in Africa (World Bank 1977, 1981, 1986, 1988). Similarly, a number of FAO reports have also warned of similar consequences (FAO 1985, 1990a, 1994). Others who have sounded similar warnings include OAU (1980, 1985), Alila et al. (1993), Bates (1989) and Bigman (1982). Glantz (1987), for instance, presents a convincing argument that,

since independence, African governments have adopted a set of economic policies that reduce the economic incentives to agricultural producers by shifting the internal terms of trade against the countryside. Similarly, Hart (1982) points out that agricultural policy in independent Africa can be understood as an attempt to transfer economic resources from the rural producers to the state, to be expended on such services as health, education and the expansion of the rural infrastructure.

Guyer (1987:2) observes that Africa was once a continent seemingly immune from the kind of catastrophic famine which affected millions in Asia during the first half of the twentieth century. However, Africa has now become associated with the intractable under-nutrition and malnutrition associated with drought, civil conflict and impoverished labour reserves. Hart (1982) presents a gloomy picture of disease and poor farming at low levels of productivity, limited by transport facilities and adverse climatic conditions, while Pala (1985) identifies the colonial period as the beginning of deterioration of food production in Africa. At the same time, Walter Rodney (1972) remarks that the African peasant entered colonialism with a hoe and came out of it with a hoe, the only difference being that the hoe carried into colonialism was locally produced while the one coming out was imported.

On the other hand George (1988) observes that Africa's problems, including those of food insecurity, can be blamed on the debt

problem, pointing out that indebted countries have not just borrowed money but have mortgaged their future as well.

The World Bank (1989:7) indicates that more and more families in African countries are facing starvation. The report further points out that severe food shortages in Africa began in the 1960s and have now become widespread. It paints a grim picture regarding sub-Saharan Africa's food security situation by pointing out that more than 100 million people are threatened with chronic food insecurity. The Bank recommends that in order to adequately address this problem, Africa must expand its food production and the target should be a 5 per cent growth per year. The Bank estimates that this growth rate would be enough to feed the growing population of approximately 2.75 per cent a year, improve nutrition by 1 % a year and progressively eliminate food imports by 0.25 % a year between 1990 and 2020 (World Bank 1989:7).

In the same report, the Bank also points out that in order to make significant improvements in the overall food security in the continent, particular attention would have to be paid to improving the food security of vulnerable groups such as children under five years, pregnant and lactating women, the aged and the sick. In particular, special food subsidy programmes should be targeted at malnourished children and women (World Bank 1989:7). It should, however, be noted that despite the gloomy picture presented above, a few African states have made strides into trying to achieve food

security. For example, Davison (1988:90) observes that Cameroon was up to 1988 still not dependent on food imports, and was producing 96% of its total national consumption. To maintain self-sufficiency, the Cameroonian government emphasized policies that not only increased production of cash crops for export but also increased food production.

A number of factors have been identified as being responsible for the decline in food production in Africa. Chief among these are the adverse weather conditions which lead to prolonged drought and decline in the production of nearly all the crops, especially maize, wheat, rice, cassava and potatoes. That decline has been in the range of 0.5 per cent for cassava to 2.7 per cent for maize. The World Bank (1989) estimates that Africa needs a food production growth rate of 5 per cent in order to adequately feed its growing population.

2.2 Overview of the food situation in Kenya

The World Bank (1989) points out that although Kenya has some good agricultural land, this land is very limited. It is estimated that only 17% of the land surface of Kenya is good agricultural land. Other factors that adversely affect the food security of people in Kenya include the unreliability of rainfall, and lack of advanced methods of farming. These, coupled with the fact that small scale farming is a women's and children's activity, have combined to increase the level of food insecurity in Kenya (Orodho 1998). In

addition, lack of extension services offered to the small scale women farmers in the rural areas has also been cited as a factor in aggravating the low levels of food production (Pala 1976).

Poverty is another factor that contributes to low levels of food production and security, especially in the rural areas. Among the scholars that have identified poverty and low income levels as contributing to food insecurity is Shipton (1989), who points out that food security can be caused by a series of bad harvests. Todaro (1984) observes that poverty and inequality in the distribution of resources are some of the major causes of social and health problems. On the other hand, Rempel (1984) asserts that poverty undermines a country's capacity to produce, thus leading to a situation of increased poverty and food insecurity. Hay (1976) attributes food insecurities among Luo women to poverty. Studies from other parts of the East African region also indicate that poverty is a major problem that affects nearly all forms of socio-economic and cultural development.

Furthermore, the high level of poverty in the rural areas continues to constrain a large section of the population. The level of food poverty has been noted to be particularly high in North-Eastern, Eastern, Nyanza, and Coast Provinces (Republic of Kenya 1997b). In addition, the incidences of food poverty have been noted to be particularly high among female-headed households, the unemployed and underemployed in both rural and urban areas, the landless and

the child headed households (Republic of Kenya 1994b). It is approximated that 47.76% of all adults in Kenya's rural areas are food poor. Manson (1985:109), Todaro (1984) and Rempel (1984) associate food insecurity with poverty. Odegi-Awuondo et al. (1994) assert that famine and food deficiency in Kenya are a manifestation of poverty and misuse of human and natural resources. On the other hand, UNICEF/GOK (1998:145) observes that in Kenya a decline in the production of maize is interpreted as a sign of food insecurity because of the fact that maize is the staple food for a majority of the Kenyan communities.

Latham (1985) associates food insecurity to lack of education and notes that in many parts of Africa, people have a false concept of what he terms "a full belly". To many people, a person who has never suffered hunger cannot suffer from malnutrition. Hyden (1980), Biseko (1995), Cohen (1982), and Greer and Thorbecke (1986a) attribute food shortages among some communities in Kenya to differing food production and consumption patterns.

It is important to point out that in the Kenyan context, food production activities are mainly carried out by women and children in the rural areas. In the pre-colonial period, for example, Gikuyu women were active in activities aimed at increasing food production and availability in their households. Clark (1980) observes that the nineteenth century Agikuyu had a mixed economy in which women and girls performed the bulk of the horticultural and food

processing activities while men and boys were responsible for tending livestock. This situation prevailed not only among the Agikuyu but also among most Kenyan communities, including that of the Luo. It should also be recognized that the women have, to this day, continued in their traditional roles whereby they are still in charge of most food production and processing activities.

Most of the women, however, do not own the land in the sense that they do not have land title deeds and are, therefore, unable to secure credit using the land as collateral. The Swynnerton Plan, especially, dealt a blow to the peasant women's economic position as agricultural producers, by individualizing holdings and awarding male heads of "households" title deeds. In this way, women's guaranteed access to cropland was endangered and their ability to secure loans for improvements on existing land circumvented. In addition, the plan's emphasis on cash cropping marginalized women's position as food producers (Davison 1988). They are also unable to pursue agricultural production activities because of their other competing activities such as child care. All these hamper their efforts to produce adequate food.

In order to improve food supply and availability in the household, women, who provide over 70% of the labour in the small scale holding (Davison 1988; UNICEF/GOK 1998; World Bank 1989) would have to be assisted by men and the youth and also by technologies which make their work easier. For instance, food processing technologies

that focus on lessening the work of rural women in food production and distribution should be developed and made accessible to them.

In the drier parts of Kenya, such as Usigu and Boro Divisions, as well as in other low potential areas of the country, such as arid and semi-arid areas, appropriate food production activities such as the keeping of milk yielding goats should be encouraged. It is estimated by UNICEF (1989) that the arid and semi-arid lands currently support 50% of the entire livestock population in Kenya, with the greater percentage consisting of sheep and goats, although cattle, camels and donkeys are also kept (UNICEF, 1989:38).

Furthermore, in a previous study McDowell (1976) has indicated that in order to improve the level of food security in the country, a lot more needs to be done in the areas of food preservation (storage) and distribution mechanisms. He notes that emphasis should be placed on simple, easily constructed domestic gadgets to reduce the physical work load of women, as well as improving the availability and quality of food supplies through better methods of cultivation and improved food storage, conservation and preparation. The author also points out that special emphasis should be placed on improving the availability of water supplies. While cultural practices that discriminate against certain categories of people from consuming some well known nutritious foods need also to be eradicated, it is worth pointing out that all the development plans in Kenya emphasize ways and means of

achieving food security (Republic of Kenya 1983, 1988a, 1997a). Cultural practices are given as being major determinants in the food security efforts of many communities in Kenya. Therefore, there ought to be improvement in the people's cultural practices in order to improve food security for all groups of people. This can be achieved through encouraging various people to ensure that there is equity in the distribution and consumption of food to all members of the household at all times. Note that vulnerable groups such as children and women, the aged and the sick, are the ones who have been identified as the most affected by food insecurity.

It is also important to note that Siaya District has been known to experience endemic food shortages. Cohen and Atieno-Odhiambo (1989) attribute food shortages in the area to the emphasis put on maize farming in an area that does not have sufficient rainfall to enable the crop to do well. Another reason that has been given is the migration of young people to urban areas in search of wage employment, thereby leaving the rural area with inadequate manpower for farming activities. On the other hand, Dupre (1968) attributes food shortages in the area to the breakdown in the farming system, such as the abandonment of the cultivation of traditional crops in favour of exotic ones.

Although the Kenya Government's food policies recognize the importance of focusing on household food security, very little emphasis has been placed on the problems associated with this new

focus. For instance, little emphasis has been put on levels of income, food transaction systems observed by various communities and the impact people in decision making positions at the household level have on vulnerable members in households. Previous studies have indicated that due to wrong decisions made by powerful individuals and also due to prevailing food taboos, some vulnerable members in households are denied their rightful share of food entitlement (Clayton 1964; Eicher and Staatz 1985; Sen 1981). The idea of food entitlement was first put forward by Amartya Sen, who noted that individuals often go hungry not because of the unavailability of food, but because of being denied their entitlement of the available food (Sen 1981).

The growth and general well-being of children under five years depend a great deal on household food security. Note that children should have access to an adequate and nutritionally balanced diet in order for them to grow up normally, both physically and mentally. It should be pointed out, however, that such vulnerable members of the household, more often than not, have less entitlement to the nutritionally available foods. For instance, Amartya Sen (1981) rightfully observes that the ability to command and, thus, to access adequate food is a function of one's entitlement package. Food insecurity often results from loss of entitlement to the required food, and food beliefs could be one of the root causes of one's loss of entitlement. According to Omosa (1998:28), a collapse in one's entitlement results from a breakdown

in the network of entitlement relations which may come about due to an unfavourable shift in the exchange entitlement mapping or a loss of possessions. Omosa (1998) points out that the entitlement approach explains how food security is gained and why some groups starve while others do not. In this study this approach is used to explain why some children are food secure while others are not.

There are a number of policy documents articulating the Kenya government's determination to achieve food security for all its citizens. These include sessional papers. For instance, *Sessional Paper No. 1 of 1965* (Republic of Kenya 1965), spelt out the elimination of hunger as a primary concern, along with ignorance and disease. On the other hand, *Sessional Paper No. 4 of 1986* (Republic of Kenya 1986) observed that, despite visible progress in agricultural production, the country continued to experience increases in malnutrition in some of its districts. There is, therefore, a need to address ourselves to the paradox that amidst increased investments in agriculture, food insecurity still continues to be a major problem afflicting various parts of the country.

It is also important to point out that access to food continues to be a major social problem in Kenya today. Women and children have continued to be the most vulnerable because their entitlement to food security has remained largely constrained by existing attitudes and practices (UNICEF/GOK 1998). It should, however, be

pointed out that food availability per se can never guarantee food security. A number of food beliefs and eating habits continue to hamper the ability of some individuals, particularly vulnerable groups, from having access to adequate nutritious food.

In Kenya, the problem of food insecurity is particularly common among vulnerable groups. Among the factors that have been identified as being responsible for food insecurity among communities and individuals alike, are ignorance or lack of information concerning the preparation and consumption of adequate nutritious foods, cultural beliefs and dietary practices (UNICEF 1990). It, therefore, means that food insecurity is attributed to a myriad of factors, all of which demand thorough investigation.

Reduction in crop diversity is partly responsible for the decreasing trends in food crop production. For instance, in his study in Western Kenya, Michael Whyte (1997:131) observed thus:

It appears that something resembling de-skilling the loss of producer autonomy has occurred. Hybrid maize cultivation is a case in point. But more generally the reduction in crop diversity, which had begun many years before, is a sign of a farming system which was losing its autonomy, becoming one component of a national system of production.

2.3 Co-operation between family members and food security

Whyte (1997) asserts that the way people relate to each other and the way they exchange food in their households and with neighbouring households may determine their food security status. He points out that co-operation between husband and wife/wives can influence the food security status of a given household. Furthermore, the system of food distribution and transactions observed by individual households may determine the food security status of the households.

Another factor that may influence food security is discrimination in the allocation of certain foods to individual members of the family on the basis of age, sex, levels of education and income, and of legitimacy. For example, among the Chagga of Tanzania, the legitimacy of children is an important factor in their food allocations. Thus, adopted and orphaned children may be denied certain foods. This condition may be termed as selective neglect (Howard 1994).

2.4 Farming system and food security

In the traditional Luo community, crops such as millet, groundnuts, beans and sorghum, were planted by broadcasting seeds. Inter-cropping has also been largely abandoned in favour of the modern method of single-cropping. These methods used to ensure food security by their optimum use of the available land. For instance, inter-cropping had the advantage of ensuring that if in a

particular season one crop failed to do well, the others would do well , thereby helping to reduce the risks of food insecurity. It also helped to maintain the soil fertility due to the fact that the various inter-mixed crops utilized different nutrients from the soil. Finally, it is a system of utilizing cultivated fields in an optimum manner. Thus, Ateng (1978:99) points out that in many rural areas in Kenya, inter-cropping is adhered to in spite of many years of extension advice that it reduces yields. This is because the farmers argue that although they get less output from each crop in a mixture than from a hectare of that crop in a pure stand, on aggregate they may get a higher gross margin per hectare if the mixture is treated as a single activity.

Longhurst (1985) states that three key factors need to be taken into account when examining food security at the household level, namely, the system of growing traditional crops, seasonality and women's activities. In another study, he analyses the role of famine relief food in solving some of the problems of food shortages in Africa (Longhurst 1994). In many parts of Africa, foods are categorized into field crops and garden crops. Field crops are usually major crops such as maize, sorghum and millet, whereas garden crops include vegetables, fruits and other crops that are considered to be supplementary foods.

It should be noted that in many communities people prefer growing field crops, that is, major crops rather than garden crops, in

great quantities. This may cause major food insecurities among the communities concerned in case of environmental changes that may affect the so-called field crops. For instance, commenting on the endemic food shortages in Siaya District, Cohen and Atieno-Odhiambo (1989) attribute food shortages in the area to the emphasis put on maize farming in an area that does not have sufficient rainfall to enable the crop to do well.

Furthermore, different crops are known to require different amounts of labour at various stages of their development. Maize, the staple food of the people in Siaya, requires a heavy labour input during planting, weeding and harvesting periods. The high rate of migration of young people to urban areas in search of wage employment, leaves behind inadequate manpower for maize farming activities. Furthermore, women find it difficult to use draught animals in ploughing the land without the assistance of the men. The type of ploughs used by the oxen are often too heavy for women to handle.

Dupre (1968) attributes food shortages in the area to the breakdown of the farming system. People no longer prefer using ox-drawn ploughs because of the need to devote more energy to the care of bulls and oxen which draw the ploughs. In addition, they do not have enough resources to devote to the hiring of tractors for cultivation. Furthermore, the certified seeds which people used to receive from the Kenya Seed Company are no longer easily obtainable

because of the exorbitant prices that farmers are required to pay in order to obtain them. In most cases, the prices for certified seeds and fertilizers are higher than the sale price of maize and other farm products. In brief, the farming system has simply broken down.

2.5 Cultural practices and food security

Thomas & Leatherman (1990) have examined some of the strategies employed by households in coping with seasonal shortages and suggest that the structure of the household, that is, whether extended or nuclear, is one of the major factors that determine the food security status of the household. The structure of a household also determines, to a large extent, the number of mouths to feed in that household and the number of hands available for production of food. Among the factors that have been identified by the World Bank (1986) as affecting children's food security is that solid food is often introduced too late. This means that children may not get enough nutrients from the liquid foods, such as porridge, that they are usually fed on before the introduction of the solid foods. In a number of cases, children's health begins to improve rapidly once they start being fed on the foods which adults eat, thus indicating that the time it takes to introduce solid foods is crucial to the overall food security of children.

Food security in the rural areas is enhanced by the traditional practices of sharing in the production and consumption processes.

The Luo community, for instance, cherishes the cultural practice of sharing in the consumption process of food. People exchange the foods they produce or purchase from the market, with friends, relatives and neighbours. These exchanges help in ensuring a balanced diet in the households in the sense that household members gain access to foods which they do not directly produce. Sen (1981) points out that an individual's food entitlement would be influenced by the exchange entitlements, which include his/her ability to exchange food and other resources. He goes on to emphasize that a person's exchange entitlement would be influenced by the purchasing power of the individual, the ability to exchange with others, or through seeking and receiving assistance and transfers (Sen, 1981:2).

The sharing and exchange of food also enables neighbours, friends and relatives to foster harmony in the community (Whyte 1997) which, in turn, helps to reduce anti-social behaviour such as food thefts. In brief, the system of food sharing and exchange enhances food security in the households by ensuring surplus food production and equitable distribution of available nutritious foods among household members.

2.6 Family structure and household food security

In a study on the relationship between family size and household food security, Watson (1991) points out that in Swaziland extended families hinder the production of enough food by limiting the size

of land devoted to food crops. It should be pointed out that an examination of family structure is important in any review of the food security of a household due to the fact that the food requirements of different members of the household are not homogeneous. For instance, children and other vulnerable groups such as pregnant and lactating mothers may need special diet. It should also be recognized that family units are not always cohesive. For instance, a polygynous household may not be as cohesive as a nuclear one. Certain cultural practices may dictate the level of food entitlement that various individuals have access to in the household.

UNICEF (1992) has examined some of the food practices followed by certain communities and which prevent some of their members from having access to nutritionally adequate food. The examples cited include those that require that certain members, for example, husbands/fathers as the heads of households, eat most or the largest share of the available food. Another factor that negatively affects children's food security is weaning children with foods that are not nutritionally adequate and restricting pregnant women, lactating mothers and infants from eating certain types of food. The study recommends that more research be directed at unearthing beliefs which prevent individuals in the household from having access to a nutritionally adequate diet.

2.7 Drought and food security

Odegi-Awuondo et al. (1994) assert that drought, though a natural phenomenon, recurs at specific periods. These scholars give a chronology of some of the major drought periods in Kenya, pointing out that drought occurs after an approximate interval of ten years. For instance, there were major droughts in 1960, 1970, 1980 and 1990. Therefore, this means that the nation could easily come up with specific modalities of combating the effects of drought, such as good food storage systems, and coordinated and early warning systems, thereby enabling Kenyans to maintain adequate preparedness for any drought situation.

Experience from other parts of the world, for example, that of India, indicates clearly that it is possible for a country to combat the adverse effects of drought through adequate preparedness. This can be done through intervening early in any drought episode, utilization of local knowledge, exchanging of food for work, rebuilding of lost livestock and giving the farmers every possible assistance by designing the right policies.

It has also been observed that food insecurity is not only a question of lack of production of sufficient food but rather that of ignoring the traditional coping strategies (Glantz, 1987:394). Indigenous knowledge systems that deal with food insecurity have largely been ignored (Odegi-Awuondo et al. 1994). For example, indigenous crops and livestock are not given as much attention in

terms of research and productive in-puts as much as the exotic ones. Consequently, many households that could have been food secure find themselves faced with what could be termed "self-imposed hunger".

Downing (1990) has evaluated the role played by climate and information monitoring systems in determining a community's food security in Kenya. He emphasizes the fact that adequate monitoring of a country's food security is needed at both the local and international levels. This is important in order to predict when drought and famine are likely to occur. Good prediction of drought conditions would enable a country, region or household to improve its food security through adequate preparedness by way of storing enough food or accumulating enough resources to purchase or acquire food.

Downing (1990) has pointed out that in order to improve the level of food production and security in Kenya, there should be an efficient climate and information monitoring system, both at the local and national levels. He gives an example of Kenya's experience in the 1984/85 drought and food crisis. He suggests a three-level system of food information and famine early warning that includes seasonal natural food balance information, data on household poverty, including estimates of vulnerability to climate, and economic variations and interventions based on individual entitlement and food deprivation. He is emphatic that stimulation

of the demand for food information beyond famine forecasting is crucial to the development and adoption of improved monitoring systems.

2.8 Programmes which address household food security

Due to the fact that Kenya's economy is agro-based, the citizens have always been encouraged to ensure food security by being sufficient in food production. Increased production and productivity have, therefore, remained central to the drive towards food security. Sessional Paper No.2 of 1994 on food policy argues that food security will be targeted through "setting the green revolution rolling" (Republic of Kenya 1994b).

To this end, projects and programmes aimed at food security continue to focus on agricultural research and proper dissemination of the research findings, availability of seeds and fertilizers, provision of credit and improvement in marketing and distribution of food. Most have, however, fallen short of enabling household members, specifically women and children, to realize their food security. Therefore, while existing government and donor funded projects and programmes have made remarkable strides, household food security, particularly for women and children, has remained unattainable. This is because most of these measures have continued to perceive food security as a supply problem whereas, in fact, it has to do with the means to access this supply. Policy measures aimed at providing incentives so as to stimulate food production,

ignore the fact that the basic factors of production, such as availability of land and capital, may not be accessible to the most vulnerable groups.

It is significant to note that while the identification of drought tolerant crops may have been a success, actual implementation has been hampered by the fact that sorghum, cassava and millet, for example, have remained women's crops. Indeed, only limited agricultural research has focused on some of these crops with the aim of addressing certain basic production concerns such as the heavy labour input required.

The World Bank (1989) observes that in order to meet the growing food needs from traditional crops, complementary improvements are needed in the technology of processing and storing local foods.

It also notes that the demand for exotic food crops in many sub-Saharan countries is due to their faster preparation time. The report further observes that good food storage facilities would improve the supply of food to the markets, thereby stabilizing food prices. This would enhance food security for households, particularly for the vulnerable members of the households.

Furthermore, the report observes that women constitute a large portion of the vulnerable population and so need to be helped, especially in employment and feeding programmes. Therefore, food subsidies should be focused on women if the food security

requirements of the children are to be met. It should be noted that for household members to consume more nutritively adequate foods, promotion of drought resistant crops in drought prone areas such as Usigu and Boro Divisions need to be encouraged. In addition, the rearing of small animals such as goats, sheep, pigs and poultry to provide households with animal products, would go a long way in improving children's food security.

This study asserts that food security may be greatly improved by better food storage mechanisms and the development of home gardens (kitchen gardens). It is also important to note that food production capacities could be improved by providing extension services and credit facilities to the women peasant farmers. Food production and security can also be enhanced by providing water to enable farmers to irrigate land, especially in drier areas such as the ones on which this study is based. Ndegwa and Green (1994:81) observe that provision of clean water may be the most effective way of empowering women to produce more food.

Previous studies also indicate that establishing agro-based industries to forestall the migration of men to far distances in urban areas can help improve children's food security (Orodho 1998). In many Kenyan communities, women and children suffer due to the fact that men have migrated to urban areas and plantations in search of wage employment. In such cases, women are left with a double workload. They have to perform tasks that are traditionally

assigned to them in addition to those traditionally assigned to their men who have migrated. This leaves them with less time to attend to food production activities.

The environment also plays a limiting role in people's food production activities. This is because a people's culture is also a product of their physical environment. For instance, certain animals may be preferred because they play a productive role in enhancing the physical environment, for example, cattle produce cow-dung which is used to manure the farm.

Odegi-Awuondo (1990) has made use of the ecological theory to study the food system of the Turkana people. He points out that due to adverse weather conditions, the Turkana eat certain foods that were not eaten normally by other communities who inhabit more favourable areas. They even eat donkey meat which other communities cannot even dream of eating. Njiro (1995) made a systematic study of the Atharaka and documented many coping mechanisms that the people use to survive periods of food shortages. She asserts that the people's knowledge of their environment is the basis of their survival even during periods of famine (Njiro 1995).

This literature review reveals that food insecurity at the household level is caused by a myriad of factors. There are immediate, underlying and basic causes of food insecurity. Immediate causes may include lack of income to purchase the

necessary foods while underlying causes could be inability to produce enough food. On the other hand, basic causes may include poor food policies and belief systems. Other factors include overpopulation, that is, too many children in the household, poor environmental conditions and insufficient development of human resources, among others.

Also, Goody (1982) has made a classic comparison of cooking, cuisine and class between the societies of Africa, Europe and Asia, observing that the food tastes of each community determine the types of food that it produces. He has also gone to great lengths in describing the production, consumption and distribution systems, both at the national and international levels.

2.9 THEORETICAL FRAMEWORK

This study was guided by the entitlement approach as its theoretical framework. The entitlement approach to the study of food security was first put forward by the economist Amartya Sen (1981). He postulates that food security stems from endowments and possessions that an individual has. Omosa (1998) points out that one's entitlements falls on any one of the following. First, is the ownership through commodity exchange (trade based entitlement), that is, the right to own what grows on the farm. This is called production-based entitlement. Second, is the sale of one's labour power for purposes of earning an income so as to purchase food (own-labour entitlement). Third, is the right to own what is given

in relation to others (inheritance and transfer entitlement).

Figure 2.1 illustrates the inter-relationship between the three forms of entitlement and their influence on household food security and ultimately on children's food security.

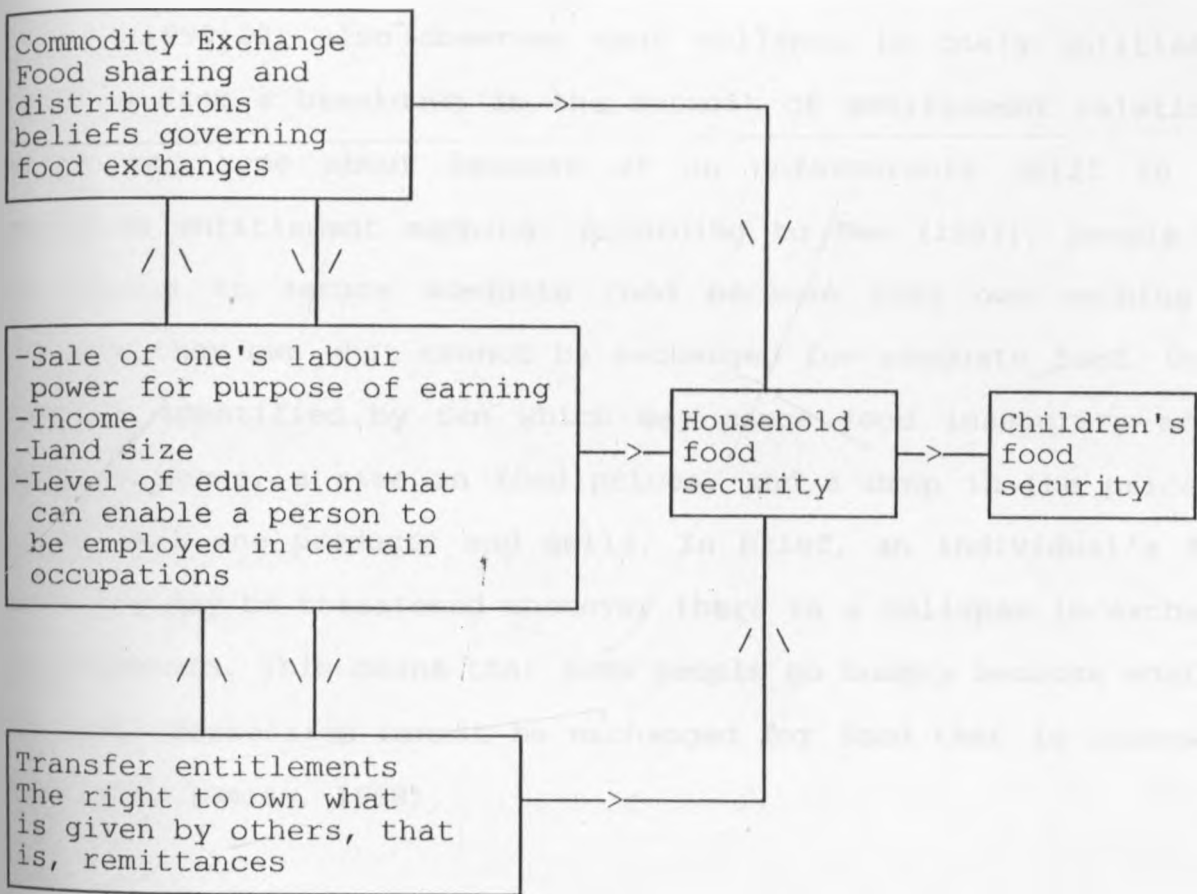


Fig. 2.1 Conceptual framework showing the relationship between the three forms of entitlement and household food security.

According to Sen (1981), food insecurity can exist without any substantial decline in the general food supply, emphasizing that

even when there are widespread food shortages, they do not affect everyone uniformly. Omosa (1998) observes that different groups and individuals have different commanding power, and that an overall food shortage brings out this contrasting power. She points out that the entitlement approach explains how food security is gained and why some groups starve while others do not.

Omosa (1998:28) also observes that collapse in one's entitlement results from a breakdown in the network of entitlement relations, which may come about because of an unfavourable shift in the exchange entitlement mapping. According to Sen (1981), people may be unable to secure adequate food because they own nothing or because they own what cannot be exchanged for adequate food. Other factors identified by Sen which may cause food insecurity are a fall in wages, a rise in food prices, and a drop in the price of goods that one produces and sells. In brief, an individual's food security may be threatened whenever there is a collapse in exchange entitlements. This means that some people go hungry because what is in their possession cannot be exchanged for food that is otherwise available (Omosa, 1998).

Operationalization of the entitlement approach

This study indicates that children's food security in both Usigu and Boro Divisions depended on their food entitlements. Children's food entitlement by and large depended on the entitlement of powerful members of the households such as mothers, fathers and

any other adult in the household responsible for feeding them.

This study therefore concurs with Sen (1981) that food security at the household level is influenced by the endowments which constitutes any of the elements mentioned earlier, namely ownership through commodity exchange (trade-based entitlement), the sale of one's labour power for the purpose of earning income, and the right to own what is given by others (inheritance and transfer entitlement).

In this study, children's food security was found to be influenced by the size of land under food production in their household, the type of food exchanges that the adult members of the family engaged in and the level of income of the family heads. All these factors indicate the entitlement approach is quite relevant to this study.

2.10 Hypotheses

- H1. Availability of food in the household has a direct influence on the food security status of children under five years.
- H2. Perceptions of household members of appropriate eating habits have no direct bearing on the food security status of children under five years.
- H3. The nature of food transactions and exchanges has a direct bearing on the food security status of children under five years.

H4. The higher the income level of the household head, the higher the food security of children under five years.

H5. Decisions made by powerful individuals in the household such as mothers, fathers, mothers-in-laws, senior wives and fathers-in-laws, concerning food allocation have a direct bearing on the food security of children under five years.

2.11 Definition of Terms

Food Security: Access by all people at all times to sufficient and nutritious food for an active healthy life. Its essential elements are the availability of food and the ability to acquire it.

Malnutrition: A condition that results from inadequate intake of nutrients, or from disease factors that affect digestion, absorption, transport and utilization of nutrients. Infectious diseases such as diarrhoea and malaria affect both the dietary intake and other processes.

Household: Refers to all people who stay in a common house and produce and consume together. Household in this study refers to the number of people who

regularly consume from the same pot.

Food Beliefs: These are beliefs associated with the acquisition and consumption of food, for instance, who should eat what food and at what time. They also include methods of handling of various foods as well as distribution, and disposal of surplus food by family members.

Transactions: Refers to the transfer of food between individuals and households and the sale of food to acquire income to enable household members to purchase other foods.

Culture: Refers to socially transmitted shared systems of knowledge and characteristics of a group of people.

Income: Total monthly income accruing to the family from various sources, including off-farm activities and remittances from other members of the family in wage employment.

Inter-cropping: Refers to the planting of more than one crop at the same time in one plot of land.

Family : Total number of individuals related to husband and wife and children living together and sharing food and other family resources.

Eating Habits: The way food is shared between family members, that is, the system of food distribution and consumption among family members.

Infrastructure: This includes facilities such as roads, hospitals, schools, water supply, irrigation and drainage.

Powerful individuals in the household: This refers to decision-makers in the household such as mothers, fathers and mothers-in-law.

Redistribution: Refers to accumulation of goods at some allocated centre and then their subsequent allocation to various individuals. This, in some sense, requires some central authority with sufficient power to compel people to surrender a portion of their goods. At the household level the husband holds that redistribution power as far as the redistribution of food between the various household members is concerned (Bohannon and Dalton 1962).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the study site, the study design, the sampling procedures that were used to select the respondents and the methods that were utilized to collect the data. In addition, the chapter briefly talks about the methods that were used to analyze the data, and concludes by discussing the problems encountered in the field as well the solutions thereof.

3.1 Research site

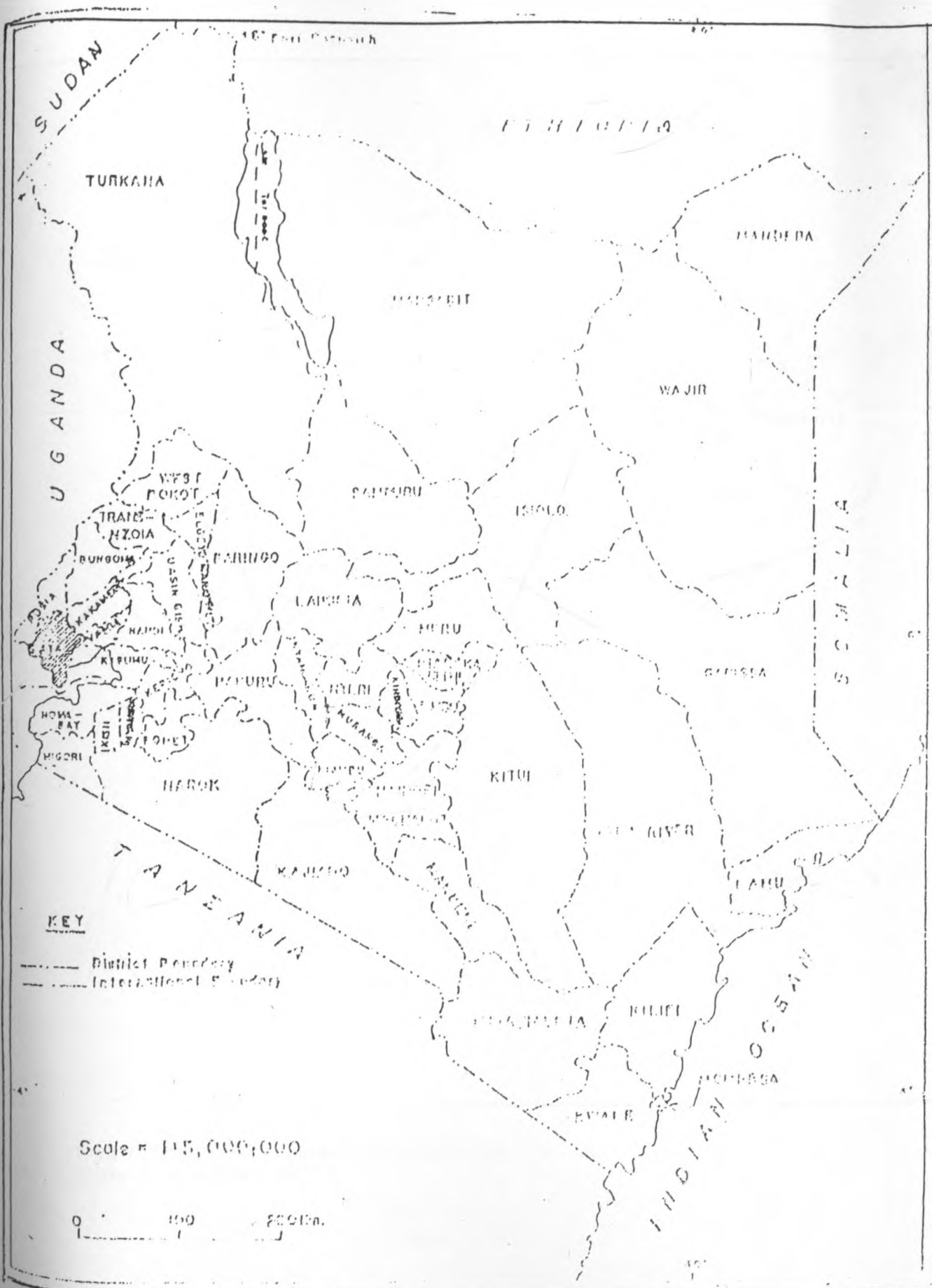
3.1.1 Location

Usigu and Boro divisions are located in Siaya District of Nyanza¹ Province in Western Kenya (Map 3.1). *Siaya District has since been split into Siaya and Bondo Districts, with Usigu going to the new Bondo District and Boro remaining in Siaya District.*

Siaya District is bordered by four other districts as follows: Busia District to the North, Vihiga and Kakamega District to the North-East, Kisumu District to the South-East and Homa Bay District across the Winam Gulf to the South (Republic of Kenya 1993a).

Bordering the district's land surface on the West is Lake Victoria, the second largest fresh water lake in the world (Map 3.2). The Lake has an area of 69,000 square kilometres, approximately the size of Ireland (Jansen 1997), and is shared between three countries as follows: Tanzania (49%), Uganda (45%) and Kenya (6%).

The distance from Nairobi, Kenya's capital city, to Usigu and Boro is approximately 450km.

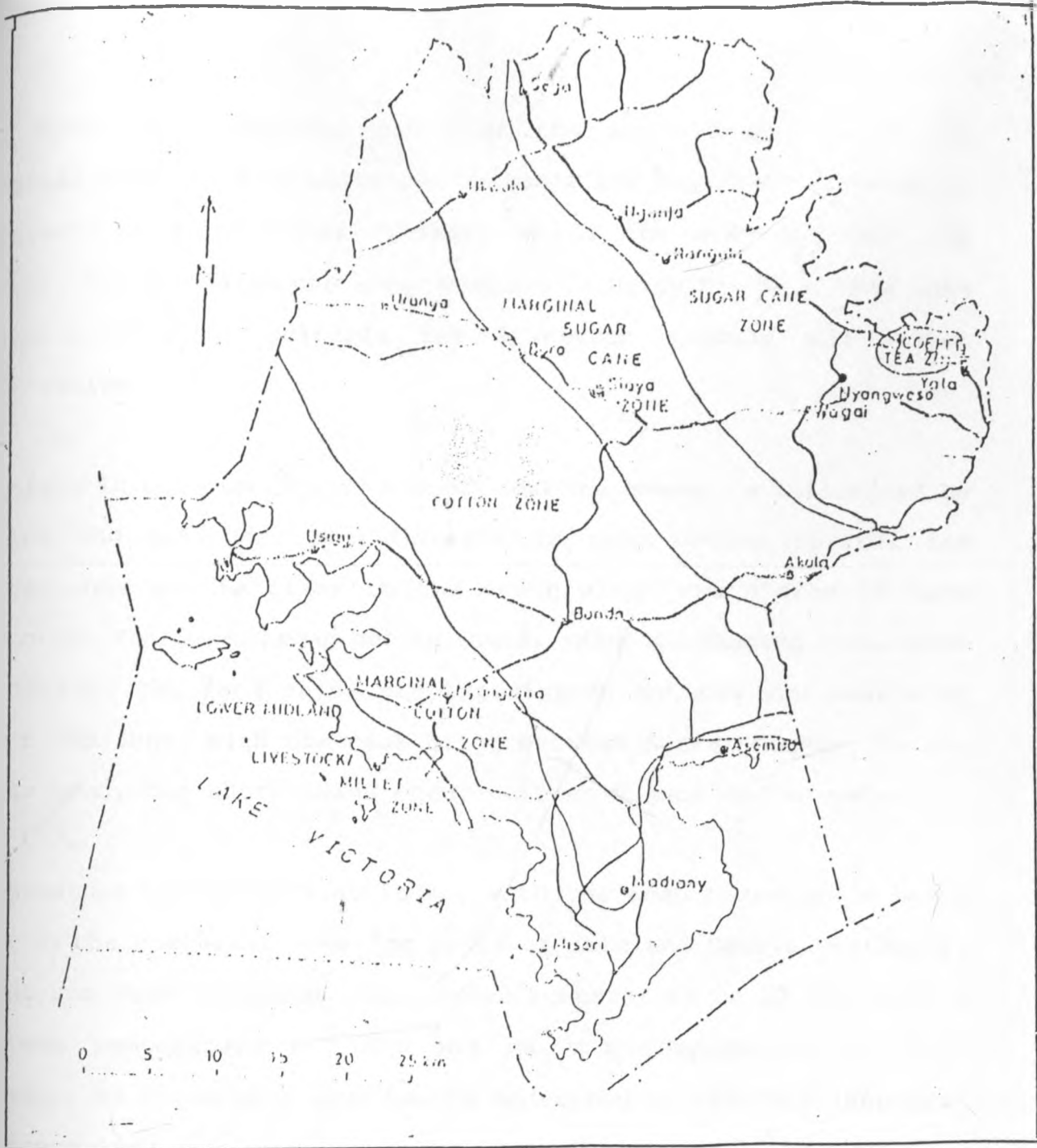


MAP 3.1: LOCATION OF SIAYA DISTRICT
(SOURCE: REPUBLIC OF KENYA 1994)

The two divisions are among the ten divisions that form Siaya District. These are Ukwala, Ugunja, Yala, Rarienda, Madiany, Uranga, Wagai, Boro, Bondo and Usigu. Among all the divisions, Yala division has the most fertile land and receives the most evenly distributed rainfall. Bondo, Boro and Usigu are the drier divisions (Were 1991). The District has a total area of 3,523 square kilometres out of which about 1,005 square kilometres is lake water under lakes Sare, Kanyaboli and parts of Lake Victoria (Republic of Kenya 1997b).

3.1.2 Physical features

Siaya District is drained by two major rivers, namely, Yala and Nzoia, both of which drain their waters into Lake Victoria via the Yala Swamp. The other rivers are small, and are tributaries of the two. The altitude of the District rises from about 1280m on the lake shore in the south to about 1430m in the north and east. Usigu and Boro Divisions lie within the latter altitude. There are scattered mountains rising to about 1280m near the lake shore, namely, Got Abiero and Nango in South Sakwa and Usenge Hills in Yimbo Location (Republic of Kenya 1983). The area is more suitable for economic activities such as growing of sugarcane and cotton, and livestock keeping (Map 3.3).



MAP 3.3: SIAYA DISTRICT, AGRO-ECOLOGICAL ZONES
(SOURCE: 'REPUBLIC OF KENYA 1994)

The different ecological zones of the study area include the marginal areas in Boro which are suitable for sugarcane farming and marginal areas in Usigu Division which are more suitable for cotton. There is also the lower midland in Usigu Division near Lake Victoria that is suitable for livestock keeping and millet cultivation.

Rainfall in the District is bimodal and its amount is influenced by relief and altitude. The district is much wetter towards its hinterlands and is drier to the south along the shores of Lake Victoria. The lower areas get an annual rainfall ranging from 800mm to 1600mm. The long rains are experienced between the months of March and June, with the peak being between April and May. On the other hand, the short rains occur between August and November.

Temperature varies with altitude, with the mean temperature being 21°C in the northeast covering parts of Yala and Ugunja Divisions; Usigu and Boro Divisions have a mean temperature of 22.5°C, with a minimum temperature of 15°C and maximum temperature of 30°C. Humidity is relatively high but is moderated by rainfall (Republic of Kenya 1997a).

3.1.3 The people

The District is predominantly populated by the Nilotic speaking Luo. These people are commonly referred to in the literature as the Southern Luo and have been extensively studied by scholars such as

Ogot (1967), Ocholla-Ayayo (1976) and Ominde (1967). They have a common culture which scholars often refer to as the Jo-Luo. This term may be defined as a nation of people who share a common Nilotic culture. The Luo are a patrilineal and patrilocal society that cherish egalitarianism in their world view. According to Shipton (1989), these people have culturally in-built levelling mechanisms that ensure that the relatively wealthy people use their wealth for the benefit of the society. People who accumulate wealth very fast without justifying it are often put under societal sanctions such as gossip and the fear of witchcraft, which serve as levelling mechanisms. It is perhaps due this fact that the rural people are so willing to share their food and other products with their neighbours since nobody would like to be put under societal sanctions for refusing to share the food.

According to the Republic of Kenya (1994a), the Luo population was estimated at 2,653,932. This makes them the third largest ethnic group in Kenya. The Agikuyu are the first while the Abaluyia are the second most populous groups. According to Cohen and Atieno-Odhiambo (1989), Siaya District experiences one of the highest net-out migrations of approximately 13,717 people per year. This is probably one of the highest ratios of out-migrants of any district population in Kenya, a phenomenon that may be attributed to the high rate of poverty in the District. Because of lack of agro-based industries in the area, many able-bodied men migrate to urban areas and plantations in search of wage employment.

3.1.4 Infant mortality rate

Despite some gains in controlling mortality in the district, infant mortality rates are still high at 89 per 1000, compared to the national average of 70 per thousand. It is also significant to observe that malaria still remains the major killer of the 0-5 age group. Other major diseases include respiratory tract infections and measles (Republic of Kenya 1997a). It should be noted that the high infant mortality rate keeps mothers pre-occupied with seeking medical cure and thus spending less time on food production activities. In addition, they declined to utilize family planning methods so that they can give birth to other children to replace the dying ones. Note that frequent and closely spaced births weaken the mothers, resulting in poor health and reducing their economic productivity (Republic of Kenya, 1997b).

3.2 Study design and sampling procedure

This study was cross-sectional and descriptive, and aimed at collecting data of a social and cultural nature to provide the necessary context for understanding the biomedical aspects of children's food security status and health. The study purposely interviewed mothers of children under five years. It is common knowledge that mothers are the closest and most relevant individuals in a household to report on children's food security status. A structured questionnaire was administered to 288 randomly selected mothers from a population universe of 104,000. In this study, the population universe comprised women with children under

five years, most of whom were between the ages of 15 and 49 years, that is, women who were still in their reproductive ages. Boro had 40 sub-locations and Usigu 49. The unit of analysis was the household because of the fact that it was the centre of food production, distribution and consumption.

Two sub-locations were randomly selected from the two Divisions and 144 households selected from each of the two sub-locations in each division. In all, therefore, 288 households were studied.

This sample size was considered large enough to give reliable and valid generalizations regarding the food security status of children under five years. The population selected was representative of the total population because systematic random sampling was used in the sense that after the first household was randomly selected, every fifth household was chosen as the unit of observation.

3.3 Methods of data collection

3.3.1 Structured interviews

This interview method (Appendix 1) was used to generate data pertaining to food preferences, dietary habits, procedures for food allocations between household members, the nature of food transactions between individuals and different households and variations in income levels between household heads. Other issues that were covered included the perceptions about balanced diet, food beliefs, suitable foods for weaning children under five years,

and procedures of sharing food within and between families and what effect these procedures have on the food security of children under five years. The respondents were also interviewed on the level of knowledge about causes of child retardation, among other pertinent issues. Pelto and Pelto (1970) observe that the interview method works best when combined with the participant observation method and I do concur with them. The main advantage of this method is that it allows the researcher to stick to the objectives of the study since all the questions are structured. The main weakness is that it is not easy to change the structure of the questions and so a pilot study should be carried out before the structured questions are finally administered to the respondents.

3.3.2 Participant observation

Haviland (1974) observes that participant observation is one of the chief ethnographic methods, and involves going out to live among the people under study. This method takes two major forms, participant and non-participant. In the first form the researcher is a full member of the community or group that is being studied. He/she, therefore, gets involved in the activities of the group.

On the other hand, in non-participant observation the researcher is a passive member who takes no part at all in the activities of the group and has no contact with those being observed.

By eating their food, speaking their language and personally observing their habits and customs, the ethnographer is able to

understand the society's way of life. The method enables the field-worker to see the elements of daily life being repeated over and over again until they become commonplace to him. A period of observation is particularly important in studying societies other than one's own (Peil, 1982:115).

Further information on the use of the participant observation method can be obtained from Malinowski (1961), Spradley (1980), Peil (1982) and Keya et al. (1989). Previous studies have indicated that the period of observation is particularly important in studying societies other than one's own. Note that even if it is difficult for an outsider to see phenomena in exactly the same way as the people who have grown up as members of a certain culture, it is important to point out that by participating over an extended period of time some of the gaps in knowledge can be filled. Observation made it possible for us to differentiate between the obvious and intended results of actions and their unintended consequences. Small differences became meaningful in terms of community values.

It should be pointed out, however, that for participant observation to be successful, the participant observer must go through a long process of socialization in the community, gradually developing contacts and gaining acceptance and trust. In this study the method was found particularly useful in deriving data pertaining to eating habits and beliefs observed by the respondents.

In this study the researcher stayed in the research area consistently for a period of one year. However, the researcher had been on and off in the area of study for at least three years. This enabled him to develop a good understanding of the people and to gain insights into the major factors that affected food security among their children. The researcher, for instance, familiarized himself with the people's eating habits, food preferences, the frequency and type of meals, and the quality and quantity of foods given to children under five years.

The researcher observed the people's system of food transactions, food allocations between individual household members, and weaning foods for children. In this way he gained first hand information on the people's food beliefs, perceptions, tastes and generally what they held dear concerning eating habits, including what they considered to be nutritious food for their children and the mechanisms that they used to ensure that their children had access to adequate nutritious food. The researcher also observed for himself the constraints that the people faced in their efforts to ensure food security for their children and the coping mechanisms they used to survive periods of food shortages.

3.3.3 Focus group discussions

A focus group is a group discussion that gathers people of similar backgrounds or experiences to discuss a specific topic of interest

to the researcher. The group is normally guided by a moderator (or group facilitator), who introduces the topics to be discussed and helps the group to participate in a lively and natural discussion amongst themselves (see Appendix 2). A focus group does not have right or wrong answers but relies on discussion. It allows the participants to agree or disagree with each other (Susan et al. 1992). Susan et al. (1992) and Chambers (1992), discuss in detail the advantages of this method. Its main advantage is that it provides insights into how a group thinks about an issue , about the range of opinions and ideas, and the inconsistencies and variation that exist in a particular community in terms of beliefs and their experiences and practices. A focus group normally allows the researcher to explore one or two topics in greater detail, thus producing a lot of information far more quickly and at less cost than individual interviews. In addition, FGDs are excellent for obtaining information from illiterate communities, since they make use of group discussion, a form of communication found naturally in most communities.

The major limitations of this method, as identified by Susan et al. (1992) are, firstly, participants often agree with responses from fellow members for different reasons and so caution is required when interpreting the results. Secondly, the moderator who is not well trained can easily force the participants into answering questions in a certain way. Thirdly, focus groups have limited value in exploring complex beliefs of individuals and, as a result,

in-depth interviews are a more appropriate method for this purpose. Focus group discussion can paint a picture of what is socially acceptable in a community rather than what is really occurring or believed, although this problem can be limited by careful participant selection and good moderating skills.

Paul Nkwi (1992) used the focus group discussion method to study the people's perceptions of family planning in Cameroon. In each community, he conducted nine focus groups on community development concerns using the local language of each community. The participants were people similar in their backgrounds and social characteristics. This is important because of the fact that people have to open up their feelings concerning particular issues (Krenger 1988).

In this study the focus groups comprised mothers of children under five years and also mothers whose children had been admitted to a family life training programme (FLTP), nursery school teachers and other community leaders. These categories of people are well informed in matters pertaining to the food security needs of children under five years and were therefore able to provide important information. This method was used to determine the differences between the food preferences and feeding practices observed by various households. It was also used to find out the differences between income levels of households and who the major decision makers were concerning matters to do with food

acquisition, distribution and consumption in the households.

Focus groups typically had 8-10 members plus a moderator and an assistant moderator. One of the women respondents with children under five years was trained to act as the moderator. Note that eight people is a popular size in groups of this nature. It should be remembered that if a group is too small, it could be dominated by the more vocal members and if it gets beyond 10 or 12, it becomes difficult to manage. Research assistants who were fluent in Dholuo, the local language, recorded the discussions. I, as the principal researcher in this study, attended all sessions of the focus group discussions.

These discussions yielded information on the people's feelings concerning food insecurities in their area and their views on what needs to be done in order to alleviate the problem in the area. It is important to note that the information derived from the discussions strengthened the information derived from the other methods like participant observation, thereby enabling us to cross-check the results and thus make the study valid and reliable.

The discussions provided us with rich ethnographic data due to the fact that the discussants delved into the fine details of what caused food insecurity among their children. For instance, they discussed issues to do with the number of meals that the children were given daily, suitable foods for the weaning of children and

the type of foods given to children recovering from bouts of various diseases.

This method was found to be less expensive to conduct when compared with structured interviews. It yielded information on what people felt, especially regarding the merits of serving children food in separate plates. It also yielded information concerning the people's views about the ideal number of children in the household.

3.3.4 Case studies

Case studies usually include individuals selected because of the specific information that they have. Like the other techniques of data collection, case studies are a good source of information, particularly on community norms, values and institutions (Peil 1982). Note that case studies complement information that is derived from focus group discussions. This study used case studies to highlight the position of the food security situation in the area of study at the time the study was carried out. Some five respondents were selected that included a family health educator, a successful farmer's wife, a grandmother taking care of her grand children, an emigrant's wife and an ordinary mother taking care of her children. These five were thought to be representatives of the main categories of women with children under five years in the rural area. These respondents were encouraged to explore the food security situation in their households to the limit of their knowledge, using a study guide (Appendix 3). Case studies in this

study proved useful in complementing the information derived from focus group discussions. Open-ended questions were administered to the individuals selected in the case studies (Abramson 1990; Kirkwood 1988).

The main limitation of this method is that the selected cases may not be quite representative of the study population. Because of this fact, case studies should be combined with other methods such as participant observation and focus group discussions so as to cross-check the information. In this study, this limitation has been taken care of by using the other methods described.

3.3.5 Key informants

This involves the extraction of information from people likely to have adequate information on any topic that a researcher is interested in (Peil 1982). It is important to observe that, like any other method, the use of key informants is suitable for some types of data than others. Pelto and Pelto (1970) argue that this method works best when it is combined with the participant observation method. The key informants are usually community leaders, who shape the opinions of their communities, that is, they are opinion leaders.

In this study the method was used to interview women group leaders, agricultural extension officers and health officers both at the district and location levels. The interviews were more or less an

exchange of ideas between the two parties, namely, the respondents and the researcher, on the food security situation in the area. The information that we obtained by using this method complemented that of focus group discussions and of case studies.

3.3.6 Documentary sources of information

The documentary method is a secondary method of data collection that involves desk research. This involves reading books, journals, magazines and newspapers on the existing state of knowledge regarding a particular topic which is of interest to the researcher. It should be noted that all knowledge is an accumulation of the unique contributions of previous research and, therefore, it is always wise for any scholar to take advantage of the works of other scholars who are interested in the same problems. The other advantage of this method is that it enables the researcher to identify gaps in knowledge, that is, areas not yet not adequately covered or overlooked by previous scholars. Furthermore, the review may also help in avoiding sterile problem areas where research has failed to produce results. This method is particularly useful when used early in the research, providing a background of what is known and helping in the development of useful hypotheses (Peil, 1982:126). This method is also known to be cheap in the sense that it saves time and money of going out to collect data from the field. The main weakness, however, is that it may make the researcher fall victim to other people's judgements, evaluations, perspectives and biases which arise from either

incapacity or conscious and unconscious omissions (Keya et al. 1989).

This study used documents, particularly in its early phase, to gain background information on the food security status in the area of study. The sources of information included national development plans, local newspapers, magazines and journals.

3.4 Pilot Study

After the questionnaire was designed, it was pre-tested in an area similar to the study area before it was finally administered to the respondents in the study area. Fifty questionnaires were administered during the pilot study. The major reason for pre-testing the questionnaire was to polish it up, in order to make it a more reliable and valid tool for data collection. The pilot study took two weeks.

3.5 Methods of data analysis

Data were analysed by the use of both qualitative and quantitative methods. Qualitative information was derived from focus group discussions, interviews and observations. On the other hand, quantitative information was derived from the structured questionnaires. This information was analysed using the SPSS computer package and presented in the form of frequencies, percentage tables and descriptions.

Qualitative analysis involved descriptions and explanations of the information derived from observed behaviour, focus group discussions and key informants. The analysis was aimed at seeking evidence of associations between variables which determine household food security and children's food security according to the study objectives and hypotheses.

3.6 Ethical considerations

The research started by organizing a meeting with the community leaders with the aim of introducing the principal researcher and the purpose of the study to the community. Thereafter, the principal researcher identified field assistants whom he trained on how to collect the data. The two research assistants that I worked with had also served as trained research assistants in the KEDAH project based in the area for two years. They were, therefore, quite experienced research assistants. Both of them were secondary level school certificate holders with good passes. The reason why I selected them is because they had already worked as research assistants for previous researchers in the area, and were therefore, well known to the local people. I should add that they greatly facilitated my ability to create rapport with the local people in the shortest time possible. The principal researcher also ensured that the privacy, confidentiality and anonymity of the respondents was kept. Further information on this issue can be derived from (Ellen 1993).

3.7 Problems encountered in the field

It is important to point out that during the time of collecting data for this study, several problems were encountered.

1. It was at times difficult to find the respondents because they were not always in their homes because of the nature of their work. Some were busy with their duties in the *shambas* and found little time to respond to our questions. This necessitated more than one visit.
2. Some of them were reluctant to give answers because they first wanted to know how they were going to benefit as individuals out of the study. At first there was the problem of creating rapport with the respondents as they could not divulge important information to us. However, we re-assured them that the study was only an academic exercise and we did not have gifts to give.
3. We also experienced some transport problems due to the fact that the study was conducted during the heavy rainy season which made some of the roads muddy and impassable. Despite the fact that we had a Land Rover provided by the University of Nairobi, the poor roads were heavily pot-holed. The Land Rover broke down at least twice during the research period. However, it was quickly repaired by the KEDHAR staff from the Kisumu

office.

4. I also experienced some language problems but my research assistants, both of whom were members of the local community, were always at hand to make effective translation of the discussions that I made with the people. I also tried to learn the language starting from the right words for greetings among others.

5. The other problem that I experienced during this study is that of illness especially during the very first months before I adjusted to the climate of the area. I had severe bouts of malaria. However, as the research progressed I slowly became well adapted to the climate and experienced less and less bouts of sickness.

CHAPTER FOUR

CHARACTERISTICS AND PRACTICES OF THE STUDY POPULATION

4.0 Introduction

This chapter analyses qualitative and quantitative data by the use of the descriptive method and frequency tabulations. The chapter also deals with the general characteristics of the study population.

4.1 Demographic characteristics

4.1.1 Age

The findings show that one in every four of the respondents in Usigu Division were between 20 and 24 years old, while 22% of the respondents were aged between 25 and 29 years. These were mainly "women in their prime" reproductive age and who had children under five years. Only 5.6% of the respondents were aged between 45 and 49 years (Table 4.1).

On the other hand, the results from Boro Division indicate that 27% of the respondents were aged between 45 and 49 years while 18% were aged between 20 and 24 years. This indicates that more elderly respondents were interviewed in Boro than in Usigu Division. However, there were no significant age differences in the other categories between the two study areas.

Table 4.1 Age distribution of respondents by division

AGE IN YEARS	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
15-19	14	9.7	13	9.0
20-24	36	25.0	27	18.8
25-29	32	22.2	23	16.0
30-34	18	12.5	13	9.0
35-39	17	11.8	13	9.0
40-44	19	13.2	16	11.1
45-49	8	5.6	39	27.1
Total	144	100.0	144	100.0

4.1.2 Marital status

Most of the respondents (93.7%) in Usigu and in Boro (75.7%) were married (Table 4.2). Marriage is a highly cherished cultural practice. Every adult male and female is expected to get married and have his/her own family. Marriage at an early age is common for girls. Girls who have attained the age of 18 years are expected to get married unless they are in school or college. Divorce is not common and only two of the respondents (1.4%) and (18.7%) in Usigu and Boro Divisions, respectfully, reported having been divorced by their husbands. It should be noted that stable marriage may promote food security for children, particularly in cases where a husband and a wife/wives co-operate in food production activities. Co-operation between husband and wife/wives, and the possibility of support from other family members, is an important factor in ensuring children's food security. For instance, in a study carried out in Siaya District Whyte and Kariuki observed that 90 per cent

of the mothers in their study sample were married (Whyte and Kariuki, 1991:174). We also arrived at a similar observation in this study.

TABLE 4.2: Marital status of respondents by division

MARITAL STATUS	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Married	135	93.7	109	75.7
Separated	4	2.8	1	0.7
Single	3	2.1	7	4.9
Divorced	2	1.4	27	18.7
Total	144	100.0	144	100.0

4.1.3 Number of children alive

In Boro Division, slightly over a half of the respondents had children aged between 1 and 2 years, 35.4% had children aged between 3 and 4 years while the remainder had children older than 5 years of age (Table 4.3). On the other hand, in Usigu Division most of the respondents had children aged between 1 and 2 years while slightly more than one tenth had children aged between 3 and 4 years. An insignificant 1.4% had children aged more than 5 years.

Table 4.3: Number of children alive by division

CHILDREN ALIVE	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
1-2	125	86.8	74	51.4
3-4	17	11.8	51	35.4
5+	2	1.4	19	13.2
Total	144	100.0	144	100.0

4.2 Socio-economic characteristics

4.2.1 Education

Table 4.4 presents the distribution of the respondents' educational level in both Usigu and Boro divisions. A large number of the respondents in Usigu were either illiterate or lowly educated. For instance, 25.7% of the respondents reported that they did not have any form of formal education. The women with primary level of education were 61.1% while those with secondary and post secondary level of education constituted only 12.5% and 0.7%, respectively

In Boro Division, slightly more than half of the respondents (57.6%) had attained only the primary level of formal education (Table 4.4). Like in Usigu, the proportion of those with secondary and post-secondary education was low, only 9% and 1.4%, respectively. It is, however, worth noting that in both Usigu and Boro Divisions most of the respondents had acquired primary level of education.

Table 4.4: Educational level of respondents by division

LEVEL OF EDUCATION	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
None	37	25.7	46	32.0
Primary	88	61.1	83	57.6
Secondary	18	12.5	13	9.0
College	1	0.7	2	1.4
Total	144	100.0	144	100.0

4.2.2 Occupation

A majority of the respondents (66%) in Usigu Division were peasant farmers while (24.3%) were businesswomen. A few of them were primary school teachers (3.4 %) furthermore, only (2.8 %), reported that they were potters as shown in Table 4.5. On the other hand, the majority of the respondents in Boro Division were peasant farmers (84%). This indicates that there was a higher percentage of peasant farmers in Boro than in Usigu. This is probably because Usigu is located near Lake Victoria where fish trade is widespread while Boro is far off from the Lake and the predominant economic activity that is done there by most people is farming.

Table 4.5: Occupation of respondents

OCCUPATION	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Peasant farming	95	66.0	121	84.0
Business	35	24.3	6	4.2
House duty	5	3.4	3	2.1
Teaching	5	3.4	1	0.7
Potting	4	2.8	13	9.0
Total	144	100.0	144	100.0

4.2.3 Monthly income from all sources

The respondents who earned between Ksh.1000 and Ksh.5000 constituted 41.6% and 58.3% in Usigu and Boro, respectively. On the other hand, 55.6% and 27.8% earned less than Ksh. 1000 in Usigu and Boro, respectively (Table 4.6). These differences could probably be due to the fact that in Usigu Division the majority of the respondents depended on trading in fish which was paid for on a daily basis and, therefore, it was not easy for them to account for their earnings per month. Note that most respondents found it quite difficult to account for their income because of the irregularity of the income generating activities. This means that whatever figures they gave us were only based on approximations. On the other hand, in Boro Division, respondents depended on selling farm produce that made it easier for them to account for their earnings. Generally, it can also be observed that there were very few people who earned more than Ksh. 6,000 per month.

Table 4.6: Monthly income from all sources

AMOUNT IN Kshs.	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Less than 1000	80	55.6	40	27.8
1000-5000	60	41.6	84	58.3
6000+	4	2.8	20	13.9
Total	144	100.0	144	100.0

4.2.4 Size of land owned¹

The distribution of land owned by the respondents in the two Divisions is presented in Table 4.7. Slightly more than a half of the respondents (52.8%) in Usigu Division owned very small parcels of land, that averaged between 0.4 and 1.2 hectares while one third of the respondents owned between 1.6 and 2.4 hectares. Only 6.3% of the respondents owned between 2.8 and 4.0 hectares while the remaining 2.1% owned more¹ than 4.4 hectares of land.

The small pieces of land owned by many of the respondents limited them to the use of simple tools such as hoes, pangas and ox-drawn ploughs which considerably increased the workload for women and therefore prevented them from engaging in other productive

¹The respondents do not actually own land but have user rights. Like elsewhere in Kenya where traditional land tenure systems still operate, land in both Usigu and Boro Divisions is owned by men.

activities. The small land sizes also meant that people over-worked the land by cultivating on the same pieces over and over again, thereby leading to soil exhaustion. Only small pieces of land were noticed lying fallow. Steward (1955) points out that the environment limits the economic activities of human beings. I concur with that observation in this study.

The results of this study indicate that in both Usigu and Boro Divisions a majority of the respondents owned between 0.4 and 1.2 hectares of land. It may probably be important to observe that in the Luo community land is owned and inherited only by males since the community is patrilineal.

Table 4.7: Size of land owned by respondents

SIZE OF LAND IN HECTARES	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
0.4-1.2	76	52.8	134	93.1
1.6-2.4	48	33.3	1	0.7
2.8-4.0	9	6.3	8	5.5
4.4+	3	2.1	1	0.7
N/A	8	5.5	-	-
Total	144	100.0	144	100.0

The size of land is a very important factor in household food security, especially in a rural area such as Boro and Usigu

Divisions where respondents relied on their own individually produced food. The Food and Agricultural Organization (1994) estimates that 1.2 hectares is the minimum size of land that is considered economically viable. This implies that a high proportion of respondents in Boro and Usigu Divisions could not achieve optimum food production because of the fact that the sizes of their land are too small for profitable farming. Besides that, it was observed that many of the respondents in the two divisions did not use modern methods of farming and, therefore, they did not realize high food yields from the small pieces of land. For example, they did not use certified seeds for planting, nor did they use mechanized forms of farming.

4.3 Cultural characteristics

4.3.1 Food sharing with neighbours

This study found that food sharing is a cultural practice that is still widely followed by the residents of Usigu. The respondents that shared their food with neighbours weekly were 25% while a slightly higher percentage of 37.5% shared their food when they had food surpluses or when their neighbours asked for it, that is, on request (Table 4.8). It was also reported that food sharing helped to improve the diet between households in the sense that whatever food was not produced or purchased in the family could be acquired from the neighbours. This was on condition that the neighbours lived harmoniously. Where there was strife between neighbours no such sharing of food could take place.

The results of this study show that people shared their food with their neighbours more often in Boro Division than in Usigu Division; those who shared their food on a weekly basis were 51.4% and 25% for Boro and Usigu, respectively. I observed that food sharing between neighbours served some important social and economic purposes as well as being a highly cherished cultural practice that served to cement relationships between neighbours in the society. It also enabled neighbours to share other things besides food, for example, hoes.

Communal labour was also shared during peak periods such as cultivating, weeding and harvesting. The sharing of food between neighbours is, therefore, an important cultural practice that not only serves as a good coping mechanism but also promotes harmony within the community. It may therefore be rightfully noted that the institution of food sharing is meant to enhance the food entitlements of individuals in the households. The idea of food entitlement is well expounded by Sen (1981) who points out that individuals can suffer hunger even when there is no shortage in the supply of food if their entitlement declines. Among the factors that may lead to a decline in food entitlement is the inability of an individual to exchange his/her resources with others. An individual's resources may consist of cash income or assets and skills.

Table 4.8: Frequency of sharing food with neighbouring households by division

PERIOD OF SHARING FOOD	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Daily	21	14.6	39	27.1
Weekly	36	25.0	74	51.4
Monthly	11	7.6	10	6.9
On request	54	37.5	6	4.2
Not sharing at all	22	15.3	15	10.4
Total	144	100.0	144	100.0

4.3.2 Type of marriage

It was observed that although polygyny is allowed and actually practised by some people in Usigu Division, many of them (64.5%), however, practised monogamy. Only 25% of the respondents said that their husbands were married to another woman while those who said that their husbands were married to two other wives constituted a mere 6.3% (Table 4.9). In pre-colonial times, however, polygyny was widely practised. It was said to be a symbol of wealth and prestige among the men who practised it. This practice has now diminished considerably because of the onslaught of Western culture and the escalating cost of living. The majority of the respondents considered monogamous families to be more food secure than the polygynous ones, probably because there were fewer mouths to feed in that type of households. However, it was also reported that at times polygynous households experienced a higher level of food security than those in monogamous households due to the higher

labour force available for food production activities. For instance, in a previous study Clark (1980) observes that among the Agikuyu polygyny was allowed and some men did actually practise it, and that the practice had several benefits, such as "when a woman was ill, overwhelmed by procreative duties or otherwise confined she turned to co-wives for help". However, it should be noted that husbands could not arbitrarily take the produce from their wives' granaries since each wife was responsible for the management and distribution of produce from her gardens (Kenyatta 1938).

In both Usigu and Boro Divisions it was found that polygyny was also widely practised, as is indicated in Table 4.9. This appears to suggest that people are reluctant to give up their cultural beliefs, especially those pertaining to the extended family system. However, it has been noted that this cultural practice is no longer popular because of the fact that a man's attention and resources must be shared with another woman and her children (Whyte and Kariuki, 1991:174). In both Divisions the percentage of polygynous households was almost the same since the people are subject to the same culture.

Table 4.9: Type of marriage

NUMBER OF WIVES	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
One wife	93	64.5	97	67.3
Two wives	36	25.0	35	24.3
Three wives	9	6.3	6	4.2
Four wives	6	4.2	6	4.2
Total	144	100.0	144	100.0

4.4 Practices

4.4.1: Farming practices

The findings of this study indicate that the farming practices followed by various households determined their food security status. Among the factors that were investigated regarding farming practices were the size of land owned by respondents' husbands, the size of land devoted to food crop production, the type of fertilizers used, the type of farming implements used, the type of livestock and other animals kept, and the type of food storage facilities used. Some of these were found to be having significant impact on the availability of food in the household and on the overall food security of the household. For instance, focus group discussions revealed that many people no longer prefer to store their grains in granaries kept outside their houses due to increase in food thefts. Our direct observations also showed that the size of land under food crops was too small to yield enough food to feed

an average family of ten all the year round. In a previous study, McCann (1987) points out that in Ethiopia households which borrow draught animals plant less land than those that own them. It was also observed that households that planted drought resistant crops had less food insecurity problems compared to those that did not plant such crops.

During the focus group discussions, the following were given as some of the most important drought resistant crops in the area: Cassava, sweet potatoes, bananas, millet, yams, traditional vegetables such as *mrenda* and pumpkins, sorghum and *simsim*. Drought resistant crops are important because they do not require much water and fertiliser and could, therefore, thrive even during times of pro-longed drought. Secondly, these crops do not require intensive labour. The crops are also known to be resistant to tropical diseases and, therefore, survive for long periods after all other crops have been damaged by disease and drought.

4.4.1.1 Major crops grown by respondents

It was observed that the majority of the respondents in Usigu Division planted maize as their staple crop. Other crops that were grown in the area include millet, cassava and sorghum (Table 4.10).

Maize is an exotic crop which was introduced in the area by the former European colonizers in the 1950s. Since that time, the crop has out-paced all the others in importance. In addition, the introduction of maize as a staple food crop has considerably

changed people's dietary habits.

A number of scholars have, however, criticized over-dependency on maize as a staple food crop rather than the traditional crops (see for example, Cohen and Atieno-Odhiambo 1989; Orodho 1998; Muyekho 1994). This is because the crop is more susceptible to weevils and also to a number of diseases. It also rots easily in the granaries if it is stored with high levels of moisture content. We do concur with the views expressed by these scholars because we also observed this in the field.

Results from both Usigu and Boro Divisions indicate that maize is the staple food while millet was second in importance, grown by slightly less than a half of the respondents. The other crops grown are shown in Table 4.10. At the time of the field study the Divisional Agricultural Officer at Boro told us that he had intensified efforts to reinforce the cultivation of some of the traditional food crops, such as cassava, millet, sweet potatoes and others, which are drought resistant in nature and, therefore, more suited to the local climatic conditions. Furthermore, these crops are not easily destroyed by pests as are the exotic crops such as maize. Although maize was the staple crop grown by nearly all the respondents, the other crops grown in small quantities are presented in Table 4.10.

Table 4.10: Major crops grown by division

TYPE OF MAJOR CROP	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Beans	6	4.2	2	1.4
Cassava	8	5.5	4	2.8
Cowpeas	3	2.1	-	-
Groundnuts	1	0.7	5	3.5
Maize	56	38.9	55	38.2
Millet	43	29.8	65	45.1
Potatoes	3	2.1	-	-
Sorghum	5	3.5	3	2.1
Arrow roots	4	2.8	-	-
Vegetables & bananas	15	10.4	10	6.9
TOTAL	144	100.0	144	100.0

4.4.1.2 Type of fertilizer used

The results of the type of fertilizer used are presented in Table 4.11. Almost all the respondents in Usigu (95.8) and Boro (97.9) used traditional manure as their main form of fertilizer while only 4.2% and 2.1% of the respondents used artificial fertilizer in Usigu and Boro, respectively. Despite the fact that there were many people who used manure, the quantity of the manure used was not proportional to the size of the land. Focus group discussion results revealed that in most cases the respondents had only one to two cows, meaning that these could not yield adequate manure for the size of land under food crop production. Some households did not own any cow which could produce manure. Such people depended on the manure that they bought from others. In most of the cases they

did not buy enough manure to fertilize all the land under food crops. The World Bank (1994) has reported that the use of fertilizer is a major determinant of food yields in developing countries. Our data also indicate that if there was adequate use of artificial fertilizer then the respondents could have realized higher food crop yields. The use of manure and other forms of fertilizers should, therefore, be encouraged as the soils in the area are not rich and have been exhausted by continued farming over the years.

It should be emphasized that only a few respondents in both Usigu and Boro Divisions were found to be regular users of artificial fertilizers. For instance, only 2.1% used artificial fertilizers when planting their crops in Boro while 4.2% applied artificial fertilizers in Usigu Division (Table 4.11). Despite the use of manure, the rainfall in the area is not regular or sufficient enough to ensure high agricultural production. Some studies have indicated that use of fertilizers is important in ensuring higher food yields. For instance, FAO (1985) estimates that half of the yields achieved by developing countries over the last 20 years are due to the increased use of fertilizers.

Table 4.11: Type of fertilizer used by respondents

TYPE OF FERTILIZER	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Manure	138	95.8	141	97.9
Artificial	6	4.2	3	2.1
Total	144	100.0	144	100.0

4.4.1.3 Food storage

The majority of the respondents in Usigu Division (60.4%) preferred storing their grain foods in bags kept in the house while another 36.8% of the respondents stored their grain foods in granaries. Those who used other forms of storage facilities, for example, drums, pots, and rafters, only accounted for 2.8% (Table 4.12).

The focus group discussions revealed that in the recent past many people stored their grains in granaries. However, due to frequent food shortages in the area, many of the respondents (60.4%) have turned to storing their grains in bags and keeping them in their houses to minimize food thefts. They, however, were not very happy with this form of grain storage as it resulted in heavy losses from weevils. The researcher also observed in the field that the food storage facilities in Boro Division were quite similar to those obtainable in Usigu Division. However, unlike in Usigu where many of the respondents, that is, 60.4%, stored their grains in bags kept in the house, in Boro Division many of the respondents (68%)

stored their grains in pots kept in houses (Table 4.12).

Table 4.12: Food storage facilities for grain food

THE MAIN FOOD STORAGE FACILITY	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Granaries	53	36.8	36	25.0
Bags kept in houses	87	60.4	5	3.5
Drums kept in houses	2	1.4	1	0.7
Pots kept in houses	1	0.7	98	68.0
Rafters kept in houses	1	0.7	4	2.8
Total	144	100.0	144	100.0

4.4.1.4 Problems of food storage

The major problems faced by the respondents in storing their grain foods include that of grains being eaten by weevils. The respondents who reported that much of their grains ended up being eaten by weevils were (88.2%) and (75.7) in Usigu and Boro Divisions, respectfully (Table 4.13). Theft from granaries was particularly common in Boro Division. The high rate of grain thefts from the granaries may be an indicator of the high level of food insecurity in the households. It should be noted that this problem of food thefts has also been observed in other countries of Africa where people have experienced episodes of severe food poverty. For instance, in Madagascar Hewitt (1992:105) observed that rural food insecurity was manifested in terms of increase in thefts of food and export products from the fields, a behaviour that had become an important phenomenon of the 1980s. It should be noted that these

factors reflect an increase in food poverty. Other forms of losses were as a result of pests, moths, and monkeys. This finding is similar to that of Orodho (1998:106) in his study in Vihiga District who observed that there was a high rate of post-harvest food losses due to pests and predators.

Table 4.13: Problems experienced when storing grain foods by division

TYPE OF PROBLEM	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Weevils	127	88.2	109	75.7
Birds/monkeys	9	6.2	2	1.4
Stolen	8	5.6	33	22.9
Total	144	100.0	142	100.0

4.4.2 Food transactions

This study found that the selling of food crops was a common practice, particularly soon after harvesting. The main reason for the high rate of selling of food was lack of storing facilities. Secondly, the cash earned enabled the respondents to purchase other food items not locally produced, such as factory processed foods (iodized salt, sugar and cooking fat). Thirdly, since the area lacks conventional cash crops, such as tea, coffee, and sisal, some food crops such as fruits (mangoes, paw-paws and oranges) and groundnuts were used as cash crops. It is perhaps because of these

reasons that food selling was quite common in the area. One possible danger of this practice, however, is the risk of selling all the food and thereby subjecting the family to food shortages, especially before the next harvest season. The results of this study indicate that 50% and 48.6% of the respondents sold some of their food crops on a weekly basis in Usigu and Boro, respectively (Table 4.14).

Table 4.14: Frequency of selling food from households by division

PERIOD OF SELLING	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Daily	45	31.3	5	3.5
Weekly	72	50.0	70	48.6
Monthly	17	11.8	45	31.3
N/A	10	6.9	24	16.6
Total	144	100.00	144	100.0

4.4.3 Eating habits and food taboos

4.4.3.1 Weaning age

Many of the respondents (69.4 %) considered 1-6 months as an appropriate age for the weaning of children. Those who weaned their children between 7 and 12 months were 9.7% (Table 4.15). Although breast-feeding for long periods is recommended by the Ministry of Health, a high proportion of the respondents reported that they did not breast-feed their children as long as they would have wished to. They said that they were forced to stop breast-feeding

due to lack of milk and also in order to engage in other productive activities. Weaning enabled children to benefit from other foods. It may rightfully be deduced that lack of sufficient milk by the children's mothers may probably be an indicator of general food insecurity in the households.

It should be pointed out that the Family Planning Association of Kenya recommends that children be weaned at a minimum age of six months. On the other hand, the results from Boro Division indicate that many of the respondents (79.1%) weaned their children at the age of six months, while a small number (10.4%) weaned their children at 12 months (Table 4.15). The weaning age is important for the children's food security since the mother's milk is known to have protective properties against diseases. However, focus group discussions revealed that many of the respondents who wished to continue breast-feeding their children for a longer period could not do so because of lack of milk.

Lack of milk in mothers could perhaps indicate the high level of household food deficiency. Alternatively, it might indicate the inability of the mothers to breast-feed their children regularly because of having to spend much of their time away from the children particularly when they go out to trade in far away places. Some of the respondents who breast-fed their children for very long periods, 20-30 months, reported that they preferred to do so because breast-feeding also helped them to prevent another

pregnancy. In brief, it was observed that in both Divisions, the majority of the respondents (69.4%) were aware of the importance of breast-feeding to children's food security and did actually breast-feed their children for a considerable length of time, that is for at least six months.

Table 4.15: Age at which children are weaned

AGE FOR WEANING	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
1-6 months	100	69.4	114	79.1
7-12 months	14	9.7	15	10.4
13-18 months	7	4.9	4	2.8
19-24 months	8	5.6	8	5.6
25-30 months	15	10.4	3	2.1
Total	144	100.0	144	100.0

4.4.3.2 Weaning foods

About a third of the respondents (36.2%) in Usigu said that cow milk was the best food for weaning children. However, since the area is quite deficient in dairy farming, this type of food was not fed to children for long periods. The other foods given are shown in Table 4.16. *Ugali* and vegetables are, undoubtedly, the next most significant food. The preparation of the food, however, is an important determinant of the food security of children.

On the other hand, mashed potatoes were reported to be the best

food for weaning children by the majority of the respondents (84%) in Boro Division (Table 4.16). The table reveals that there was a much higher percentage of respondents who weaned their children with milk in Usigu (36.2%) than in Boro, with only (2.1%). This may probably be because Boro is the drier Division and there are very few dairy cows compared to Usigu. It should be noted that the type of foods children are weaned on is an important aspect of children's food security. More often than not, children suffer diseases such as kwashiorkor due to being weaned on starchy foods. Kwashiorkor is characterized by swelling of the limbs, face and abdomen and changes in hair, skin colour and texture (Whyte and Kariuki, 1991:171).

Table 4.16: Best food for weaning children

TYPE OF FOOD	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	percent
Milk	52	36.2	3	2.1
Mashed bananas	1	0.7	4	2.8
Mashed beans	15	10.4	3	2.1
Eggs	18	12.5	2	1.4
Fish	2	1.4	7	4.8
Fruits	13	9.0	2	1.4
Mashed potatoes	5	3.5	121	84
Rice	7	4.8	-	-
Ugali and vegetables	24	16.7	2	1.4
Arrow roots	7	4.8	-	-
Total	144	100.0	144	100.0

4.4.3.3 Foods absolutely necessary for children under five years

During the focus group discussions, the following foods were reported by the discussants to be absolutely necessary for children under five years. The main foods that were given include fish, eggs, vegetables of various kinds, tomatoes, fruits of various kinds, and fortified porridge (i.e., porridge made from mixing flour from different types of grains). Among the grains that were used to make this type of porridge include sorghum, millet and finger-millet while the root-crops that were used include cassava, arrow-roots, and sweet-potatoes. The porridge was also mixed with a type of fish known as *omena*.

The percentage distribution results for Usigu Division show that *ugali* and vegetables was the staple food given to children by the respondents (34%). Other foods given include beans (12.5%) and sorghum (17.5%). However, milk, which is a well known whole food, was not a common food item given to the children (Table 4.17). This was mainly because dairy farming is not widely practised in the area. This study found that although fish is plentiful in Lake Victoria, most of the caught fish were sold out for cash rather than consumed at home. These results support those of Abila and Jansen (1997) who came up with similar findings in their study conducted among the communities living around Lake Victoria where they found that children are not fed on fish despite the fact that fish is caught in plenty in the Lake Victoria because it was sold

out by traders to earn them cash incomes.

Table 4.17: Foods normally given to children under five years by division

MAIN TYPE OF FOOD GIVEN	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Milk	1	0.7	3	2.1
Ugali and vegetables	49	34.0	1	0.7
Bananas	6	4.2	1	0.7
Beans	18	12.5	1	0.7
Cassava	16	11.1	-	-
Eggs	9	6.3	24	16.7
Fish	8	5.5	2	1.4
Fruits	1	0.7	-	-
Meat	6	4.2	3	2.1
Potatoes	5	3.5	-	-
Sorghum	25	17.3	-	-
All the above foods	-	-	109	75.6
Total	144	100.0	144	100.0

4.4.3.4 Types of food prohibited for children under five years

A number of food items prohibited for children include meat of any animal killed by wild animals or disease. Similarly, fish with bones was prohibited for children, as was cassava. The mothers believed that cassava was not easily digested by the children. Sugary foods were prohibited because they cause tooth decay. The most common foods prohibited to children in both divisions were sugarcane, fish with bones and fermented foods (Table 4.18).

Foods such as sugarcane were considered to be too hard for the

children's tender teeth. Fish with bones could lead to choking of the children when eating. Some types of fish, for example, mud fish, were also said to cause diseases such as skin rashes and even leprosy, and should, therefore, not to be eaten by children under five years. Alcohol was regarded as being dangerous to the children's mental development. That is also probably why all fermented foods were prohibited. This suggests that there were good reasons for these food beliefs because some foods were potentially dangerous to the development of children.

The most common foods given to children were *ugali* and vegetables, bananas, beans, eggs, fish and meat. It is, however, important to point out that in most cases there were no specially prepared foods for children alone. Children ate whichever foods adults ate. In fact, in some cases, they ate the food that had been left over by the adults. For instance, left-overs of *ugali* from the evening meal were usually given to the children with tea the following morning for breakfast.

Table 4.18: Types of food prohibited for children under five years

MAIN TYPE OF PROHIBITED FOOD	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Meat of animal killed by wild animal or Meat of animal died naturally	71	49.3	4	2.8
Cassava	3	2.1	-	-
Chicken	5	3.4	-	-
Cold food	5	3.4	2	1.4
Cowpeas	3	2.1	-	-
Fermented food	1	0.7	132	91.6
Fruits	4	2.8	1	0.7
Maize	3	2.1	-	-
Meat/liver	31	21.6	1	0.7
Millet/rice	4	2.8	-	-
Sugary foods	5	3.4	-	-
Beans	9	6.3	4	2.8
Total	144	100.0	144	100.0

4.4.4 Decision-making in the household

In order to determine the level of decision-making powers of the respondents, we asked the following question: "Who decides on the crops that are to be grown on your farm"? The findings indicate that most of the women that were interviewed were relatively autonomous in the decision-making process in nearly all matters pertaining to food production and distribution within their households. One major reason for this autonomy is the high rate of male-out migration in search of wage employment and leaving their wives behind in the rural area as heads of households. This contributed a great deal to the high level of women's autonomy in

the decision-making process. The other reason for this autonomy was the high rate of gender education disseminated by some NGOs operating in the area such as Widows and Orphans Welfare society of Kenya (WOWESOK), Care Kenya and Family Planning Private Sector.

The results from Usigu division indicate that slightly more than a half of the respondents (54.2%) made the decision concerning which crops they were to plant jointly with their husbands. This is a good indication of the high rate of gender sensitivity in the area. It is encouraging to note that women as the chief food producers in the households are fully involved in the decision-making process. This practice, if sustained, should help improve the food security of the households for the great benefit of the vulnerable members.

On the other hand, the results from Boro Division show that women were the chief decision-makers on which foods to grow on their farms. Most of them (90.2%) indicated that they made decisions on which crops they grew by themselves (Table 4.19). In most parts of Kenya studies have shown that women produce 70% of all the food. (Pala 1985). It has also been indicated that women are significant producers of food in developing countries (Boserup 1970; Pala 1985).

Table 4.19: Decision-making on types of food crops grown

DECISION MAKER	DIVISION			
	USIGU		BORO	
	Frequency	Percent	Frequency	Percent
Woman herself	78	54.2	130	90.2
Husband	14	9.7	1	0.7
Mother-in-law	1	0.7	9	6.3
Father-in-law	1	0.7	2	1.4
Both wife and husband	50	34.7	2	1.4
Total	144	100.0	144	100.0

We conclude this chapter by making the following observations. First, a big proportion of the mothers of children under five years in the study area were aged between 20 and 49 years. Second, many of them were married and were lowly educated, that is, had only the primary level of education, while some were illiterate. Third, the majority of them were peasant farmers who supplemented their income by trading. We also observed that the size of land devoted to food production mainly ranged from 0.4 - 1.2 hectares, with maize as the staple food. It was also found that children were breast-fed for long periods (at least one year). This finding supports that of (UNICEF/GOK 1984) which observed that prolonged breast-feeding is wide-spread in Kenya, especially in the rural areas, and that the longest average period occurs in rural Nyanza, that is, 15 months. This indicates that although the period of breast-feeding has declined slightly from what it was in 1984 it is, however, still quite long. It was further found that children were prohibited from eating some foods such as certain types of fish like the mud-fish.

Furthermore, the women had a high level of autonomy in deciding on what foods to feed their children. Finally, polygyny and food sharing were found to be common cultural practices.

CHAPTER FIVE

SOCIO-ECONOMIC FACTORS INFLUENCING HOUSEHOLD FOOD SECURITY

5.0 Introduction

This chapter analyses data which concern socio-economic factors. The data are derived from information related to hypothesis one and four. The remaining three hypotheses are discussed in chapter six since they concern socio-cultural factors. The chapter analyses socio-economic factors that are causes of food insecurity in the households and how this insecurity affects children under five years.

The dependent variable in the analysis is the frequency of meals per day while the independent variables are educational level, occupation, implements used for cultivation, type of fertilizers, land devoted to cash crops, type of domestic animals kept, foods prohibited to children, storage of grain and non-grain foods, monthly income from all sources, number of times food was sold in the household and number of wives in the household. The frequency of meals taken per day was considered important because we assumed that people who have access to food would feed their children more regularly than those who did not.

5.1 Food production and availability

This section aims at testing the first hypothesis that states that:
Availability of food in the household has a direct influence on

the food security status of children under five years". The major constraints of food production in both Divisions were lack of adequate land suitable for cultivation, lack of sufficient income to purchase farm inputs, and inadequate extension services. Lack of adequate land resulted to the respondents producing small quantities of food that could not last them from one harvesting season to the other. Consequently, there were yearly seasons of food shortages. Lack of sufficient income resulted to the respondents not having enough money to purchase other supplementary foods from the market to compliment that which they produced from their farms, as a result their diet and that of the children in particular was not always balanced. This increased the level of food insecurity in their households, a condition that affected children under five years more than any other category of household members. Lack of extension services made them fail to plant the right varieties of food crops, a condition which made them to realize lower overall food crop yields. Similarly, inappropriate methods of food production resulted in inadequate food availability in the households. On the other hand, lack of adequate food in the households affected children under five years in particular because at that age children are mere food consumers rather than producers as they are dependent entirely on the food produced by the adult members of the households. They are, therefore, more vulnerable to food unavailability as compared to the other members of the households who could acquire their own food from various sources.

5.1.1 Economic factors and food availability

It was reported by some focus group discussants that their husbands devoted as much as 0.6 of a hectare of land to the construction of the homestead. However, it was also observed that a high proportion of them utilized part of their homestead land for kitchen gardens. This served to enhance the level of food production and availability in the households in the sense that the crops planted in these gardens were much more accessible to them than those planted in the fields further away from the homesteads. Kitchen gardens enabled child-care takers to easily access foods such as vegetables and fruits, thereby contributing greatly to food availability in the households.

The findings reveal that, in both Divisions, many of the respondents devoted 0.4 to 1.2 hectares of their land to food crop production. Many of the respondents also had three meals per day. Thus, in both Divisions more than 60% of the respondents devoted 0.4 to 1.2 hectares of land to food crop production, and managed three meals per day. On the other hand, there were also those respondents who devoted 0.4 to 1.2 hectares of their land to food crop production but managed to eat only one or two meals per day. Of these, 25.7% were from Usigu while 30.6% were from Boro (Tables 5.1 a&b). Only 4.2% of the respondents in Usigu reported that they devoted no land at all to food crop production, and managed one or

two meals a day, while 5.6% of the respondents in Usigu devoted no land to food crop production and managed to eat three times a day. This indicates that those who did not produce their own food faired no worse compared to those who produced their own food from their farms in both Divisions.

Table 5.1a: The relationship between number of times respondents eat and size of land devoted to food crops in Usigu Division

Meals per day	Size of land (in hectares) devoted to food crops		
	0.4-1.2	No Land Devoted	Total
Once to twice	37 (25.7%)	6 (4.2%)	43 (29.9%)
Thrice	93 (64.5%)	8 (5.6%)	101 (70.1%)
Total Women	130 (90.2%)	14 (9.8%)	144 (100.0%)

Table 5.1b: The relationship between number of times respondents eat and size of land devoted to food crops in Boro Division

Meals per day	Size of land devoted to food crops		
	0.4-1.2	No land devoted	Total
Twice	44 (30.6%)	5 (3.5%)	49 (34.1%)
Thrice	88 (61.1%)	7 (4.8%)	95 (65.9%)
Total	132 (91.7%)	12 (8.3%)	144 (100%)

The number of meals individuals ate per day was important in determining their overall food security. For example, 3.5% of those who devoted no land at all to food crop production ate twice daily while 4.8% ate thrice a day in Boro Division. This made those who

eat two and three meals a day and who devote no land to food crop production be a mere 8.3% in the Division, while those who ate two to three meals a day and who produced their own food from their farms were 91.7%. This indicates that a majority of the respondents preferred to produce their own food, probably because of lack of sufficient income to purchase food. It also indicates that a majority of the respondents managed to eat more than two times in a day.

This may probably be because the results could have been inflated since nearly all the respondents, 90.2% and 91.7% in Usigu and Boro Divisions, respectively, cultivated the same sizes of land, that is, 0.4-1.2 hectares (Table 5.1b). In addition, this is probably because of the fact that the respondents in Boro also experienced the same problems of pre-harvest and post-harvest wastage as those obtainable in Usigu division. This information supports the first hypothesis that states: *"Availability of food in the household has a direct influence on the food security status of children under five years"*.

The focus group discussions revealed that a majority of the respondents exhausted their food-stocks before the next harvesting season. This was mainly because they sold much of their food in order to meet a range of other necessary expenses such as paying school fees for their children, buying clothes, and paying for medical expenses. In both Divisions, it was further revealed that

every year there was a hunger period. The respondents, however, pointed out that they had established a number of coping mechanisms to deal with periods of food stress. A detailed analysis of these coping mechanisms is dealt with in chapter six since these are socio-cultural factors.

5.1.2 Children and food adequacy

In Usigu Division, the findings of the study indicate that 40.9% of the respondents who managed three meals per day fed their children four times daily (Table 5.2a). This suggests that a large proportion of the respondents recognized the need for children to feed more frequently than adults per day. This is mainly due to the fact that children need adequate food for body maintenance and growth and therefore require more proteinic and energy giving foods. The number of meals respondents managed per day may probably indicate the level of food adequacy or availability in their households and, by implication, the level of food security for their children.

On the other hand, the results from Boro Division indicate that 45.8% of the respondents who managed to eat three times a day also fed their children under five years thrice daily (Table 5.2b). This may probably suggest that the number of meals adults had per day determined the number of meals children under five years had. It may, therefore, be concluded that children's food security cannot be improved in isolation from the general improvement of the food

security of the other members of the household. This is because the results show that the more meals adults had the more meals the children also had. This suggests that hypothesis one which states that "Availability of food in the household has a direct influence on the food security status of children under five years" is to be retained.

Table 5.2a: The relationship between the number of meals per day and number of times children ate in Usigu Division

No of meals per day	Number of times children ate per day			
	Twice	Thrice	Four times	Total
Twice	13 (9.0%)	16 (11.1%)	15 (10.5%)	44 (30.6%)
Thrice+	24 (16.7%)	17 (11.8%)	59 (40.9%)	100 (69.4%)
Total women	37 (25.7%)	33 (22.9%)	74 (51.4%)	144 (100%)

Table 5.2b: The relationship between the number of meals per day and number of times children ate in Boro Division

No. of meals per day	Number of times children ate per day			
	Twice	Thrice	Four times	Total
Twice	27 (18.7%)	15 (10.4%)	6 (4.2%)	48 (33.3%)
Thrice+	6 (4.2%)	66 (45.8%)	24 (16.7%)	96 (66.7%)
Total women	33 (22.9%)	81 (56.2%)	30 (20.9%)	144 (100%)

5.1.3 Size of land devoted to cash crops

The findings indicate that in Usigu Division there was a

significant number of respondents who had their land devoted to cash crops. However, there was a slight difference in the provision of meals between those who devoted between 1.6 hectares or more to cash crop production and those who devoted no land to cash crop production but still managed three meals per day, that is, 32.6% and 30.6%, respectively (Table 5.3a). It was found that respondents who reported that their land was under cash crops, actually meant that their land was under food crops that were also sold for cash rather than the conventional cash crops such as cotton, coffee and sugarcane.

Direct observations revealed that Boro and Usigu Divisions lie within the cotton and sugar cane growing zones. The crops are, however, currently not being grown on a commercial basis by farmers due to the collapse of cash crop farming (ROK 1994a). This meant that many people in the area did not have a ready a regular source of income from their farms, which they could use to purchase other foods that they did not produce on their farms. The following crops served as cash crops fruits such as pawpaws, mangoes and oranges and tubers such as sweet potatoes and Irish potatoes. Tomatoes and groundnuts also served as cash crops. A number of these crops were grown by various households but they were rarely used for home consumption.

Indeed, our observations revealed that children rarely benefitted from them because they were sold out to earn cash. Some of the

respondents pointed out that in the past, especially in the period soon after the attainment of Kenya's independence, cotton was the major cash crop. However, cotton production dropped considerably and by 1986 only 1.6 percent of the total land area was under cotton production (ROK 1997a). On the other hand, it should be pointed out that coffee was introduced to Siaya District only recently. In a previous study it was noted that the production of cash crops in the district has been adversely affected by lack of processing facilities and the poor management of cooperatives (ROK 1997a). Among the cash crops that can do well in the area are sugarcane, sisal, cotton and sunflower, but agricultural officers have to do a lot more in providing advice to the farmers on how these crops should be grown, and the government will have to provide the necessary infrastructural facilities and credit to the farmers before cash crop farming could be reinforced in the area (Tables 5.3a and 5.3b).

Table 5.3a: The relationship between number of meals per day and size of land devoted to cash crops in Usigu Division

No. of meals per day	Size of land (in hectares) devoted to cash crops			
	0.4-1.2	1.3+	No Land	Total
Twice	6 (4.2%)	17 (11.8%)	20 (13.9%)	43 (29.9%)
Thrice	10 (6.9%)	47 (32.6%)	44 (30.6%)	101 (70.1%)
Total	16 (11.1%)	64 (44.4%)	64 (44.5)	144 (100.0)

sugarcane is another crop that can do well in the area but the sugarcane processing industry is located very far away from the area and therefore farmers have declined to grow it due to the high transport costs they would incur were they to start producing this crop on a commercial basis.

It was reported by some respondents that non-planting of cash crops such as cotton and coffee in the area has an adverse impact on household food security because of the fact that most people exhausted their food stocks early by selling their harvests. This information supports that obtained from a previous study by Davison (1988), which indicates that the few African countries that have managed to achieve a high level of food security, such as Cameroon, have pursued policies that promote both cash and food crop production. On the other hand, the findings from Boro Division indicate that a majority of the respondents (72.2%) did not devote any of their land at all to the production of cash crops (Table 5.3b). This observation also supports that from Usigu Division that a majority of the respondents derived much of their cash from selling of food crops, thereby contributing a great deal to early exhaustion of their foodstocks.

Table 5.3b: The relationship between number of meals per day and size of land devoted to cash crops in Boro Division

No. of meals per day	Size of land (in hectares) devoted to cash crops			
	0.4-1.2	1.3+	No Land	Total
Once to twice	6 (4.2%)	7 (4.8%)	36 (25%)	49 (34%)
Thrice	21 (14.6%)	6 (4.2%)	68 (47.2%)	95 (66%)
Total	27 (18.8%)	13 (9.0%)	104 (72.2%)	144 (100%)

5.1.4 Food sold from the household and food adequacy

The findings from Usigu Division indicate that 25.7% of those who fed their children once to twice daily sold some of their food while 56.9% of those who fed their children three times daily sold some of their food (Table 5.4a). This seems to suggest that those who had surplus food sold more of it to the market than those who did not produce food surpluses.

Table 5.4a: Number of times children ate and frequency of selling food from households in Usigu Division

Number of times children eat daily	Frequency of food selling from the household		
	Weekly	Monthly	Total
Twice	37 (25.7%)	10 (6.9%)	47 (32.6%)
Thrice	82 (56.9%)	15 (10.5%)	97 (67.4%)
Total	119 (82.6%)	25 (17.4%)	144 (100%)

On the other hand, the findings from Boro Division indicate that

29.2% of those who gave their children two meals a day managed to sell their food at least once monthly whereas 18.7% of those who fed their children three times daily managed to sell their food once a month (Table 5.4b). These results suggest that those who had little food also sold more of it as they did not have anything to sell to get more money to purchase other basic items. This confirms hypothesis number one which was: *"Availability of food in the household has a direct influence on the food security status of children under five years"* (Tables 5.4 a&b).

Table 5.4b: Number of times children ate and frequency of selling food from households in Boro Division

Number of times children eat daily	Frequency of selling food from the household		
	Weekly	Monthly	Total
Twice	55 (38.2%)	42 (29.2%)	97 (67.4%)
Thrice	20 (13.9%)	27 (18.7%)	47 (32.6%)
Total	75 (52.1%)	69 (47.9%)	144 (100%)

5.1.5 Farming techniques

Participant observation revealed that women and children were the major food producers and that they mostly used traditional methods of food production, such as the use of seeds from the previous harvest for planting and a limited use of farm-yard manure. This prevented them from engaging in surplus food production. All the

requirements for food production, such as labour, seeds and fertilizers, were derived from within the homesteads. The women producers relied entirely on simple implements such as hoes and "pangas" for cultivation. There was also widespread lack of the use of tractors and draught animals. That meant that the women could only produce very little from their own limited human efforts. It was also observed that a high proportion of the respondents reported that they cultivated between 0.4 and 1.2 hectares of land. This was often not enough to yield sufficient food to last their households to the next harvesting season. It was noted through participant observation that for women to be able to produce enough food for themselves and for their children they need to have implements such as pangas, booths, wheelbarrows, bags to store crops such as beans, water tanks for storage of clean water, slashers, and ox-drawn ploughs. They also needed credit to enable them to acquire these facilities.

The findings also indicate that the respondents who used modern methods, such as planting of certified seeds and use of artificial fertilizers, and used draught animals for farming activities, realized higher food yields than those who depended solely on traditional methods of farming. However, it was also noted that a majority of the respondents planted seeds derived from the previous harvested crops rather than certified seeds purchased from the market. Furthermore, a high proportion of the respondents reported

that lack of income to purchase farm inputs was the major reason for their reluctance to make use of artificial fertilizers. It should be pointed out that Parker and Lewis (1966:80) observe that a moderate rate of fertilization, 40-70 kilogrammes per hectare, will usually increase the yield of crops by about 50 percent. However, this increase can only be realized when the use of fertilizers is combined with improved varieties of crops, control of pests and good management practices.

It was also reported by focus group discussants that one of the major factors that hindered food production in the area was the practice of waiting for senior members of the extended families to plant their crops before the rest of the members were permitted to plant. This practice contributed to food insecurity by making the juniors miss the opportunity to plant their crops at the right time as they waited for the seniors to plant theirs first.

5.1.6 Educational level and food availability

In Usigu Division, the results indicate that the education level of the respondents had a significant impact on food availability and on the overall food security in the households. The women with primary level of education and who had a higher level of food availability accounted for 34.7% of the respondents while those with no formal education and had a higher level of food

availability constituted only 16% of the respondents. The education of the mother was found to have an impact on children's overall food security. This supports Oyaya (1993) who observes that mothers' education influences children's food security because the mothers were the ones usually in charge of feeding children. In Boro Division, nearly a half of the respondents (46.5%) had a primary level of education and managed to provide their children with at least three meals a day while 16% of those with no education reported that they provided their children with three meals a day.

This suggests that the first hypothesis that states that: *"Availability of food in the household has a direct influence on the food security status of children under five years"* has been confirmed. This is because it has been shown that in Usigu division, the level of education had an influence on household food availability. This may probably indicate that respondents with formal education understood the need to maintain a high level of food security for their children. This findings concur with that of other researchers.

One of the previous studies that is supported by the findings of this study is that of Orodho (1998) who found that in Vihiga District there was an independent relationship between educational level of the household head and the level of food availability in

the household. This finding is also similar to that of Omosa (1998a and b) who found that, in Kisii and Nyamira Districts, the level of education of household heads had an influence on food availability in the households. In Boro Division, it was found that most of the respondents depended on food that they produced directly from their farms, and so the level of education did not directly influence food availability in their households (Table 5.5b).

Table 5.5a: The relationship between educational level and food availability in Usigu Division

No. of times children eat daily	Educational level			
	None	Primary	Secondary	Total
Twice	23 (16.0%)	25 (17.3%)	14 (9.8%)	62 (43.1%)
Thrice	23 (16.0%)	50 (34.7%)	9 (6.2%)	82 (56.9%)
Total	46 (32.0%)	75 (52.0%)	23 (16%)	144 (100%)

Table 5.5b: The relationship between educational level and food availability in Boro Division

No. of times children eat daily	Educational level			
	None	Primary	Secondary	Total
Twice	16 (11.1%)	21 (14.6%)	6 (4.2%)	43 (29.9%)
Thrice	21 (14.6%)	67 (46.5%)	13 (9%)	101 (70.1%)
Total	37 (25.7%)	88 (61.1%)	19 (13.2%)	144 (100%)

5.1.7 Occupation

Results from the focus group discussion indicate that peasant farming was the major occupation of the respondents while others combined peasant farming with trading, and some were skilled workers. In both divisions, it was reported that respondents who combined peasant farming with doing business achieved a higher level of food adequacy compared to those who specialized in only one occupation. A majority of the women involved in peasant farming had only primary level of education. Through direct observation, we noted that some of the children whose mothers were peasant farmers exhibited visible malnutrition symptoms, whereas those whose mothers were in formal employment did not. It was also found that educational levels influenced formal employment. This finding, is similar to that of the Republic of Kenya (1996), which indicates that the literacy rate for women in Siaya District was 58% in 1994 while that for men was 78%. This means that there were more illiterate women in the District than there were men. This probably explains why more men than women were in formal employment. Illiteracy has been noted to be one of the main contributing factors to poverty in the rural areas.

5.1.8 Livestock keeping and food availability

Through direct observation we established that traditional breeds

of cattle, zebu cattle, were the most common breeds kept by the respondents in both Divisions. Although this type of cattle are not high milk producers, they are known to be quite resistant to tropical diseases such as East Coast Fever, foot and mouth disease and trypanosomiasis. Our direct observations also revealed that most people in the study area relied on selling livestock as a major source of ready cash to purchase most of their farm inputs such as seeds, fertilizers and pesticides. In addition, livestock played an important role in the food security cycle in the sense that whenever food became scarce, people sold some of their livestock in exchange for money or food. In addition, the cattle that were kept were relatively well adapted to the local circumstances. The income earned from the sale of livestock also went into the purchasing of goods such as those that the women peasant farmers could not produce themselves.

During focus group discussions it was reported that small livestock, such as goats, sheep and poultry, were particularly important to the women due to their quick growth rate and high reproductive rate, which enabled the respondents to have a ready source of income. The large animals, cattle, served as good "insurance firms" from where funds could be derived, especially during periods of hardships such as famines and other natural calamities. However, husbands were usually the ones who controlled income from the sale of cattle. This perhaps explains why a

majority of the respondents were not interested in cattle but in small animals, goats and sheep, whose income they controlled.

Livestock was found to be quite important especially for its manure which served as an important source of fertilizer for growing various crops and therefore influenced the level of food availability in the households. In both Divisions the study results also indicate that only a few respondents were able to buy inorganic fertilizers. In the past, farmers restored the fertility of their land through allowing it to lie fallow for a considerable period of time. However, due to land scarcity, this method of restoring the fertility of the soil is no longer viable.

It was also reported during focus group discussions that mixed farming helped in diversifying the sources of acquiring food and income in the households. Furthermore, it was pointed out by the divisional livestock officer at Boro that the introduction of grade cattle in the Division would go a long way towards improving the amount of milk available in the households, this benefitted children under five years in particular, since milk is the most important food for children at that age.

It ought to be noted that in many parts of the world mixed farming has now become the norm, although the livestock component has often

been overlooked or ignored altogether (ILRI 1995). ILRI (1995) furthermore, observes that if the developing world is to meet the growing food demands of its population, the scientists have the challenge of developing strategies for increasing food production while conserving production resources such as land, water and the environment. Mixed farming has shown that it can easily achieve these roles through combining crop and livestock production. Small scale farmers can make use of crop by-products to feed their animals. These benefits lead to increased productivity that can be sustained over long periods of time without damaging the environment. The benefits would also be important to all concerned, especially to children under five years who need to constantly be fed on nutritious foods such as milk, eggs and beans, which are all products of mixed farming. The respondents in both study areas practised mixed farming although at the subsistence level. Therefore, they were unable to derive surplus food from it.

5.1.9 Food storage and food adequacy in the households

Direct observations revealed that a lot of food was wasted during the post-harvest period due to inappropriate food storage facilities, which exposed it to thieves and other predators. The study established that in recent years there has been a major shift in the system of storing grains, particularly maize which is the staple food in the area. In the past, maize was usually stored in granaries kept outside the households. However, this form of

storing grain has been undermined because of common food thefts in the area. The increasing cases of grain thefts from granaries could be a reflection of the high level of food shortages or food insecurity in the area. However, most of the people who stole other people's grains were simply criminals. Focus group discussions revealed that the level of food thefts has increased tremendously in the last three years partly because of adverse climatic conditions and also due to the collapsing economy which has made the cost of farm inputs increase astronomically. This trend serves to discourage some people from engaging in increased food production activities.

5.1.10 Causes of food wastage

During the focus group discussions, the following were identified to be some of the major reasons that caused food wastage in the households. First, frequent ceremonies such as funerals and marriages required that visitors be well fed. Second, lack of appropriate food storage facilities led to a situation where pests such as weevils and rats destroyed much of the food. Third, lack of proper food distribution procedures and a lot of food given out to friends and relatives because of the system of food sharing between friends and relatives, *kisuma*, greatly affected household food stocks of many people although it benefitted people in absolute poverty in the community, and those ones adversely affected by natural calamities such as floods and droughts and famines.

5.1.11 Polygyny and food adequacy

Results from the focus group discussions indicate that in some cases women in polygynous marriages competed for children so as to win their husband's favour. Whyte and Kariuki (1991) have observed that more often than not Luo men prefer many children. The results of this study indicate that generally larger families experienced frequent food shortages than smaller ones.

Results from Usigu Division indicate that about a half of the respondents (47.2%) whose husbands did not have another wife managed to provide their children with three meals a day, while only 15.3% of those whose husbands had another wife managed to provide their children with three meals a day. On the other hand, only 3.4% of those whose husbands had three wives managed to provide their children with three meals a day (Table 5.6a).

The results from Boro indicate that 43.8% of those respondents whose husbands did not have a second wife managed to provide their children with three meals daily, while only 11.8% of those whose husbands were married to a second wife gave their children three meals daily (Table 5.6b). These results appear to suggest that nuclear families had a higher level of food security than polygynous ones.

Table 5.6a: Number of times children ate daily and the number of wives per husband in Usigu Division

Number of times children ate daily	The number of wives per husband				
	One	Two	Three	Four	Total
Twice	18 (12.5%)	10 (6.9%)	6 (4.2%)	9 (6.3%)	43 (29.9%)
Thrice	68 (47.2%)	22 (15.3%)	5 (3.4%)	6 (4.2%)	101 (70.1%)
Total	86 (59.7%)	32 (22.2%)	11 (7.6%)	15 (10.5%)	144 (100%)

Table 5.6b: Number of times children ate daily and the number of wives per husband in Boro Division

Number of times children ate daily	The number of wives per husband				
	One	Two	Three	Four	Total
Twice	26 (18.1%)	10 (6.9%)	6 (4.2%)	7 (4.8%)	49 (34%)
Thrice	63 (43.8%)	17 (11.8%)	9 (6.2%)	6 (4.2%)	95 (66%)
Total	89 (61.9%)	27 (18.7%)	15 (10.4%)	13 (9.0%)	144 (100%)

5.2 Income levels of heads of households and food security

The fourth hypothesis was that: "The higher the income level of the household head, the higher the food security of children under five years". This study found that the occupation of the head of the household determined their level of income. The study also found that household heads with more than one source of income tended to have higher food crop yields than those without such sources. This indicates that income is an important factor in household food

security. For instance, Whyte and Kariuki (1997:142), in their study of malnutrition and gender in Western Kenya, found that communities with the highest rate of malnutrition were those in Busia District where 45 percent of the mothers reported a monthly income of a paltry Ksh. 100.

It was further revealed through direct observation that many of the respondents employed traditional methods of farming because of their limited income. They could not, therefore, afford to purchase the expensive farm inputs such as certified seeds, artificial fertilizers, herbicides and pesticides.

Through focus group discussions, this study found that households that had some of their members working elsewhere in wage employment received cash remittances from those members and used those remittances to boost their food production activities or to directly purchase food from the market. Such households had a higher level of food security compared with those that did not have any of their members in wage employment elsewhere. It was also reported that off-farm employment included casual labour that took place outside the household. This study concurs with Haugerud (1981) who observed that off-farm income is the most important determinant in socio-economic differences between rural households.

It was noted through direct observation that the most common types

of farming implements were hoes, pangas, and ox-drawn ploughs. These implements could not allow the people to engage in extensive commercial farming.

In addition, lack of income was usually the root cause of the inability of the respondents to use more sophisticated farming implements such as tractors, spraying pumps and ox-drawn ploughs.

This finding, therefore, confirms our fourth hypothesis that was: *"The higher the income level of the household head, the higher the food security of children under five years"*.

5.2.1 Monthly income

The findings show that in Usigu Division slightly over a half of the respondents (53.5%) earned less than Kshs.1000 while 37.5% earned between Kshs.1000 and 5000. Those who earned over Kshs.6000 and managed three meals a day were 4.8%. On the other hand, 38.2% of those who earned less than Ksh.1000 also managed to have three meals daily. In addition, some of the discussants reported that they resorted to markets after their own food reserves had been exhausted. This was usually during the period before the next harvest. This finding, therefore, suggests that the level of income influenced the level of household food security.

The respondents in Boro Division who earned between Kshs.1000 and 5000 per month and had three meals daily were 36.9%. This indicates that income influenced the level of food adequacy in the households.

The findings from this study show that there was an influence between the quantity of food produced in the household and the income of the household.

5.2.2 Amount of monthly income spent on purchasing food

In Usigu Division, the results indicate that a small proportion (16%) of those respondents who managed one to two meals in a day spent approximately a half of their total income on food purchases. This was because of the fact that most households produced their own food from their farms without having to rely on the food that they purchased from the market using their income. This did not however, mean that income was not all that important in influencing household food security. It was noticed that those households that had a higher standard of living had better nourished children compared to those that had a relatively lower standard of living. It should be pointed out that the amount of income a household spends on food purchases may probably indicate its overall food security status. For example, the 1997-2001 Development Plan categorizes all those households who spend over 70% of their income

on purchasing food as food poor (Republic of Kenya 1997a). It is estimated that the poorest household in Kenya spends an average of only Ksh 730.00 on food per month. This implies that a majority of the rural households in both Usigu and Boro Divisions may be categorized as food poor since most of their heads earned a mere Khs 1000-5000 and spend more than 70% of their total monthly income on food.

In addition, whenever there is food poverty in a household, it is the children who suffer most. This is especially because of the fact that children need food for body maintenance and growth, and also because children under five years are only food consumers rather than food producers. Their food security is, therefore, mostly dependent on the decisions made by powerful members of the households such as their mothers, fathers and grandparents.

The occupation of the head of the household was also found to have an influence on the food security of the children in the households. It was established that occupation of the household head was influenced by the educational achievements of the head of the household. Furthermore, it was found that the farming practices employed by the respondents was influenced by the income levels of the heads of households. The income levels determined in a special way the amount and type of farm inputs used by the heads

households in their food production activities. Focus group discussion results indicate that the amount of remittances that the respondents received from the other members of the household working outside the homestead contributed greatly to improving the food security status of the households.

This suggests that hypothesis four which states that "*The higher the income level of the household head, the higher the food security of children under five years*" should be retained.

It should be emphasized that poverty is a major factor that negatively impacts on the food security status of children. The Kenya Government has pointed out that districts that are often adversely affected by food poverty are Kitui, Kilifi, Machakos and Makueni (Republic of Kenya, 1997a:39). Food poverty has also been observed in the coffee plantations of Kiambu, Murang'a and the large-scale tea farming areas in the Rift Valley. Our interviews, however, revealed that incidences of food poverty are particularly high among female headed-households. These women usually produced their food using the hoe as the major implement of cultivation. They rarely used draught animals or tractors when cultivating their farms, mainly because they could not afford the cost. It is also probably because of their low incomes that they were unable to hire the services of those people who possessed draught animals and tractors. These women did not also use any form of certified seeds

and fertilizers because they could not afford the cost of these farm inputs.

In addition, due to their low incomes the women could not afford to devote large chunks of land to food crop production. As a result, a high proportion of the respondents devoted only 0.4-1.2 hectares of land to food crop production in both Divisions. Previous studies indicate that income is a clear determinant of food production in the households. For example, in a study in Kisii and Nyamira Districts, Omosa (1998a:45) observed that income was a determinant of the level of food production. She noted that the people who did not own land hired land so as to be able to use it to produce food. They did so only when they had sufficient income. Farmers who had land but did not have enough income were compelled to lease out their land to those who had high income. Leasing of land was, therefore, occasioned by financial problems while food insecurity in the households was mainly caused by lack of sufficient income.

In this study it was also reported by some discussants that most people were reluctant to take loans from financial institutions to boost their food production due to the fear of being unable to repay them. This behaviour brought about a vicious cycle of poverty. In both divisions, a high proportion of the discussants reported that they had never taken any loan from any financial institution operating in their area. This was mainly because of the

fear that the people had heard that their land would be sold by the financial institutions if they failed in repaying the loans. This fear came about because some of them witnessed the land of their neighbours who took loans from those institutions being sold. Secondly, a high proportion of the respondents were not familiar with the procedure to be followed when taking a loan. Others were just pessimistic.

During the focus group discussions, the majority of the respondents identified the households' lack of sufficient income as a problem, pointing out that nearly every activity that needs to be carried out nowadays requires money. Adequate income is also necessary for purchasing farm inputs and processed foods from markets and also for hiring land for cultivation and labour. Sufficient income is important in ensuring food security since it enables people to make use of better and more efficient implements and to purchase diversified foods from the market in order to supplement their home produced foods.

It ought to be pointed out that it is part of government policy to improve farming activities and increase food production in the rural areas through provision of loans to farmers to enable them purchase farm inputs. To achieve this objective the government through its financial institutions such as the Agricultural Finance

corporation (AFC), encourages farmers to seek loans from these institutions in order to boost their farming activities (Republic of Kenya 1994b). However, because of difficult financial times, the AFC can no longer manage to advance loans to farmers as regularly as it used to do in the past.

In conclusion, the socio-economic factors that influence food availability in the household in the study area include size of land devoted to food and cash crop production, educational level, implements used for cultivation, land devoted to cash crops, type of fertilizers, type of animals, food storage facilities, number of times food was sold by the household, number of wives in the household and income derived from all sources.

It was found that a majority of the women owned poultry, while larger ones, such as cattle, were regarded as the property of their husbands. This made them take less interest in the care of the larger animals since they considered this to be the responsibility of their husbands. This behaviour reduced the level of food security for children under five years in the sense that milk was not produced in sufficient quantities to meet their needs.

The findings also indicate that a majority of the respondents

devoted 0.4 to 1.2 hectares of land to food production and relied on the food that they produced on their farms rather than that which they purchased from the markets. The study established further that lack of appropriate food storage facilities, food thefts, pests and diseases were the main causes of high food losses in both divisions.

The findings also show that a number of respondents ran short of food by selling it in order to acquire funds for meeting other needs such as paying school fees for their children, buying clothes, and meeting medical expenses. All these reduced the level of food security in the households and children under five years were usually the most affected individuals when food shortages occurred in the households.

The findings also show that respondents who had achieved higher levels of education, that is secondary and post-secondary levels, experienced higher levels of food security in their households compared with those with low educational levels. This is mainly because those with higher educational achievements were in better paid occupations and therefore had sufficient income to buy food to supplement that which they produced from their farms. They also had adequate incomes for investment in food production activities.

Furthermore, this study indicates that households with adequate food experienced higher levels of food security for their children compared with those with less food. Such households provided their children with more than three meals daily. The findings also suggest that a majority of the respondents were reluctant to take loans from financial institutions due to the fear that land, their main source of security would be sold by financial institutions in case they defaulted on loan repayments.

It was also established that polygyny was still being practised in both Divisions. In Usigu, this seemed to promote food security in the households particularly when co-wives competed in food production activities. Children were the main beneficiaries of such competition since sufficient food was produced to meet their food security needs. The findings discussed in this chapter confirm the first study hypothesis that was: *"Availability of food in the household has a direct influence on the food security status of children under five years"*, and also the fourth hypothesis that stated: *"The higher the income level of the household head, the higher the food security of children under five years."*

CHAPTER SIX

SOCIO-CULTURAL FACTORS INFLUENCING FOOD SECURITY

6.0 Introduction

This chapter discusses the socio-cultural factors that affect household food security in the study area. It relates to objectives two, three and five. The data are analyzed using ethnographic descriptive methods. The dependent variable used is the frequency of feeding children while the independent variables include extended family, weaning practices, food sharing with neighbours, decision-making on the types of foods frequently eaten by children under five years, the type of crops cultivated, the amount of money spent on purchasing food and the types of food prohibited to children.

Through focus group discussions, it was established that a high proportion of the people in both divisions held on to firmly established practices, habits and customs that had evolved over time concerning the way they went about their daily activities to satisfy their own food security and that of their children. Cultural factors such as belief in the extended family system, provided a good mechanism for ensuring food security for the children. It was found that the respondents worked hard on their farms in order to avoid the gossip or social sanctions that the society imposed on them. Cultural beliefs regarding the type of

foods considered suitable or unsuitable for particular groups provided the rationale as to why some foods were always available or unavailable in the households. For instance, fortified porridge, that is, porridge made from several types of grain flour, was believed to be the most suitable food for children at the weaning stage. This type of food was always readily available in the households. Indigenous vegetables, eggs, beans and kales, are also considered to be very nutritious to the children.

6.1 Food beliefs and eating habits

6.1.1 Food beliefs and children's food security

The first hypothesis that was tested in this chapter was hypothesis two which was: *"Perceptions of household members of appropriate eating habits have no direct bearing on the food security status of children under five years"*. The results of the study indicate that respondents believed that some types of foods were closely associated with slow growth of children. Such foods included cassava, sweet potatoes and sugarcane. Consequently, these foods were not commonly served to the children.

Other foods that were considered inappropriate for children were meat from any animal that had died of disease and meat of any animal that had been killed by wild animals. Certain types of fish, such as mud-fish and Nile-perch, were believed to cause skin rashes among children and were therefore not given to children. Foods that

were considered appropriate for children included porridge, bananas, ugali, beans, cowpeas, pigeon peas, groundnuts, milk, eggs and fruits like mangoes, oranges, avocados and pawpaws. Other foods that were considered appropriate for children were traditional vegetables such as the popular mrenda (*Corchorus olitorius*) and ododo (*Amaranthus hybridus*) which were considered important because they improved the children's digestive system. Mushrooms, spinach and kales, mashed potatoes, bananas and pumpkins were also regarded as being very important foods for children because children found them easier to digest.

Some respondents supported beliefs that prohibited children from eating certain types of foods. In both divisions a small proportion of respondents supported children's food prohibitions and provided their children with one to two meals daily, that is, 20.2% in Usigu and 29.8% in Boro Division. These results, therefore, do confirm hypothesis number two that was: "*Perceptions of household members of appropriate eating habits have no direct bearing on the food security status of children under five years*".

The respondents who supported food prohibitions reported in the discussions that it is part of their traditional culture. It enables them to maintain a distinct identity as members of their community and not strangers who can feed their children on anything. This finding is similar to that by Were (1987) who

observed that culture is the basis of a peoples' identity. In another study, Barnouw (1987) points out that culture change takes place slowly.

6.1.2 Eating habits and food adequacy

It was also observed through participant observation that the serving of food in separate plates was a common practice. Serving food in separate plates was meant to ensure that each member in the household, including children, received his/her rightful share of food entitlement because it allowed food servers to distribute the available food fairly between each and every member of the household. It also removed unnecessary competition among members of the household.

6.1.3 Washing of hands

The focus group discussion results indicate that the untreated water commonly used in both divisions hampered children's food security because of the fact that it increased the chances of children falling sick due to washing their hands with contaminated water. For instance, UNICEF (1990:69) reports that despite substantial knowledge and application in regard to food safety, contaminated food and water still remain a major health problem. This type of food provides the medium through which a high proportion of diseases were transmitted. Thus, clean water should always be used for washing hands so as not to contaminate the food.

In this regard, women and all those responsible for the feeding of children need to be educated on food preparation skills.

The results of this study also indicate that the most affected children were those whose mothers combined farming with trading activities. In this area it was observed that some mothers were always busy with trading activities, especially on the beaches around the shores of Lake Victoria. Such mothers usually left their children in the care of elder siblings or house-helpers who were not always conversant with particular good methods of preparation of food for children. Although the mothers could give firm instructions on what type of food their children were to be fed on when they were away, it was reported by some respondents that these instructions were not always followed because the house-helpers themselves were very young children who did not understand the implications of not feeding children with the right quality and quantity of food. Secondly, the maid herself could consume a large quantity of the food meant for the child. Thirdly, the maids could give cold food to the children, which could make the children not consume as much as they would have liked had the food been warmed. In brief, it was established that house-helpers could not adequately act as substitutes for the mothers. Therefore, children whose mothers were always away from home suffered higher levels of food insecurity.

There are, therefore, a number of factors which inhibited children's food security, chief among which are cultural beliefs which restricted children from eating certain foods, and the absence of the children's mothers most of the time from their houses or during the time that the children were feeding. Women's trading activities were noted to be contributing a great deal to inadequate feeding of the children. Therefore, while trading could be said to be vital in increasing the women's sources of income, it also contributed a lot to lowering the children's food security status.

Focus group discussions revealed that the gender division of labour was one of the major factors constraining children's food security. It was found that because of the gender division of labour, most of the food production activities were left in the hands of women and children. Consequently, women were always overworked and had little time to attend to the food needs of the children. This study supports a previous study by Pala (1985) that made similar observations in this same community. Pala observed that women were the backbone rural farming in this community. Although they had no land ownership rights, the land that they cultivated was allocated to them by their husbands.

5.1.4 Weaning practices

Through focus group discussions, it was found that women adhered to

long held cultural beliefs concerning the feeding of children. Children were usually weaned at a relatively late age. It was, for instance, a normal practice for the children to breast-feed for a minimum of six months. However, children could be given supplementary foods as early as one month. The most common type of weaning foods were mashed potatoes, porridge and fish. It should be noted that the median duration of breast-feeding in Kenya is 21 months (ROK 1993). The duration of exclusive and full breast-feeding, that is, children receiving only breast-milk or only water in addition to their diet of breast-milk, are both less than one month. This reflects the very early supplementation of breast-milk, with other liquids as well as with solid foods. However, mothers continued breast-feeding for a very long time after the supplement foods had been introduced. It can rightfully be deduced that in both divisions women generally breast-fed for a considerably long period of time. This is based on the fact that many of them breast-fed their children for over a period of six months.

Some respondents reported that meat from diseased animals was prohibited to children under five years. Other foods that were prohibited included fish with bones, sugar-cane, cassava and liver. However, the researcher observed that a big proportion of the respondents did not strictly follow these prohibitions. Consequently, they frequently fed their children on these foods. In a previous study in the same community Ndegwa (1993:46) observed

that it was a great taboo for young men and women to eat animal tongue. Thus, in preparation of a tongue a woman should not even taste it. In addition, women were prohibited from eating hare's meat. In certain cases young girls who were not yet married could also not eat hare's meat. Our interviews showed that mothers did not take much interest in cooking for their children any of the foods which they themselves were prohibited from eating.

Furthermore, a large proportion of the respondents reported that they preferred feeding their children on traditional vegetables. Two of the favourite traditional vegetable are called *mrenda* (*Corchorus olitorius*) and *ododo* (*Amaranthus hybridus*). *Mrenda* vegetable was consumed by all categories of people. It was particularly recommended for children under five years because it was said to be easily digested by the children's tender stomachs. Other foods that were recommended for children included mashed bananas, porridge, mashed potatoes, and a variety of fruits such as oranges, pawpaws, pumpkins, avocados and passion fruits. These foods were said to be good for clearing the children's bowels. Porridge and lemons were said to be particularly important foods for reducing the fat in children's stomachs. Too much fat was not recommended for children because it is believed that it could easily cause diarrhoea. Consumption of too much salt was also not recommended for children under five years because it is believed

that it weakened children's bones, thereby making it difficult for them to walk fast. Meat was also prohibited to children because it is believed to make them develop into greedy individuals.

The indigenous vegetable *mrenda* topped the list of foods that were believed to be particularly good for children. Other nutritious foods were pawpaws, pumpkins and oranges. These foods were said to be important in preventing diseases such as kwashiorkor, marasmus and scurvy. Tomatoes were believed to increase blood in children's bodies and were usually given to anaemic children when recovering from diseases such as malaria, typhoid and measles. Traditionally, cooked blood was also recommended to children recovering from anaemic diseases. In fact, I observed that some respondents gave their children this food when recovering from bouts of malaria or some other severe disease such as measles or typhoid. This may suggest that many people in the community were aware that certain diseases such as a malaria attacked red blood cells, thus the need for the victims to be treated on a diet that was rich in iron, to enable them make a quick recovery. It is plausible that the westernization and modernization processes have not considerably changed the respondents' eating habits and attitudes concerning the value of various types of indigenous foods.

This study also showed that beliefs such as *chira* prevented many mothers from taking quick action to treat diseases related to poor

diet and the deteriorating health condition of the their children. The respondents strongly believed that if a mother engaged in adultery and then returned to cook food for her children, the children would definitely be affected by *chira*. Whyte and Kariuki (1991) have described *chira* in detail, and point out that the belief is widespread in western Kenya. It is believed, particularly by the elderly members of the society, that children did not thrive well nowadays because their parents often broke societal norms such as engaging in adultery and therefore brought *chira* to their children. However, it should be noted that most mothers were aware of the essential foods for their children, but most of them could not afford to give their children these foods due to lack of money (Whyte and Kariuki, 1991:175).

According to Olenja (1991:55) the following are the possible causes of *chira* in children: First, when a midwife, *Jacholo*, who has assisted in the delivery has intercourse with her husband before the required 3-day abstinence period, the child will have *chira*. Second, after a mother has given birth, her husband is expected to abstain from sexual intercourse with another wife or woman for three days in the case of a girl and four days in the case of a boy. If he violates this rule then the child will be afflicted by *chira*. Third, a grand mother who still gives birth is not expected to lay her grandchild on her bed otherwise the child would have *chira*. Fourth, an adulterous parent who touches his/her child

before undergoing certain rituals will cause the child to get *chira*. Fifth, when two women who are still breast-feeding engage in a fight, their children will get *chira* and, sixth, children born out of incestuous relations will have *chira*. *Chira* was reported to be of three major types: cultural-*chira* (marasmus), *akuodi* (kwashiorkor) and *akuot-ledho* (kwasio-marasmic). However, it was generally believed that it was extremely difficult for the condition of *chira* to manifest itself without the breaking of societal norms.

Another belief that prevented young mothers from engaging in activities that could promote food security for their children, is that which required them to depend on their mothers-in-law if they did not want their children to be affected by *chira*. It was interpreted that if a young woman showed the behaviour of being too independent minded then that was a definite sign of disrespect to her mother-in-law and her children could not escape from being affected by *chira*. Whyte and Kariuki (1991:175) have described in detail how beliefs in *chira* govern the people's attitudes towards diseases associated with malnutrition among the Luo, and so we need not repeat those details here.

However, *chira* was believed to be cured by *manyasi*, that is, the administration of traditional medicine to a confessed wrong-doer. A high proportion of the women that we interviewed believed that

cases of *chira* among their children were common because their husbands involved themselves in extra-marital affairs. Only a few of them could show the direct relationship between child feeding practices and children's overall food insecurity.

6.2 Food distribution systems

The third hypothesis was that: *"The nature of food transactions and exchanges between households has a direct bearing on the food security status of children under five years"*.

The findings indicate that there are specific cultural regulations concerning the distribution of food within and between various households. For instance, children and adults were observed to eat separately, as were girls and boys. Traditionally, the father/husband was served food alone or together with his sons.

As far as food distribution within the house was concerned, it was reported in focus group discussions that the husband held the veto power. He was the one who knew whether the household had enough food stocks that could last it to the next harvest or not. In this regard his wife/wives could not sell any food from the household without his consent. The nature of food transactions and exchanges determined to a great extent the varieties of food available in a household. This, in turn, influenced the level of balanced diet that children within the household had.

6.2.1 Food sharing with neighbours

The regulations regarding the disposal of food did not include those that governed the system of food sharing between neighbours. This study shows that sharing of food between neighbours greatly influences the level of food shortages in the households. It was also established during focus group discussions that during periods of famine, the level of food sharing between neighbours diminished considerably. For example, during times of food shortages they shared food once fortnightly, or once monthly. This is because during such times every household struggled to conserve its food stocks in an effort to ensure that it had enough food to last it to the next harvest season.

The most difficult period when households struggled to conserve food reserves was during the months of April and May when the maize crop was almost ready for harvesting. During this time food sharing between households declined considerably as each household economized on its food reserves.

It should be noted that people shared their food with their neighbours, relatives and friends not only because they had food surpluses but often as a way of fulfilling social obligations. Thus, those who frequently shared their food reported that it enabled them to improve their relationship with their neighbours. On the other hand, those who did not share their food were usually

accused of being individualistic, mean or even wizards/witches. Since many people feared to be described thus or have their names blackmailed, they reluctantly opted to share whatever little food they had with their neighbours. Such sharing continues to the present times, and enables children to benefit from the varieties of foods produced in their neighbourhoods.

Part from this, the sharing of food between neighbours made it possible for them to solicit for communal labour. For instance, a person who lacked money to hire labour for the tasks of cultivation, weeding or harvesting, easily called upon her neighbours for assistance because of being on good terms with them as a result of having shared food with them earlier on. After completing the task at hand, the hostess always paid them in kind by organizing a small feast for the participants. Among the common foods that were served during these feasts were beer, meat, chicken, ugali and a variety of vegetables. During harvests, the hostess distributed small proportions of the harvested food to the voluntary labourers. In the past, such communal work parties were more common than they are today.

Results from Usigu Division indicate that food sharing between neighbours is still being practised. In this division, 11.8% of those who fed their children three times daily reported that they shared their food with their neighbours on demand, that is,

Whenever the neighbours requested them to do so. A large proportion of respondents (43.0%) reported that they shared their foods with neighbours on a monthly basis.

On the other hand, a greater number of the respondents in Boro division shared their food with their neighbours. Those who provide their children with three meals a day and supported food sharing on a daily basis were 54.2%. This shows that, like in Usigu, the respondents still adhere to the traditional system of food distribution. It was noted that this system was useful in ensuring balancing of diet between neighbouring households. This finding confirms the third hypothesis of this study that was: *The nature of food transactions and exchanges between households has a direct bearing on the food security status of children under five years.*

The results also indicate that the respondents shared nearly all types of food that they produced with their neighbours. Note that both raw and cooked foods were shared. Among the most frequently shared foods were sweet potatoes, sorghum, cassava, maize and vegetables, especially the indigenous ones such as the popular *enda*. It is worthwhile to remember that some foods were shared with the consent of both the husband and wife/wives whereas others were shared without necessarily having to seek consent from the husband. Vegetables, for example, were shared without the consent of the husband while maize had to be shared with the husband's

consent. It should be noted that maize, *oduma*, is the staple food and any deficiency in this crop spells hunger in the household. This probably explains why it was necessary to consult the husband before selling or giving out the maize.

In addition, the wife could share small quantities of food with neighbours, friends and relatives without having to consult the husband, but if she was to share bigger quantities of the food then she had to consult the husband. In brief, both the husband, and the wife had the obligation to ensure that they maintained enough food stocks in their household for all members of the family at all times. If one of them was more generous than the other with regard to giving others food, the other had to be automatically strict. This suggests that hypothesis three that states "*The nature of food transactions and exchanges has a direct bearing on the food security status of children under five years*" should be retained.

2.2 Polygyny and food distribution

Additionally, the husband maintained his food crop fields from where he produced crops which mainly served as an insurance stock for his wife/wives. In the event of severe food shortages among his wives' houses, he redistributed the food that he had harvested from his own fields to the affected households. In case of no major famine, he sold most of his foods to acquire funds to purchase more

livestock which he later sold to pay school fees for his children, buy clothes for his family members or even pay bride-wealth for another wife. In her study Jean Davison (1988:175) observes that although Bukusu co-wives form individual production units with their children for the cultivation of *silundu* (kitchen garden) they often harvest and process food on a rotating cooperative basis and each wife stores her food individually in her own house.

In the past, the husband's food used to be quite sufficient to meet all these needs. In this case no one really suffered from hunger. There was nobody in the family who felt dispossessed and unable to have sufficient food. This included children under five years. However, our focus group interviews revealed that in the recent past many people felt dispossessed and lacked sufficient food in their households.

Discussants attributed this phenomenon to the rapid population growth which has resulted in the extreme sub-division of land, making it uneconomical to realize surplus food production. A majority of the respondents owned 0.4-1.2 hectares on average. This was not enough to produce surplus foods. Similarly, Jean Davison (1988:175) observes that Gikuyu women in Central Province were beginning to recognize the relationship between increased population and land scarcity although most of them perceived the problem in terms of less land rather than more people. The focus

group discussions also indicated that polygynous households suffer from shortage of arable land for food production activities due to competition by co-wives for fertile land and that jealousy between the wives limited the husband from engaging in food production activities because of fearing to arouse jealousy if he was seen working more in one wife's farm rather than the other. In such circumstances, according to Ayiecho (1992), the husband took the neutral role by withdrawing from food production activities. Ayiecho (1992) further observes in a previous study carried out in Siaya District that in polygynous homesteads, each wife was allocated her own fields, out of which she produced food for her children. She also had considerable autonomy on how to distribute her food after harvesting.

It was reported by some respondents that poverty that prevailed in most households was mainly due to lack of agro-based industries in the area, resulting in most people remaining unemployed and with no regular source of income. Those who did not have money to buy food depended on food donations from relatives, friends and other donor agencies. Children under five years suffered the most during such times. Their suffering could easily be noticed from their physical appearance. Some of them exhibited symptoms of malnourishment such as big stomachs, light pigmented hair and skin rashes, which are well known symptoms of diseases such as kwashiorkor, marasmus and atrophic kwashiorkor. In brief, dependency on food purchases from

markets and food donations were also used to indicate the status of food security in the households.

6.2.4 Extended family

This study shows that the extended family was one of the cultural institutions that was highly developed in both divisions. It is notable that although this institution has been adversely affected by the westernization process, it continued to ensure communal support through encouraging food sharing among its members.

In the pre-colonial period, the extended family used to provide for the maintenance of children, the elderly and all the other members of the household who were unable to provide for themselves. However, in the recent past the capacity of the extended family to continue with this social welfare role has been overwhelmed (Orodho 1998). It is, therefore, quite apparent that this system of African solidarity still provides some security, especially with regard to ensuring the availability of food for the more vulnerable members of the households such as children under five years.

Another cultural institution that was reported to hamper household food security is the practice of waiting for the eldest members of the family to do the initial planting and harvesting of crops before the other members could do so. During focus group discussions, it was reported that this practice often made the

respondents fail to plant or harvest the crops at the right time as they waited for the elders to first plant or harvest their crops.

6.3.1 Decision-making and food security

The fifth hypothesis was that: "Decisions made by powerful individuals in the household such as mothers, fathers, mothers-in-law, senior wives and fathers-in-law, concerning food allocation have a direct bearing on the food security of children under five years".

In both Usigu and Boro, a moderate proportion of the respondents made the decision concerning which foods they fed to their children under five years by themselves. For instance, 47.9% and 61.1% of the respondents in Usigu and Boro, respectively, who gave their children three meals a day made decisions on which foods to provide independently. This suggests that there was a moderate degree of autonomy in the decision-making process among the respondents in both divisions.

In both divisions, it indicates that decisions made by powerful individuals in the household such as mothers and senior wives did not influence the number of meals given to children, since they were always available to see to it that whatever food they had decided for children to be given was given to them.

this study supports Whyte (1997), in a study carried out in Western Kenya among the Abamarachi (sub-group of the Abaluyia), who observed that families where men and women co-operated realized higher food yields compared to those where there was no co-operation. On the other hand, Nasimiyu (1997) points out that among the Abaluyia, men wield more decision making powers than women since they allocate land to the women and appropriate the women's labour. Upon marriage, a man acquires the right to allocate land and to appropriate the labour of his wife and that of her children.

3.4 Constraints to food production

The following were identified during focus group discussions as being major constraints to food production activities in the study area. First, is lack of sufficient farm inputs due to insufficient income. Second, polygyny, was said to lead to large families and, therefore, many children to feed in the households. However, it is also possible that the many children in polygynous families were considered a ready source of labour for increased food production activities. On the other hand, modern schooling takes away this labour due to the fact that all school-age children are supposed to attend school.

Traditional ceremonies, such as funerals and weddings, which require the feeding of large numbers of people at a time, and which interrupt food production activities, were also given as a

constraint to food security in the households. Lack of appropriate technology, especially the use of simple implements for cultivation such as locally made hoes, was also a constraint to food production activities in the area. This is because it made the respondents cultivate very small sizes of land, and also not to turn the soils deep enough to enable the crops to perform well. Therefore, the hoe is not an appropriate implement of cultivation, especially if the aim is to realize high crop yields.

Lack of appropriate food storage facilities, food thefts, pests and diseases were also given as constraints that led to the high rate of food losses, both in the pre-harvest and post-harvest periods. A number of predators and pests were also reported to be responsible for the high rate of food losses. Thus, monkeys, rats, wild cats, moles and weevils were identified to be causes of the high rate of food losses in both divisions.

3.5 Coping mechanisms and household food security

A number of coping mechanisms were employed by a majority of the respondents to survive the frequent food shortages brought about by episodes of prolonged drought or flooding. It was revealed from the focus group discussions that a number of strategies were employed by the people to enable them survive periods of food shortages. For instance, people changed their eating habits by reducing the number of meals they ate per day. Instead of having three meals a day, for

example, they reduced them to two. They also redefined what they considered to be food. For instance, they drank fortified porridge during lunch time while during periods of food surpluses which would normally only be taken at breakfast. They also reduced food sharing with neighbours, relatives and friends, that is, they became more individualistic in the way they distributed their food.

Other strategies that they used included concentrating their efforts on the development of kitchen gardens which are situated near their households. These gardens enabled them to guard their food crops much more effectively compared to food crops in the main fields situated far away from the households, which were usually more prone to thieves compared to the kitchen gardens.

Finally, they resorted to conducting businesses such as selling of small items in the markets to acquire income to enable them buy food. In addition, they reduced selling any other foods in their households and instead sold such items as firewood because there are many bushes where the firewood could be fetched from. Women could also engage in fishing using hooks. Whatever fish they caught by this method was used to feed their children or sold in the market to earn them cash to purchase other foods. Note that during normal times, fishing is an activity reserved for men.

Previous studies have also indicated that various communities

employ different coping mechanisms in order to survive periods of food shortages. Odegi-Awuondo (1990) came up with similar findings in his study in Turkana District. He found, for example, that to survive periods of food shortages, the Turkana nomads reduced the number of meals per day. Similarly, in her study of the Atharaka, Njiro (1994) found that in order to ensure food security during periods of food shortages, these people redefined what was regarded as food.

During the focus group discussions, one of the coping mechanisms pointed out was maintaining kitchen gardens. Food crops from the gardens were usually sold to customers who came to the household and thus served to increase the household's sources of income. The gardens were irrigated and fertilized by refuse from the house. These gardens were considered important because many horticultural crops such as tomatoes, vegetables and fruits, could be planted and could be sold to customers who passed by the households. The gardens were easily maintained due to their easy accessibility to the households.

The focus group discussions also revealed that borrowing food was one of the major coping mechanisms during times of food shortage. The discussants reported that they continued to work hard on their farms and to plant quick ripening crops, especially horticultural crops like vegetables. They also said that they guarded their

remaining food stocks against sale and theft. In addition, they reduced vigorous participation in funeral ceremonies and any other ceremony that compelled them to dispense with large amounts of food. Finally, they changed their overall eating habits. For instance, food which they previously ate during break-fast could now be eaten during lunch or supper time.

The following case studies were used to explore the problems and coping mechanisms employed by the respondents in the study area in their effort to meet their day-to-day food security needs.

CASE I Family health field educator

We carried out an interview with a family health educator at Usigu Division and asked her what her views were concerning the major constraints to children's food security in the division. She said that frequent waterborne and food-borne diseases are some of the major problems that compromise the children's food security status. Generally, lack of clean water is a major problem in Usigu. Although the health officers emphasize boiling of water for drinking, most people, however, did not observe this rule. Consequently, children often drank dirty and contaminated water which made them susceptible to water-borne diseases. The health officer reiterated the point that most women in the area did not regularly boil the water that they gave their children for drinking.

Contaminated water is a mode for the transmission of food-borne and water-borne diseases that affect many children in the area. Another factor that the health officer pointed out as hindering children's food security was the lack of pit latrines suitable for children to use. She noted that even in the homesteads with pit latrines, the latrines were often located far away from the houses, which made it impossible for children to make use of them. Consequently, the children usually defecated in open places, a factor which increased the chances of their food being contaminated by the flies that had come in contact with their undisposed faeces and then their food.

Another factor that was mentioned by the health officer that reduced children's food security is the gender disparity. Some of the respondents reported that men did not participate fully in food production activities. They, therefore, left most of the major food production activities to women and children. This behaviour, the health officer emphasized, was responsible for the low food yields and, therefore, the inability of the parents to provide their children with a balanced diet at all times.

Gender disparity also made some of the parents neglect some of their children, especially the females. Due to the patrilineal nature of the community, the male children were often given priority in terms of feeding as compared to the female children.

she pointed out that in the past the male children were usually favoured by the majority of the people due to the fact that they were the ones who were supposed to carry forward the family name and to provide for and protect their parents during old age. In fact, male children were seen as an insurance against the tribulations of old age.

However, nowadays many people in the area have realized the fact that both male and female children are equally important and, therefore, deserve to be treated equally, including giving them equal food rations. She pointed out that many of the people who provided higher education to their daughters were now reaping much more benefit than those who had educated their sons, since the daughters have turned out to be much more mindful of the parents' welfare than the sons. This reality has influenced the way people allocated food to both their male and female children. Most people have come to accept that males and females are equal and they no longer experience the problem of gender disparity.

Finally, the health officer informed us that polygyny was a major constraint to the achievement of children's food security in the area because it was responsible for making most people have so many children whom they were unable to feed properly. She said that some of the men in the area still maintained the practice of polygyny and that they did not consider it a problem at all.

She also pointed out that, in the past, large families were preferred especially by the most influential men in the community, due to the prestige and influence that the men who headed them derived from them. A large family was a definite status symbol and also provided a large labour force in terms of wives and children. In addition, it was one of the surest ways of ensuring that one's name remained on the lips of many people for many generations to come. A large family also provided its members with security in terms of food and physical protection from enemies, including the many wild animals that used to inhabit the area.

Note that even up to the present times a large section of the Luo community still cherish large families and influential men, even those with western education, still marry more than one wife at a time. The value of many children has made it difficult for some of the men to change their behaviour regarding polygyny. The health educator attributed this behaviour also to the many endemic diseases in the area which raised children's mortality rates, thus making many people desire many children as an insurance against those who might perish from diseases such as diarrhoea, typhoid and malaria. The 1989 population census indicated that Siaya District had a child mortality rate of 213 children out of 1000 live births, which was one of the highest in the country (Republic of Kenya 1994a).

she also told us that food sharing in the area is a problem too. In the past food sharing was quite common among neighbours, relatives and friends. However, in more recent years the sharing of food has not been as common as it used to be, even during ceremonies. This is probably because of the declining food production levels and the fact that foods eaten in such ceremonies have been found to provide a good mode for the transmission of food-borne diseases, since many people may not be in a position to observe hygienic conditions in such situations.

CASE II A successful woman farmer

We also had an interview with a successful woman farmer in Boro Division. She is the wife of a former clinical officer at Boro Dispensary. At the time of the study she had a fully ripened crop of maize, tomatoes, millet and a variety of vegetables and fruits.

Her plot is about 1.6 hectares and her harvest is usually one of the biggest in the division. She told us that her plot was often used as an agricultural demonstration plot by the extension officers in the area. We asked her to comment on what she thought were the major constraints against achieving food security in the area. We also asked her to tell us the secret of her plentiful harvests. She started by narrating to us her life history.

she said that she was born and brought up in Gem, and that is where she met and married her husband, who comes from Kisii District, in 1975. Her husband was then a clinical officer at a dispensary in Gem. He was soon transferred from Gem Division and she accompanied him to his new station in Boro Division. At that time they were quite poor and did not have much property. However, her husband's salary was quite sufficient to meet all their basic needs, including paying school fees for their children.

The area where the local dispensary is now situated was quite bushy and there were so many wild animals around, such as monkeys, hyenas, squirrels and snakes. Nobody, including herself, thought that the area could be so productive agriculturally due to the unreliable rainfall in the area. Many people did not, therefore, spend their energy in serious food production activities. Instead, the men would travel far away to go and do fishing in Lake Victoria or engage in trading activities such as fish buying and selling.

The lady told us that the turning point in her life came in 1994 after staying in Boro for almost ten years when her husband was suddenly interdicted for allegations that he had stolen and sold some drugs from the local dispensary where he was working. His salary was, therefore, terminated and they did not have any source earning a livelihood. At that time, they had two of their children in the local secondary school, that is, Boro Secondary

school. Although they were allowed to continue staying in the dispensary house, life for her and the family became almost impossible. They had very little by way of savings due to the fact that whatever money her husband earned was used to pay school fees and now that he was not earning, there was the danger of the children being sent away from school due to lack of school fees.

That is when the idea struck her mind that she could start some farming activities. When she put this idea to the husband he readily accepted it and hired some land where she started planting crops at a starting capital of Kshs.1200. The husband thoroughly cleared the land and hired some people with ox-drawn ploughs to do the initial cultivation for them. When they started cultivating, some of their neighbours thought that they were crazy and that they were merely wasting time since nothing good could come out of the area due to the unreliable rainfall.

However, they did not lose hope. They consulted the local agricultural extension officers to instruct them on the right season for planting. That year they managed to harvest at least 10 sacks of maize. Out of these, six were sold to pay school fees for their children while four were used for their subsistence.

He told us that since that time, they have never looked back, and continue realizing higher and higher food harvests year after

year. She said that one of the secrets of realizing better food yields is that one has to thoroughly cultivate the land and plant at the right time using the right seeds. In addition, one has to weed very well to ensure that the crops were not choked by weeds. She said that if the majority of the people in Boro Division farmed as she did, hunger and famine would be tales of the distant past. Her earnings from the sale of her crops were to the tune of Kshs.120,000 which, she said translates into Shs.10,000 per month, on average. She said that these earnings are quite sufficient for feeding and educating her children.

At the time of this study, she was in the process of harvesting her latest crop of tomatoes. She sold one crate at a cost of Shs. 1,000 and she had already sold thirty crates by the time of the interview. This meant that she already had earned Shs.30,000. By the end of the season of selling this crop, she expected to earn a minimum of KShs. 100,000. This lady and a few others of her kind in Boro Division are examples of progressive peasant farmers. For this category of women, food security for their children under five years was better compared to the others. In brief, better farming methods can go a long way in solving children's food security problems in the area.

CASE III A grand-mother taking care of her grand children

The third person we interviewed was a woman aged 48 years. At the

time of the interview we found her preparing lunch for the five children who were under her care. She lived in a small house in 'Lochieng' sub-location of Boro Division. We asked her to tell us the main problems she faced in ensuring food security for the children. She started by lamenting that she faced unsurmountable problems in ensuring that she put food on the table, both for herself and for her grandchildren.

She told us that her son died from a mysterious disease after having suffered for only a short time and left a wife and two children. As if that misfortune was not enough, her daughter-in-law also started suffering from symptoms of the same mysterious disease two years after the death of her husband and had died only a few months back, thereby leaving the children as total orphans.

The elderly lady stated that since the deaths of her son and daughter-in-law, she had undergone untold suffering trying to ensure that the children at least had something to feed on, especially during the major meals, that is, lunch and supper. She did all this by herself since her own husband had also perished several years ago. Furthermore, she also has other grown-up children for whom she has to provide food. At the time this interview was conducted it was almost lunch time. She, therefore, requested us to give her some time off to enable her prepare some food for herself and the children before she could proceed with

the interview.

She then walked to her nearby shamba where her green maize was almost ripening and came with a few cobs of maize which she put in a cooking pot filled with water and then put them on the fire to boil. She then quickly returned to the table where we were seated to continue answering our questions. She told us that her life was such a big struggle especially during lean times like then, that is, before the next maize harvest when there were usually severe food shortages.

She often harvested very little maize because of its being constantly consumed in its green state. This case supports Orodho's (1998) study that found that in Vihiga District maize was usually eaten in many forms. It could be eaten as green maize, it could be mixed with beans and eaten in the popular *githeri* form as happens among the Agikuyu, or it could be ground into maize flour and mixed with water to cook the popular dish that is enjoyed by many Kenyan communities, including that of the Luo, namely, *ugali*. According to Orodho (1998), because maize is eaten in these many forms, many people do exhaust their stocks quite quickly before the next harvest.

CASE IV A migrant's wife taking care of her children

In our fourth case, we interviewed a respondent aged 30 years old and who had been married for 12 years. She said that her husband was a public service vehicle driver in Nairobi and only came home once every three months. When we asked her whether she faced any problems in feeding her children, she said that indeed she faced several problems in ensuring that she provided her children with adequate food. She said that sometimes they skipped certain meals like lunches. For breakfast, she usually served them with porridge and only rarely did she give them tea.

Most of the time she could not provide her children with white tea because of the fact that she could hardly afford the price of milk. She could also not provide sugared tea to her children due to the fact that she could not afford to buy sugar. She was of the view that if only her husband could have been working nearer to their rural home they could manage three meals a day. Emphasizing that she rarely receives any remittances from her husband these days, she reported that usually when the husband came home from Nairobi he came with enough money to buy food and other essentials for them. However, they start experiencing food shortages as soon as he returns to Nairobi.

He also said that at times her children asked her to tell them why their father liked staying away from them. At the time of this

interview, she was preparing to go to Nairobi to join her husband. She could no longer endure the long spells of hunger and loneliness which she had to undergo while waiting for her husband to come from Nairobi or to send the occasional remittances. She told us that the major constraint which she faced was lack of money to purchase food and medicine, especially for her children when they fell sick.

The case of this respondent is an example of many women in Usigu who have got to struggle all alone in feeding their children due to the high rate of male out-migration in search of wage employment in the urban areas. Such women had to battle loneliness and the daily struggles to ensure that their families survived on minimal resources.

This case also supports our hypothesis that the higher the income level of the head of the household, the higher the food security of the children. Omosa (1998b) also found that income was a major determinant of household food security. The case also supports our earlier findings that cooperation between husband and wife was very necessary for ensuring food security for children in the household. In a situation like this where the wife struggled to provide the food alone with meager resources, the children suffered immensely from food insecurity.

CASE V Ordinary mother taking care of her children

We interviewed another respondent who told us that she usually gave her children three meals a day. At breakfast she gave them tea mixed with a little milk. However, most of the time they took tea with no milk at all, and only rarely did they take tea with bread. During lunch time they usually ate **ugali** and vegetables. Rarely did they eat meat and fish or any other foods rich in protein. She told us that her greatest constraint in achieving adequate food was lack of sufficient money to buy the ingredients. Poverty has been noted to be a major constraint in achieving food security for children.

She also informed us that the hot climatic conditions in the area made food to go bad quickly after being cooked. It was also difficult to store cooked food for long without facilities such as refrigerators. This meant that she had to continue cooking small quantities of food from time to time. This resulted in a major waste of time and energy.

Firewood is also a major problem for her since it required that she goes to the bush to fetch it. She usually feared the poisonous snakes living in the bushes. The informant also told us that she usually avoided cooking meals which required a lot of firewood because she did not like the idea of going to fetch firewood from the bushes. Thus, she did not like to cook foods such as *nyoyo*, a mixture of maize and beans, which required a lot of energy for

heat.

Drought was also a major constraint in achieving food security. She said that drought was a common phenomenon in the area and this discouraged her from planting a number of crops. The high prices for farm inputs such as certified seeds and fertilizers, coupled with the low prices which she obtained from the sale of the farm outputs such as maize, discouraged her from cultivating a bigger portion of land.

Another major constraint that was encountered in producing her own food is that of her crops being destroyed by disease. She gave us an example of a new disease which destroys the leaves of cassava. This disease, which agricultural extension officers call the cassava mosaic, makes the leaves of the cassava crop wither and then prevents the plants from developing any roots. She said that this disease spread all the way from Uganda and Kenyan authorities, especially agricultural extension officers, have done very little to prevent it from spreading. She was of the opinion that unless the government, donor agencies and other parties interested in improving the general food security of the area took immediate measures to prevent further spread of the disease, there would soon be a major famine in the area.

Lack of cash crops was also given as one of the reasons why she

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faced food insecurity problems. More often than not she said that she exhausted her food stores early before the next harvesting season because of having to sell the food in order to obtain money to satisfy other basic needs such as purchasing foods like salt, sugar and cooking fat.

This example clearly shows us the challenges that most women have to undergo in order to ensure that their children had adequate nutritious food. Lack of technologies that make women's work easier contribute to children's food insecurity. We note that she usually avoided cooking beans, a well-known nutritious food, because of fearing to go and fetch firewood from the bush. This case also shows that the emergency of new diseases that attack crops such as cassava pose a major problem in efforts to ensure food security in the area.

2.6 Summary of the major findings

This chapter reveals that certain types of foods were prohibited to children under five years. Such foods included mud-fish and the Nile perch which were believed to cause skin rashes among the children. It was also established that certain types of foods were highly recommended for children under five years. Such foods included a traditional vegetable *mrenda*, mashed potatoes and bananas, fortified porridge and milk. It was further found that children were weaned after having been breast-fed for a long time.

six months was normally the minimum period that children were breast-fed.

The study established that a majority of the people believed that children could not be healthy however well they are fed if their parents continued breaking societal norms. The contravention of societal norms causes *chira* among the children. It is believed that parents who engaged in vices such as adultery, ignoring or neglecting to show respect to the elders or failing to perform certain rituals when they were required to do so, could cause their children to suffer from *chira*.

It was found that this belief made most people neglect giving their children nutritious foods, even when all the symptoms of malnutrition were manifested in their children. It also resulted in the people being reluctant to take their children for treatment when they became sick since they believed that the children were affected just by *chira*. It was, however, found that *chira* could be cured by *manyasi*, that is, the administration of traditional medicine to a confessed wrong doer.

The study also established that food sharing among neighbours was quite common and that this institution enabled people to solicit for communal labour. It also fostered cooperation in food production and distribution activities between neighbours, thereby

enabling people and their children to enjoy a variety of foods that were obtainable in the neighbourhood. Among the types of foods that were shared were the popular traditional vegetable *mrenda* that was believed to greatly improve the children's digestive system, maize (*oduma*) which is the staple food in the community, sweet potatoes and bananas. Few of the foods prohibited to children under five years such as mud-fish and the Nile perch were shared. It was also found that sharing of food was more often a way of fulfilling a social obligation since it enhanced peace and harmony between the participants.

The study also found that polygyny continues being practised. Through direct observation, I noted that most polygynous homesteads had many children. The institution promotes the extended family system that continues to be cherished among some people in the area. The system was, however, found not to foster food security among the children. It was also found that households with a higher number of children under five years had fewer meals per day compared to those which had fewer children. This was an indication that households with fewer children had a higher level of food security than those with many children.

It was also observed that people used a number of strategies to survive periods of prolonged food shortages. Such strategies included change of behaviour concerning eating habits. For

instance, the number of meals eaten per day was reduced during times of food shortages. Some households reduced their meals from three to two per day. The type of foods eaten during each meal was modified, for example, porridge could be taken during lunch time rather than during breakfast. Food sharing between various households declined considerably; in other words, people became more individualistic.

This study found that most mothers of children under five years made most decisions regarding the type of foods they fed their children under five years by themselves without consulting anybody. This indicates that the mothers have to be empowered in all ways to make decisions that would always be beneficial to the food security needs of their children. This chapter confirms the second, third and fifth hypotheses of this study. The second hypothesis was: *Perceptions of household members of appropriate eating habits have a direct bearing on the food security status of children under five years*". On the other hand, the third hypothesis was: *"The nature of food transactions and exchanges has direct bearing on the food security status of children under five years."* Finally, the fifth hypothesis was: *"Decisions made by powerful individuals in the household such as mothers, fathers, mothers-in-law, senior wives and fathers-in-law, concerning food allocation have a direct bearing on the food security of children under five years"*.

CHAPTER SEVEN

SUMMARY AND CONCLUSION

7.1 Summary

In this study socio-economic and cultural factors were investigated to find out how they influenced the food security status of children under five years. A number of methods were used to collect data, such as participant observation, structured interviews, key informants, case studies and focus group discussions. Both qualitative and quantitative methods were used to analyze the data. The qualitative methods were ethnographic descriptions, while the quantitative ones included calculations of frequencies and percentages.

7.1.1 Food Availability and children's food security

The first objective of this study was: *To document the extent to which the availability of food directly influenced the food security status of children under five years.* The main findings concerning this objective were as follows:

First, the study established that most respondents cultivated small pieces of land, ranging from 0.4 - 1.2 hectares using very simple implements such as hoes and pangas which did not allow them to produce food that could last them from one harvest season to the next. However, the maintenance of kitchen gardens boosted household

food security in both areas of study. These gardens were usually maintained very close to the homesteads and, therefore, the food crops produced on them were quite accessible to the household members, and more particularly to children under five years.

Second, the results of the study show that a large number of mothers with formal education fed their children on a more balanced diet compared with those with no formal education. A high proportion of respondents had achieved primary level of education. The study results indicate that the education of the mother does influence the food security of children under five years since educated mothers are more informed on good dietary habits that they need to maintain to ensure the food security of their children.

This study also concurs with that of Orodho (1998:125) who found that households whose heads had formal education tended to produce more food other factors remaining constant. The education of the mothers was found to be useful in enhancing the food security of their children because it broadens their scope of knowledge which enables them to make use of the resources available.

Third, the study finding indicate that polygyny is still a widely practised form of marriage in the area. The practice was reported to increase land sub-divisions, thereby limiting the sizes of land under food crop production because each wife had to be allocated a plot for the cultivation of crops for her household. This result supports the view of a previous study by Orodho (1998:125) who

found that the larger the family size, the less the food produced or rather the fewer days it lasts after the harvest.

Fourth, the findings indicate that households which used better food storage facilities experienced a higher level of food security than those that did not have such facilities. For instance, most of the respondents preferred to store their grain foods in sacks kept in their houses rather than granaries built outside their houses, which made it easier for thieves to have access to it during the night. This suggests that lack of appropriate food storage facilities, leading to food thefts, could be a contributing factor to the high rate of food losses in the post-harvest period. The study also established that food losses were also as a result of predators such as monkeys and rats, and pests such as weevils.

Fifth, it was established that families whose members co-operated in food production activities had a higher level of food security for their children than those whose members did not co-operate. Focus group discussants reported that there was a high rate of male-out migration which left all the food production activities in the hands of women and contributed to reducing co-operation between husband and wife/wives in food production activities. This increased women's work load and reduced the time that they spent feeding their children, thereby lowering the children's food security status.

7.1.2 Eating habits and food beliefs

The second objective of this study was: *To examine the extent to which eating habits and beliefs concerning the consumption of certain foods directly influence the food security status of children under five years.* The findings suggest that:

1. The household members' food perceptions affected children's food security status. Some types of food such as the Nile perch and mud-fish were prohibited to children. On the other hand, fruits and other vegetables, especially the popular indigenous *mrenda* and *ndodo*, were believed to improve children's digestion. These were, therefore, fed to children. In addition, the most preferable foods for weaning children were mashed bananas and potatoes, porridge and milk. Furthermore, the respondents believed that malnutrition was *chira*, a wasting condition ascribed to the breaking of societal norms. This belief hampered the children's food security as it made the mothers neglect their children's nutritional problems as they held firm to the mistaken belief that the obvious symptoms of malnutrition among children were symptoms of *chira*.

Mothers breast-fed their children for considerably long periods of time. Sixteen months of breast-feeding was usually the minimum period that the discussants reported to have breast-fed their children. Overall it was found that in both Usigu and Boro divisions a large proportion of the respondents breast-fed their

children for a considerably long period of time. Ndegwa (1999:55) observes that the mean breast feeding duration is 17.8 months.

7.1.3 Food distribution systems

The third objective was: *To determine the extent to which food distribution systems by various households directly influenced the food security status of children under five years.* The two main findings concerning this objective were as follows:

1. A number of methods were used to cope with food shortages in households, such as borrowing and exchanging food with neighbours, relatives and friends, reducing the selling of food and generally re-defining what was considered to be food. Some types of foods were exchanged with the consent between husband/wife while others did not necessarily need such consent. Maize, the staple crop in the area, was one of the foods that could be exchanged with the consent of the husband/wife. This was one way of controlling food shortages in the households. The study also found that over reliance on maize as a major staple food was one of the reasons for recurrent food shortages in the area. The results of this study are similar to those of a previous study by Orodho (1998) who found that a majority of households in Vihiga District over-relied on maize as the staple food and neglected the traditional foods (millet and sorghum) as well as pumpkins, avocados and guavas which are also drought resistant and are getting extinct in the face of

looming hunger in Vihiga District (Orodho, 1998:147).

2. Food sharing between neighbours , friends and relatives was a common practice in the study area. This practice enhanced children's food security by enabling them to share in the different varieties of foods produced in the neighbourhood.

7.1.4 Income and food security

The fourth objective of the study was: *To examine the influence of income levels of heads of households on the food security status of children under five years.* There were five main findings regarding this objective, as listed below:

1. In both areas of study, households with more than one source of income realized a higher level of food security compared to those who depended on only one source.

2. Households that had some of their members in wage employment received cash remittances which they used to boost their food production. In Boro Division, for instance, the results showed the amount of income mothers had influenced the amount of income spent on purchasing food per month and the household food security. It was shown that remittances from household members in wage employment formed a big part of the households' sources of income.

3. Most respondents in both Divisions earned between Ksh 1,000 and Ksh 5,000 per month, which was not enough to satisfy household food security needs.

4. Respondents rarely took loans from financial institutions in order to boost their food production activities. Most of them failed to take loans because they lacked assets that they could use as collateral to enable them secure the loans. They also feared that financial institutions would sell off their land, which was usually their main security, in case they failed to repay the loans.

5. Lack of sufficient income resulted in most of the respondents not being able to purchase farm inputs such as certified seeds, spraying pumps and artificial fertilizers which could boost their food production levels. Lack of income made most of them remain subsistence producers, rather than commercial producers, thereby lowering the level of food security in their households.

7.1.5 Decision making and food security

The last objective of this study was: *To investigate how decisions made by powerful individuals in the household, such as husbands, mothers-in-law and senior wives, had a direct bearing on the food security status of children under five years.* The main findings pertaining to this objective were:

1. The cultural practice of waiting for the seniors to plant their crops before all others could plant theirs adversely affected the level of food security in the households. This is because it, usually made the junior members of the households miss planting their crops at the right time, thus making them not realise higher food crop yields.

Mothers were the ones who mostly decided on the types of food that their children were fed on. Focus group discussants, however, noted that the mothers were not always available to ensure that their children were fed on the right types of food. It was also reported by focus group discussants that proteinic foods were often inadequate in the households, thereby lowering the food security status of the children.

2 Conclusion

Overall, the results of this study suggest that there were some slight variations in the food security status of children in Usigu and Boro Divisions. These variations were due to the different economic activities in the two divisions. The children in Usigu Division seemed to suffer more than those in Boro because a majority of their mothers engaged in fish trading activities, which made mothers leave their children in the care of other children for the most part of the day.

generally, in both Usigu and Boro Divisions, the respondents cultivated very small parcels of land, that is, between 0.4-1.2 hectares. The respondents could cultivate larger pieces of land if only they had higher incomes. The results suggest that the respondents were very much aware of the causes of food insecurity and of ways to alleviate their problems. What they lacked, however, was the capital to implement development projects aimed at increasing their incomes.

This study concludes that the practice of breast-feeding children for long periods, that is, for more than six months, was beneficial to children's food security and needs to continue being encouraged because mothers' milk is very nutritious as observed by Ndegwa (1993). The study also concludes that some types of food prohibitions were beneficial to children as they enabled their mothers to feed them on a variety of alternative foods. For instance, children's prohibition of certain types of fish such as the Nile-perch and mud-fish made their mothers feed them on other alternative foods, such as beans, milk and green-grams, that are equally nutritious.

As a result of the high rate of male out-migration in search of wage employment in distant places, there is need to forestall the migrations by encouraging the establishment of local industries in the area, such as a fish processing factory. Therefore, providing many people with job opportunities in a nearby place and thus

enable them to earn additional income to boost food production activities and therefore increase food availability in their households.

The establishment of kitchen gardens should be encouraged as it enhances food security in the households. There is need to promote cash crop production in the area as this would help raise household incomes which would, in turn, enhance food security in the households by making the respondents not exhaust their foodstocks by selling food crops whenever they were in need of cash. This would improve children's food security.

The practice of food sharing should be boosted between neighbouring households, relatives and friends, as it enabled children to benefit from the variety of foods produced in the neighbourhood. Since the traditional coping mechanisms were important in cushioning household members against famine during periods of food shortages, they should be encouraged.

Finally, there is need to increase milk production in the area, by producing new breeds of cattle such as the exotic dairy cattle, replace the existing low milk yielding traditional ones.

3 Recommendations

3.1 Recommendations for policy makers

Arising from the above conclusions this study makes the following recommendations.

In order to raise crop yields, some useful traditional methods of farming need to be encouraged and developed among the women farmers, for example, the use of crop rotations and inter-cropping. Among the crops that should continue being inter-cropped are green peas, soya beans, maize, sorghum and finger millet. Due to the small number of dairy cattle in the area, the respondents need to be encouraged to plant soya beans to serve as an alternative source of proteins.

Agricultural extension demonstration plots should be introduced at accessible sites such as near local markets, churches or schools. These are usually centres where people frequently meet and they would, therefore, have a chance of observing the good farming practices and, consequently, be able to transfer the knowledge gained to their own farms.

Lack of sufficient extension services was a major constraint to the achievement of food security in the area. For example, the majority of the respondents in both divisions had never been visited by any agricultural extension officer in the last one year before the study. Some women who had received some

extension knowledge derived it from the chief's *barazas* where the agricultural officers lectured them on what they needed to do in order to increase their food production. However, because of the fact that the knowledge was transmitted in an abstract situation the women could not readily apply it. This study, therefore, recommends that agricultural extension services be stepped up in the study area in order to boost food production activities.

3.2 Recommendations for further research

The study makes the following recommendations for researchers: That similar studies be done in various districts of the country in order to determine the major trends that come up in the overall food security in the households.

The study also recommends that more research needs to be done concerning traditional foods that are suitable for children under five years in order to improve their food security.

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APPENDIX I HOUSEHOLD FOOD SECURITY QUESTIONNAIRE

The purpose of this questionnaire is to assist us to gather data on household food security. The information will be used for a Ph.D. thesis in Anthropology. We assure you that all the information received from this questionnaire will be treated in strict confidence. Please tick or circle the right answer to the questions. Thank you for your co-operation.

Date of the interview:
 Division:
 Occupation:
 Location:

Name of the respondent (Optional):

Age:

- | | |
|---|-------|
| 0 | 15-20 |
| 1 | 21-25 |
| 2 | 26-30 |
| 3 | 31-35 |
| 4 | 36-40 |
| 5 | 41-45 |
| 6 | 46-49 |

3. Marital Status of the respondent:

- 1. Married ☐
- 2. Separated (but still married) ☐
- 3. Single ☐
- 4. Divorced. ☐
- 5. Widowed ☐

4. Educational level of the respondent:

- 1. None ☐
- 2. Primary ☐
- 3. Secondary ☐
- 4. College/Polytechnic/Institute/University ☐

5. Occupation:

6. Number of children alive:

Boys:

Girls:

VARIATIONS IN AGRICULTURAL PRACTICES

List four major crops that are produced on your farm.

- (1)
- (2)
- (3)
- (4)
- (5)

What implements do you use in cultivating your farm?

- 1. Hoe ☐
- 2. Ox-drawn plough ☐
- 3. Tractor ☐
- ☐

4. Other (specify) ☐

9. What type of fertilizers do you use on your farm?

1. Manure

2. Artificial fertilizer

3. Other (specify)

10. How much land do you own in hectares (ha)?

1. 0.4 - 1.2 ☐

2. 1.6 - 2.5 ☐

3. 2.8 - 4 ☐

4. 4.4+ ☐

5. No response ☐

(b) How much land do you devote to food crops:

1. 0.4 - 1.2 ha ☐

2. 1.6 - 2.5 ☐

3. 2.8 - 4 ☐

4. 4.4+ ☐

5. No response ☐

(c) How much land do you devote to cash crops:

1. 0.4 - 1.2 ha ☐

2. 1.6 - 2.5 ☐

3. 2.8 - 4 ☐

4. 4.4+ ☐

5. No response ☐

1. What type of animals do you keep on from your farm?

1. Cows ☐

2. Goats & sheep ☐
4. Poultry ☐
5. Others ☐

PERCEPTIONS ABOUT BALANCED DIET

12. List the number of times that you normally eat daily?

1. Once ☐
2. Twice ☐
3. Three times ☐
4. Other (Specify) ☐

13. List at least three types of foods that you eat during each time.

- (1)
- (2)
- (3)

14. Food Beliefs

Which foods are mainly eaten by children under five years?

1. Milk ☐
2. Ugali ☐
3. Mashed potatoes ☐
4. Porridge ☐
5. Rice ☐
6. Porridge mixed with milk ☐

5. Do you support beliefs that prohibit certain categories of people from eating particular foods?

1. Yes ☐

2. No ☐

16. How often are the prohibited foods eaten in your household?

1. Daily ☐

2. Weekly ☐

3. Monthly ☐

4. Other specify ☐

17. Which foods are prohibited to children under five years?

1. Fish with many bones ☐

2. Sugar-cane ☐

3. Eggs ☐

4. Meat ☐

5. No food is prohibited ☐

18. What are your reasons for your answer?

19. How is food served to the family members?

1. Common plates ☐

2. Separate plates ☐

3. Other (specify)

.....
.....

20. Do your children under five years eat from separate plates or do they eat from common plates?

1. Separate plates ☐
2. Common plates ☐
3. Boys share and girls share ☐
4. Boys together and girls together since they can accommodate each others' eating habits. ☐

21. How many times do you feed your children under five years per day?

1. Once ☐
2. Twice ☐
3. Three times ☐
4. Four times ☐
5. On demand ☐

22. Food Storage:

Where do you store your grain foods after harvesting?

1. Granary ☐
2. Baskets ☐
3. Rafters ☐
4. Other (specify) ☐

23. List at least four major problems that you experience when storing your grains

1. Weevils ☐
2. Rats ☐
3. Both 1 and 2 above ☐
4. No problem ☐

24. Where do you store your non-grain foods?

- 1. Cupboards ☐
- 2. Gourds ☐
- 3. Baskets ☐
- 4. Other (specify) ☐

FOOD SHARING AMONG FAMILIES

25. Do you share any food with neighbouring household?

- 1. Yes ☐
- 2. No ☐

26. If your answer is yes to question 25, how often do you share your food with the neighbouring households?

- 1. Daily ☐
- 2. Weekly ☐
- 3. Monthly ☐
- 4. Other (specify) ☐

27. List at least four types of food that you share with the neighbouring households:

- 1. Grains ☐
- 2. Vegetables ☐
- 3. Root crops ☐
- 4. All 1, 2 and 3 above ☐
- 5. Not applicable ☐

28. Do you sell any of your food for cash?

- 1. Yes ☐
- 2. No ☐

29. How often do you sell it?
- | | | | |
|-----------|--------------------------|--------------------|--------------------------|
| 1. Daily | ☐ | 3. Monthly | ☐ |
| 2. Weekly | ☐ | 4. Other (specify) | ☐ |

30. List at least four major types of foods that you sell.

- | | |
|---------------------|--------------------------|
| 1. Fish products | ☐ |
| 2. Animal products | ☐ |
| 3. Cash crops | ☐ |
| 4. Cereals | ☐ |
| 5. Vegetables | ☐ |
| 6. All of the above | ☐ |
| 7. N/A | ☐ |

NATURE OF FAMILY STRUCTURE

31. How many wives does your husband have?

- | | |
|----------|--------------------------|
| 1. One | ☐ |
| 2. Two | ☐ |
| 3. Three | ☐ |
| 4. Four | ☐ |

32. Do you share any of your food with your co-wives?

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

33. In your opinion is polygyny (the marriage of more than one wife at the same time) promote or inhibit food security within your household?

- | | |
|-------------|--------------------------|
| 1. Promotes | ☐ |
| 2. Inhibits | ☐ |

34. Give reasons for your answer

KNOWLEDGE OF RETARDATION

35. Do all children of the same age consume same the amount of food?

- 1. Yes ☐
- 2. No ☐
- 3. N/A ☐

36. (a) Do all children of the same age have similar height?

- 1. Yes ☐
- 2. No ☐

(b) Do all children of the same age have similar weight?

- 1. Yes ☐
- 2. No ☐

37. What do you think is the main reason for your answer in question 36 (a) and 36 (b).

- 1. Genetic differences ☐
- 2. Disease (chest pain/stomach problems) ☐

38. At what age should children be weaned?

- 1. 6 months ☐
- 2. 7-12 months ☐
- 3. 12-18 months ☐
- 4. 19-24 months ☐
- 5. 25-30 months ☐
- 6. Others specify ☐

9. Do children who breast-feed for more than six months grow faster than those who do not?

1. Yes ☐ 2. No ☐

10. Which are the best foods for weaning children? List them in order of priority.

1. Mashed potatoes	☐
2. Porridge/milk	☐
3. Mashed bananas	☐
4. Lactogen	☐
5. All of the above	☐
6. N/A	☐

LEVEL OF INCOME

1. How much is your monthly income from all sources in Kenya Shillings?

1. Less than 1000	☐
2. 1000-5000	☐
3. 5000 - 10000	☐
4. Over 10,000	☐

2. How much of your income do you spend on food?

1. Over a half	☐
2. A quarter	☐
3. Less than a quarter	☐

DECISION MAKING

3. Who decides on which crops are to be grown?

1. Myself	☐
2. My husband	☐
3. Mother-in-law	☐

4. Father-in-law ☐

5. Both yourself and your husband ☐

44. Who decides on which foods are to be sold from your household?

1. Myself ☐

2. Husband ☐

3. Mother-in-law ☐

4. Father-in-law ☐

5. Both myself and my husband ☐

45. Do orphaned children under your care feed together with your children?

1. Yes ☐

2. No ☐

3. N/A ☐

46. Do you experience any problems in feeding your orphaned and own children?

1. Yes ☐

2. No ☐

(b) If yes list some of the problems that you face?

1.

2.

3.

47. Who determines the amount of money you devote to buying food in your household?

1. Myself ☐

2. Husband ☐

3. Mother-in-law ☐

☐

4. Father-in-law ☐

5. Both myself and my husband ☐

48. Who determines the type of food given to children under five years in your household?

1. Myself ☐

2. Husband ☐

3. Mother-in-law ☐

4. Father-in-law ☐

5. Both yourself and your husband ☐

49. Who decides when chicken is to be slaughtered in your household?

1. Myself ☐

2. Husband ☐

3. Mother-in-law ☐

4. Father-in-law ☐

5. Both myself and my husband ☐

50. Who decides when proteinic foods such as eggs are given to children under five years?

1. Myself ☐

2. Husband ☐

3. Mother-in-law ☐

4. Father-in-law ☐

5. Both myself and my husband ☐

APPENDIX 2: FOCUS GROUP DISCUSSION GUIDE

1. What causes food inadequacy in the households?
2. How should grain foods be stored after harvesting?
3. Which foods should be prohibited children under five years?
4. Who should be in charge of food distribution in the household?

5. What role does income level of the household head play in ensuring the level of food security for the household?
6. Who should decide on which foods children under five years should be fed on?
7. What impact would the introduction of cash crops in this area have on the level of household food security?
8. What strategies do you use to survive periods of food shortages in your household?
9. What causes food shortages in this area?
10. Comment on how the government and donor agencies can intervene to improve the level of food security for households in this area.

APPENDIX 3: CASE STUDIES

1. What are the causes of food availability and unavailability in the households?
2. Which beliefs are disadvantageous to children's access to nutritious food?
3. comment on the level of food sharing between neighbours, friends and relatives.
4. What role does your level of income play in ensuring food security in the households?
5. What role do powerful individuals like husbands/wives/mothers-in-law/fathers-in-law play in ensuring food security in the households?.