

KAMPALA INTERNATIONAL UNIVERSITY



SCHOOL OF ENGINEERING AND APPLIED SCIENCES

**WOMEN AND HOUSEHOLD FOOD SECURITY: A CASE STUDY
OF
SONGEA RURAL DISTRICT IN RUVUMA REGION, TANZANIA**

**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT IN PARTIAL FULFILMENT
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DEGREE OF SCIENCE IN ENVIRONMENTAL MANAGEMENT**

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Declaration

I **PETER HELPETER LUENA**, hereby declare that the work contained in this dissertation entitled **“Women and Household Food Security: A Case study of Songea Rural District in Ruvuma Region, Tanzania”** with the exception of the acknowledged references, ideas and concerns is my original work and it has never been submitted for fulfillment of the requirement of a Degree award or other education qualification in any Institution of learning.

Approval

I declare that this is my original work and has not been presented in any University for Academic credit and where other works have been incorporated, sources have been acknowledged.

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Dedication

This project is written in honor of my beloved country women who struggle to build and develop the economy of United Republic of Tanzania.

It is also dedicated to my beloved parents, the late Hellena Lazarus Luena and Peter David Mahundi, may God rest their souls in eternal peace. Special dedication to my beloved Guardian P. Gottfried Rhein, OSB, may God shower you with abundant blessings.

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LIST OF ACRONYMS

AATF	African Agricultural Technology Foundation
CCM	Chama Cha Mapinduzi
CDD	Community Development Department
CFS	Community Food Security
CRDB	Co-operative Rural Development Bank
FAO	Food and Agriculture Organization OF United Nations
GDP	Gross Domestic Product
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immuno-Deficiency Syndrome
IFAD	International Funds for Agriculture Development
ILFS	Integrated Labour Force Survey
ILO	International Labour Organizations
NBC	National Bank of Commerce
NEPAD	New Partnerships for Africa's Development
NGOs	Non-governmental organizations
NMB	National Microfinance Bank
SIDO	Small Industries Development Organization
SSA	Sub Saharan Africa
SUA	Sokoine University of Agriculture
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Funds
VEO	Village Executive Officer
WFS	World Food Summit
WFP	World Food Programme
WHO	World Health Organization of United Nations

ABSTRACT

Food security refers to the availability of food supply to the entire society at all times. It involves a cycle of land preparation, tilling, planting, weeding, harvesting, transporting crops from farm to house, storing, processing, marketing, preparation, and serving food in hygienic manner. The main purpose of this study was to find out the role played by women in promoting household food security in Songea Rural District in Ruvuma region, Tanzania. A total number of 240 respondents were randomly and purposively sampled. Data were collected using questionnaires, observation, interview and literature review. The data collected were analyzed using Statistical Package for Social Sciences (SPSS Ver.11.5) and presented in frequencies and percentages in various graphs. The study meant to cover the activities done by women to promote household food security; the impacts of technologies adopted by women on food in promoting household food security; as well as the constraints faced by women in the promotion of household food security. The study found out that, women also do non-farm activities to earn income to support household needs particularly food stuffs. Income activities include pottery, handcraft, and animal rearing among others, the income earned is having a substantial positive effect on the improvement and the sustainability of the household food security. Women have adopted some technologies such as shelling, winnowing, peeling, slicing, Sundrying, pickling, fermentation, juice extraction, salting and smoking which have enabled them to improve their roles as household heads and managers. The study indicated that the adoption of technologies have helped women to ensure food availability in their households. Hence, the study findings have confirmed that the women' rate of adoption of technologies was high and thus they have enabled women to improve on their roles as household heads and managers. However, the women in the study area were having a number of challenges which reduce their efficiency; the mentioned challenges were problems of land and property ownership, access to credit and marketing facilities and access to information. These challenges were accelerated by social and economical factors. The study recommended putting in place considerations in improving women' decision making authority, increasing access and control over land and inputs, improving access to credits and finance, increasing access to information to increase women' control over organization of production.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Women are the backbone of Agriculture in Africa. They produce nearly three quarters of all the food grown, they do almost all the food processing, handle 60% of the marketing and do at least half the tasks involved in storing food (Gittinger, et al., 1990). Basically, they play a central role in the provision of household food security.

According to the Country Economic Memorandum (World Bank 2007), more than 80 percent of Tanzania's poor derive their livelihoods from agriculture. Between 1991 and 2000, the agriculture sector grew by an average of 3.5 percent. The increase in per capita expenditure by farm households was equally modest, at 7.3 percent over the period 1991-1992 to 2000-2001. Nevertheless, this explains more than half of the total decline in poverty observed during that period. Between 2000 and 2005, growth in the agriculture sector accelerated to an average of 4.8% annually, which is likely to have generated a further drop in rural poverty. Given Tanzania's agricultural potential, there is significant scope for reducing poverty by fostering growth in this sector, thereby increasing farming incomes (Amanda Ellis et al, 2007). Census data on men and women's role in agriculture show the dominant role of women in the sector, including in marketing. The ILFS data indicate that almost all rural households (98%) are involved in agriculture (ILFS, 2002).

In addition to their prominence in agriculture, women bear the brunt of domestic tasks that are often arduous, time-intensive, and energy-consuming. These include processing food crops, providing water and firewood, and caring for the children, elderly and the sick. This last task has assumed particular importance since the HIV/AIDS pandemic in Tanzania. The time and effort required for these duties, in the almost total absence of even rudimentary domestic technology, is very high. Yet this productive work is largely invisible and in practice, not included in the System of National Accounts (SNA) (Amanda Ellis et al, 2007, pg 28).

Village transport surveys in Tanzania show that women spend nearly three times as much time in transport activities – including agricultural, economic and domestic activities - compared with men and they transport about four times as much in volume. Nearly half of the total time spent on transport tasks (Christina M, 1994) in villages in Tanzania is spent on activities related to domestic tasks – fuel and water fetching and traveling to the grinding mill. Household chores are still a predominantly female task, and are determining factors in how women use their time. Key tasks in the household economy are supplying energy through firewood collection, and fetching water. By far the greater share of this is done by women, corresponding to nearly two hours each day. Women's transport needs are typically more complex than those of men, since they are engaged in domestic transport tasks, in transport associated with accessing social and economic services, and in economic activities that require transport of goods to market; adequately responding to these needs could increase women's contribution to economic productivity and qualitatively improve household welfare. Women's access to transport also determines their utilization of existing health and other services, and particularly affects the ability of girl children to attend school (Amanda Ellis et al, 2007, pg 29).

Since many factors add to the time burden of women, there are also many options to reduce that burden. For example, improving accessibility of water or investing in alternative energies has the potential to reduce substantially women's time constraint (Amanda Ellis et al, 2007, pg 29).

1.1.1 The concept of food security

Food security means assurance of a minimal adequate level of food consumption. It prevails if all people have access at all times to enough food for an active and health life (World Bank, 1980). At national level, food security has often been identified with the capacity to supply sufficient food to meet aggregate food requirement on the basis of either domestic production or imports (Geier, et al., 1989). This has led to the creation of national grain reserves in many countries as a means of stabilizing food availability. Our concern here will be primarily on household food security which means access to enough food throughout the year.

Household food security is more than just food production; rather it means balancing household requirements for food for own consumption with needs for cash income to satisfy other demands (United Republic of Tanzania and UNICEF, 1990). Women farmers in particular, have a major role to play in ensuring household food security. As Gittinger et al. (1990:1) noted, "Improving household food security in Africa means focusing on the role of women..."

Therefore, ensuring household food security in Songea Rural District in Tanzania means strengthening the women's position and increasing production and productivity of women farmers. But this can be done by removing the many constraints that they face and improving their access to resources and information.

1.1.2 Food Security in Tanzania

In recent years, Africa has experienced the worst food crisis ever manifested is escalating famine, hunger, suffering and death. Thousands of innocent lives have been lost. About one quarter of Africa's population that is about 100 Million people do not have access to sufficient food at all times to ensure an active healthy life (Gittinger, et al., 1990). The recurrent droughts, the civil war, poverty, the debt crisis and the environmental crisis have all contributed in some way to the precarious food situation in Africa.

Although food production in Africa has increased over the years, it has failed to keep pace with the population which has been growing at the rate of 3% a year. Consequently, food production per person has fallen; for example it fell by about 12.5 between 1965 and 1982 (Harrison, 1987), as a result of the decline in food production, Africa has become more and more dependent on food imports and aid.

Tanzania has been no exception to the above trend. Like many other African countries, Tanzania has become a food deficit country especially since the 1980's as population growth has outpaced the growth in the national food supply. In 1987, rice imports accounted for 17.4% of the total rice consumed and 69.3% of the rice marketed on the official market (Ministry of Agriculture and Livestock Development, 1988).

Theoretically, food security is not a problem at national level. Available data indicate that in most years Tanzania produces enough food to satisfy domestic requirements and that food production exceeds overall food requirements (United Republic of Tanzania and UNICEF, 1990; United Republic of Tanzania, 1992). However, there is evidence that the available energy balance is below 100% of the requirements suggesting that nutritional energy requirements have not been met.

However, imbalances in food production do exist both at regional and household levels. A number of regions including Coast, Dodoma, Kigoma, Lindi, Mara and Tanga produce less food (less than 90%) than they actually require. In additional regions like Arusha, Kilimanjaro, Mtwara, Mwanza, Shinyanga, Singida and Tabora are also considered to be at the highest risk of food insecurity. All these regions are drought prone areas.

1.1.3 Women as food producers

Women in Songea Rural District, Tanzania and in Africa generally are the major food producers and household managers. They are expected to raise all the food for the families. They also work extensively on cash crop production and do non-agricultural work to earn extra income. Women make up the majority of subsistence farmers, producing more than 80% of the food for Sub – Saharan Africa (Dankelman and Davidson, 1991). It is estimated that 78% of the women in Africa are active in agriculture compared with only 64% of the men (Gittinger, et al., 1990).

In Tanzania women comprise about 52% of the total population and account for 75% of the labour force engaged in agricultural production. They are mostly engaged in subsistence small-holder farming of food as well as cash crops, and to a large extent are solely responsible for feeding their families. Women produce about 60-70% of all the food that is consumed by rural household and generated about 33% or more of all household income mainly through small scale agro-industry, training, craftwork and casual work (Jiggins, 1989).

There exists a gender-specific division of labour in the households. Women in Tanzania do up to three quarters of all agricultural works in addition to their domestic responsibilities. Compared to men, they are responsible for 30% of ploughing, 50% of planting, 60% of domestic animal care, 60% of harvesting, 70% of weeding, 85% of processing and storing crops, 60% of the marketing and 95% of domestic work (Dankelman and Davison, 1991; Rodda, 1991).

Women responsibilities vary according to the customs of the different regions, and also their social and economic status within the household setting. A study carried out in Shinyanga District in Tanzania shows that married women are responsible for at least a part of the household's food production and they participate in the cultivation of the crops that fall under the responsibility of the male head of household (Aarnink and Kingma, 1991). Women heads of households, however, are having incomplete control of the agricultural management of their farms and the crop production.

In Rukwa Region, a study by Geier et al (1989) showed that women were now carrying out specifically female, often time consuming tasks such as weeding and harvesting on cash crops fields apart from production of food crops for home consumption. Consequently, an increase in the acreage food production or other food related activities. The mechanization of agriculture which has led to increase acreage in turn has not alleviated the women's workload.

Changes in social patterns and the introduction of technology seem to have affected women's traditional roles to a greater extent, with women's responsibilities and workload has increased dramatically. Women are involved in cash crop production and doing tasks that were previously done by men. Women-headed households are also on the increase not only in Tanzania but Africa in general. In Malawi, for example, women head one third of the rural households, while in Zimbabwe, more than half of the rural households in the communal areas are headed by women (Gittinger, et al., 1990). In Kenya, 60% of rural household are headed by women (Rodda 1991).

In addition to their agricultural activities, women are also engaged in non agricultural activities for cash income to meet their other basic needs and perform other household chores. Studies in Tanzania have shown that women work up to 16 hours each day, account for 67% of household traveling and 85% of load carrying mostly on foot (United Republic of Tanzania, 1992).

Despite their important roles as producers and household managers, women are often marginalized when it comes to allocation of resources and decision making. They lack direct access to resources such as land, other capital and credit, and information which in the end reduce their productivity. For example, while it is recognized that women produce more than half of the world's food, they have Title to only 1% of the world's land (Dankelman and Davidson, 1991). Women also have limited access to markets for inputs, production and sales. They also lack the opportunities to learn new skills and to acquire affordable technology. All these constraints interfere with their critical role in promoting and improving household food security.

1.2 Statement of problem

Food security in Tanzania is defined predominantly by the developmental issues that face most Sub-Saharan countries. Issues of infrastructure, economic and agricultural policy, governance, education and provision of health care play pivotal role in household food security (WFP, 2007).

Women in rural areas of the District generally are the major food producers and household managers. They are expected to raise all the food for their families. They also work extensively on cash crop production such as Tobacco and non-agricultural work to earn extra income. Women make up the majority of subsistence farmers, producing more than 80% of the food (Dankelman and Davidson, 1991) for the ward and the District.

However, the majority of these women uses the hand hoe and depends on family labour in agricultural production. They practice semi-improved farming techniques due to low level of education, low purchasing power, have low nutritional status et cetera. These

women normally live in remote areas whose villages have very few basic services, markets for their produce may be far away, transport is difficult, middlemen prices, low and unfavorable farm supplies and tools and inputs such as seeds, fertilizers and pesticides are unavailable or very hard to procure (Marilyn and Ruby, 1987). The same may be the case as regard training and agricultural techniques. Despite this, they are still the main producers and providers of food in their homes/households hence food security. Therefore, this research focused on finding out women's position towards increasing production of food in their households.

1.3 Objectives

1.3.1 Main objective

To find out the role of women in promoting food security in Songea Rural District

1.3.2 Specific objectives

- To find out the activities the women are engaged in towards the promotion of household food security.
- To examine the technologies adopted by women in the area of study
- To find out the impacts of technologies adopted on food availability.
- To find out challenges faced by women in food production and its security.

1.4 Research questions

1. How have women tried to promote food security in their households?
2. What are the technologies that were adopted by women?
3. What are the impacts of technologies adopted on food availability?
4. What are the likely constraints that women face in promoting food security?

1.5 Significance of study

This research focused on the role played by women to promote food security in Songea Rural District in Tanzania. It also identified various activities women are engaged in towards the promotion of food security and examine the adoption of various technologies by these women to promote food security as well.

The findings of this research are useful to provide necessary information for policy formulation by the stakeholders, specifically the Government of the United Republic of Tanzania with regard to extreme poverty and hunger alleviation to improve the quality of life. Furthermore, this research can be used to guide further research in the same area of study. Besides, the work can benefit scholars, students, policy-makers and development agencies from nations emerging from food insecurity in any part of the world.

1.6 Scope and Delimitation of study

The study is limited on the role played by women in promoting household food security in Songea Rural District. It targets only the women, GOT and NGOs/CBOs workers since they are the ones who are expected to provide reliable information regarding to research objectives.

In terms of area, the study covers 10 GOT ($n = 10$) agencies, 10 NGOs/CBOs ($n = 10$) and 180 representatives households ($n = 180$) because of proximity and owing to the time limit in data collection. The sample considered of 10 agencies, each with 4 respondents. There were 10 NGOs/CBOS, each comprised of 2 respondents. This sample size was expected to provide the required information that would be helpful in answering the research objectives.

1.7 Operational Definition of terms

The following are the definitions as used in the study;

Livelihood

This refers to access to education, healthcare, housing, investment activities among other infrastructural development that affect human life.

Government officials

These refer to persons working for the Government of Tanzania (GoT).

NGO/CBO staff:

This refers to individuals who work for the Non-governmental organizations or Community based organizations.

Food access

This is determined by the household ability to obtain food from their own production, purchase, and gathering or through transfers such as gifts and exchanges.

Food security:

This refers to food that is available at all times, to which all persons have means of access that is nutritionally adequate in terms of quantity, quality and variety, and is acceptable within the given culture.

Food insecurity

This is the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

1.8 Organizations of the Study

Chapter 2 of the study discusses the literature review while chapter 3 and 4 present methodology used and data analysis respectively. Chapter five discusses the summary, recommendations and conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the global situation of the food security, food security situation in Africa and Sub-Sahara Africa, situation of food security in Tanzania, food access and food consumption. It also discusses the income generating activities done by women and technologies adopted by women to promote food security in Songea Rural District.

2.2 Global Situation of the Food Security

In the 1996 Rome Declaration on World Food Security, *food security* was defined as “food that is available at all times, to which all persons have means of access, that is nutritionally adequate in terms of quantity, quality and variety, and is acceptable within the given culture.” Availability, access and affordability are all elements of food security, complex issues that encompass a wide range of inter-related economic, social and political factors, internal and external which challenge Africa’s ability to address food security.

Worldwide the trends are alarming as progress in reducing hunger in the developing world has slowed to a crawl and in most regions the number of undernourished people is actually growing, despite the fact that world food production has grown faster than world population in the past three decades. The latest estimates indicate that some 840 million people were undernourished in 1998-2000, 11 million in the industrialized countries, 30 million in countries in transition, and 799 million in the developing world (FAO, 2002).

The 1996 World Food Summit (WFS) set a target of a reduction in the number of hungry people by at least 20 million every year between 2000 and 2015. While some regions made impressive progress over the two decades preceding 2000, demonstrating that hunger is not an intractable problem, the latest figures on numbers of undernourished worldwide reveal that since the 1996 the average annual decrease has been only 2.5 million, far below the level required to reach the WFS goal of halving the number of

undernourished people by 2015. Progress will have to be accelerated to 24 million per year, almost ten times the current pace, in order to reach that goal.

The consequences of worldwide hunger are only now being appreciated. At the 2002 World Food Summit the Chairperson stated, "Together with terrorism, hunger is one of the greatest problems the international community is facing." In its response the UN Security Council acknowledged its concern that Africa's food crisis is a threat to peace and security (WFS Report, 2002).

2.3 Food Security Situation in Africa and Sub-Sahara Africa

African economies grew annually by only 1.8% during the 1980s and by 2% over the last decade. Failing to keep pace with a rapid population growth rate of 2.8% per annum during the 1990s, overall economic growth amounted to less than one-third of the 7% rate needed to meet the international development goal of halving absolute poverty by 2015. The poor economic performance has broadened the scope of poverty, as the proportion of people living below the poverty line increased from 47.6% in 1985 to 59% in 2000. Consequently, an increasing number of Africans have insufficient capacity to access food and other basic amenities such as potable water, minimum health care and education.

Estimates from FAO (2000) show that, over the last decade, the number of chronically hungry people in Africa increased from 168 million (about one-third of the population) to 200 million. Of these, 194 million are in Sub-Saharan Africa. Africa is the only Region of the world where hunger has thus affected an increasing number of people, with only 10 countries experiencing a decrease in the number of undernourished. The proportion of population stricken by chronic hunger at the end of the 1990s stood above 20% in 30 countries and 35% in 18 countries.

For sub-Saharan Africa, the estimated daily energy intake of 2,200 kcal barely covers the minimum requirement for a healthy and active live, and represents only 85% of the calorie intake in other developing regions (FAO, 2002). More alarmingly, although the proportion of undernourished in Sub-Saharan Africa is projected to fall to 22% by 2015,

the absolute number of hungry people is expected to increase to 205 million. This upward trend of 22% between the beginning of the 1990s and the 2015 horizon sharply contrasts with the Millennium Development Goal of halving the number of hungry people by 2015 (FAO, 2002).

Available data show that, in Sub-Saharan Africa, the annual growth rate in agricultural output was 4% and 3% for food production between 1991 and 2001. As a result, per capita agricultural output grew by only 2% while per capita food production did not increase at all. To bridge the gap between domestic food production and demand, Africa has had to rely heavily on food imports. Between 1990 and 2001, the value of food imports grew at an annual rate of 2.7%, from 12.7 to 15.4 billion dollars, the equivalent of 51.4% of the value of total agricultural exports. Under the current food crisis, Africa produced an estimated 116 million tons of cereals and imported an additional 51 million tons (about one-third of the total supply) to cover consumption needs in 2002. Dependency on food aid continues to be a major element of food security as the continent receives an annual average delivery of 3.2 million tons of food aid (FAO, 2002).

Food insecurity is closely related to poverty, which is primarily a rural phenomenon in Africa. IFAD's Rural Poverty Report 2000 indicates that about three-quarters of the total population and 70 percent of the total number of poor people in Africa lives in rural areas. The most affected people by rural poverty include rain fed farmers, smallholder farmers, pastoralists, artisan fishermen, landless wage labourers, indigenous people, female-headed households, displaced people and, across categories, women. Despite rapid urbanization, an estimated 60% of the poor will still be rural people in 2020. Moreover, urban poverty and rural poverty are inter-linked, because the former feeds on the latter through rural-urban migration.

Food security, it is well known, requires all-time availability and universal access to food in adequate quantity and quality for a healthy and productive life. In the present context of economic openness and globalization, it is true that food can be acquired through a mix of means, including domestic production, trade and other types of transfers such as

food aid. However, at this juncture, Africa does not have much of a freedom of choice among these options (IFAD Report, 2000). The income and livelihood of the bulk of the rural population depend primarily on agricultural enterprise, which employ, directly or indirectly, 90 percent of the rural labour force. Overall, agriculture employs about 70% of the labour force and contributes 30% of total GDP directly and 20% indirectly, through agribusiness. Hence, for the majority of African households today, domestic food and agricultural production remains an overriding determinant of overall income, availability of, and access to food. The development of agriculture and the rural economy holds the key for broad-based economic development, poverty reduction and sustainable food security throughout the Region. The New Partnership for Africa's Development (NEPAD) underscores this reality by featuring agriculture as the only productive sector among its priority areas of focus (S. Maxwell, 2000 pp.33).

2.4 Situation of Food Security in Tanzania

In Tanzania, food security is defined predominantly by the developmental issues that face most sub-Saharan countries. Issues of infrastructure, economic and agricultural policy, governance, education and provision of health care play pivotal roles in household food security (WFP, 2007). Tanzania is a politically stable country and the biggest and constant threat to food security is the generalized poverty that exists throughout the country. Reoccurring droughts (and flooding in certain locations) also add to the vulnerability (WFP, 2007).

Existing technologies in Tanzania do not guarantee availability of food supply as such. This situation is more pronounced in rural Tanzania, where women play a greater role in ensuring that the family is fed. By and large much of agricultural production is small-scale and women are more involved in agricultural activities than men. Hand tools are used for 82 percent of cultivation and the rest is done with tractors and animal-drawn ploughs (S. Devereux, 2000 pp.143).

In some regions of the country, building houses and herding livestock is also the responsibility of women. The extent to which women participate in livestock production (especially cattle) is directly related to the distance between their dwellings and the place where the animals are raised. In zero grazing areas and nearer the animals is to the house, the greater the women's participation in animal keeping.

Although a substantial amount of data is available in Tanzania, some gaps have been identified in terms of understanding household food security and vulnerability. Existing reports focus predominantly on poverty, poverty alleviation and nutrition, and the data available does not adequately identify the nature and degree of vulnerability that the household are exposed to (WFP, 2007).

Food insecurity and vulnerability is present everywhere in rural Tanzania but varies regionally. The central band of the country shows the highest proportion of households that are food insecure. In regions such as Dodoma, Singida and Tabora, 45-55% of the households are food insecure. In Mwanza, Manyara and Kagera regions food insecurity affects between 20 to 30 percent of the households (WFP (CFSVA), 2007 pg 2). In some areas traditionally considered food secure, the survey has found that a large proportion of the population is food insecure, specifically in Ruvuma and Iringa where 15 per cent of households are classified as food insecure. There is also a high rate (between 24 to 27 per cent) of households vulnerable to food insecurity in the regions of Singida, Tabora, Dodoma and Mwanza. In Lindi, 21.4 per cent of the households are vulnerable. (WFP (CFSVA), 2007 pg 2).

Crop farmers represent 24 percent of the population. It is most important livelihood of the country. Most of their income comes from food crop production, supplemented through cash crops and livestock. In this group, 26 per cent are either food insecure or highly vulnerable. The most food secure groups are fisher folk, salaried, skilled and traders (representing 13.8 percent of the population in total). However even in these groups, between 13 to 20 per cent of households are foods insecure (WFP (CFSVA), 2007 pg 2).

2.5 Food access

Own purchase of food was reported by two third of the rural population as the main source of food. This is unusual in a country that depends heavily on agriculture as a source of income. However the data was collected during the traditional hunger season and when the drought had affected around 40 per cent of the households, therefore decreasing the reported reliance on own production. (Access to food is determined by the household ability to obtain food from their own production, purchase, and gathering or through transfers such as gifts and exchanges) (WFP, 2007).

Purchase of the food is a predominant feature of all consumption groups, livelihoods and regions. In Lindi, Kigoma, Kagera and Iringa the reliance on the purchase of food (55 %) is less than the national average and is offset by own production with the notable exception of Lindi where reliance on gifts and food aid is an important source of food. In Tabora and Mtwara, households rely for 10% on other sources of food in addition to their own production and purchase, such as fishing, hunting and gathering (WFP, 2007).

Nationally only 10.4% of the rural households have “very weak” food access. Kigoma, Singida, Manyara, Tabora and Kagera all have between 20-25% of households with weak food access. Dodoma has the highest proportion of households with very weak food access (38%).

The poor income group has the highest proportion of households with “very weak” access to food (26%). Handicraft, small farmers, Poor income, natural resource dependents and remittance dependents and wage laborers have less than 20% of the households with “good” access to food (WFP, 2007).

2.6 Food consumption

Generally, diet and crop diversification is poor in all assessed households. Almost 50% of the population has poor or borderline consumption profiles. Food consumption is the poorest in the central regions of Tabora (64%), Singida (62%) and Dodoma (48%). Regions in the central belt and most of the coast have high frequency of borderline

consumption patterns with Mtwara (42%), Dar es Salaam (39%), Iringa (37%) and Mwanza (36%) with higher levels (WFP, 2007).

Wage laborers, poor income, small farmers and remittance dependents have the highest frequency of households that have poor food consumption patterns (WFP (CSVA) 2007). 50-60% of the households in the livelihoods agro-brewers, natural resources dependents, poor income, remittances dependents, small farmers and wage laborers fall into the categories of “poor” or “borderline”.

2.7 Income Generating Activities of Women

2.7.1 Fish Production

Most fish farming units are family owned. Household members are engaged in all aspects of pond operation: cleaning of ponds, feeding, fertilizing and harvesting. A daily checking of water, though recommended by fisheries officers, is not practiced and fertilizer is seldom applied. Calcium carbonate is recommended to ponds with acidic soil.

2.7.2 The processing and selling of “Pombe”

Many women see the selling of “pombe” (local beer) as their only means of raising enough money to repay debts, for example, on agricultural inputs; and to maintain their economy. This income meets expenses for daily basic needs and heavy costs, such as house maintenance, school uniform, household utensils and clothes (CDD, 1987).

Pombe processing is time consuming, expensive and risky because the beer can turn out to be undrinkable and impossible to sell. The income earned varies greatly according to the quality of the beer. For example, one woman can earn Tanzania shillings 5,000 per bucket from excellent pombe while another can sell only one bucket for 3,500 on credit, because she had bad luck with five out of eight brewing over a period of two months. She lost all her annual income invested in pombe processing, with which she had hoped to raise the capital to rebuild her household.

On average, one barrel of Pombe brings an income of Tshs. 48,000-60,000. Most women married to men without permanent income said that their husbands usually decide how

the pombe income is to be spent. Although women do the brewing work, the men participate in cassava production, and this gives the natural right to dispose off the income. Other do discuss with their husbands on how to spend the money, however.

2.7.3 The Processing and Selling Of “Maandazi” (Fried Wheat Buns)

Small buns are formed from wheat dough and deep-fried, mainly in the dry season and when flour is available. Some women do process buns everyday and sell them into different places such as schools, village market, or at the bus station at Tshs.100 per bun. This helps women to generate income to supplement in food security (CDD, 1987).

2.7.4 The Processing and Selling of “Ulanzi” (bamboo wine)

During the rainy season, households lucky enough to own bamboo trees earn an average of 5,000 shillings a day from selling ulanzi. In the morning a small bamboo container is fastened to the tree to collect sap from a small carved hole. The container is emptied in the late afternoon and refreshing ulanzi is drunk soon afterwards, before fermentation makes it too strong. However, in some areas such an activity is done by men (CDD, 1987).

2.7.5 Handicrafts

A few women make “*visonjo*”, the straw bowls used for storing grains, carrying grains to milling machines, storing agricultural products, drinking pombe among others. The work is performed while walking or attending meetings or within specific time scheduled by women. A small bowl, selling for 12,500-22,000 shillings takes about two weeks to make. Some beadwork, knitting and pottery are done; the obtained income from handicraft contributes to income generation in the household hence food security (CDD, 1987).

2.8 Technologies Adopted by Women to Promote Food Security

2.8.1 Agriculture

The traditional methods that are adopted and used by women who involve more in crop production are mainly labour intensive. These include hand hoes and other tool which are used to cultivate 82 percent of the total land area.

Improved technologies that help women to boost crop production include animal drawn farm implements and innovatory hand planters. Tractors are currently used on only 5 percent of the total cultivated land. Steps are being taken to establish tractor service centres which will facilitate effective utilization of tractors in crop production. Along with the appropriate technologies mentioned above, other inputs such as chemical fertilizers, insecticides, organic manure, et cetera are used (Marilyn Carr, 1987).

Other agricultural technologies adopted and used by women particularly in livestock production include drinkers and feeders, incubators and hatchers, animal food making machines as well as introduction of improved breeds.

2.8.2 Soil conservation

Lack of suitable soil conservation measures on cultivated land leads to severe loss of soil fertility due to water and wind erosion. Crop rotation, manuring, contour farming, formation of tie-ridges, and tree planting are being used by women in different areas. Of special interest is “Kilimo cha Ngoro” in the Songea rural district, Ruvuma region, where ridges are constructed by both women and men (Marilyn Carr & Ruby Sandbur, 1987).

However, zero tillage which involves minimum disturbance of the soil is only restricted by small-scale farmers, of whom women are the majority, because it involves the use of chemicals which are too expensive. Besides, overuse of chemicals can pollute water sources and even harm the health of local people.

2.8.3 Household Energy

More than 80 percent of the country's population is in rural areas where 60 percent of the economically active population comprises of women. Energy is critical for meeting basic needs, production of food and generation of income. The most important uses of energy are fuel for cooking, food processing and small scale industries such as ceramics, pottery, brewing et cetera. Wood and other biomass fuel comprise about 90 percent of the national energy balance and as much as 90 percent of this fuel is consumed in households.

Women use traditional stoves such as *three stone stoves* and *single walled metal charcoal* stove and improved stoves such as clay stoves and clay liner stoves in promoting household basic needs in promoting food security. Most of these stoves are adopted from designs originating from elsewhere. The improvement has mainly been in insulation to minimize heat losses.

2.8.4 Marketing

An important factor in marketing, and one which merits attention, relates to packaging and quality control of products. Traditional packaging technologies that have been adopted by women include baskets, gourds and gunny bags. However, these have proved inadequate (Marilyn Carr & Ruby Sandbur, 1987).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the research methodology and procedures adopted in the study. The specific issues discussed here include the description of the study area, research design used and why it was chosen, identification of target population, sampling procedure, data collection instruments, reliability and validity of the instruments, data collection procedures and data analysis.

3.2 Area of study

The research was conducted in Songea Rural District in Ruvuma Region, Tanzania. Ruvuma Region is one of the 26 regions of the United Republic of Tanzania.

3.2.1 Location and size

Songea Rural is one of the Districts of Ruvuma Region of Tanzania and it is located between Latitudes 10° 27' 45" South and Longitudes 35° 50' 12" East. It lies at an average of between 900m and 1,500m above sea level. It is bordered to the North by the Morogoro Region, to the East by Namtumbo District, to the South by the Songea Urban District, to the West by the Mbinga District and to the Northwest by the Iringa Region. The District has a total area of 36,303Km² and a land area of 36,296Km², constituting more than 99.98 percent of the total District area.

3.2.2 Soils

In most parts of Songea District brown loams, black clay and brown sandy soils are found. Ferrasols soil is found in some parts of the District, which has a high content of iron and Aluminium oxides (Al₂O₃) but lacks nitrogen (N) and potassium (K) and offers poor fertility. The average pH of the soil in Songea is reported at 4.8.

3.2.3 Hydrology

A large amount of water drainage system flows through streams and swamps to rivers and lake (Lake Nyasa) every year. There are few hydrological systems in the District

such as River Ruvuma. These are fed by huge amounts of rain water during the rainy seasons annually.

Table 3.1: Mean Rainfall, Rain days, Temperature and Humidity for Songea

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Rainfall (mm)													
	240.5	185.4	210.2	96.7	11.1	0.6	2.6	0.3	0.7	6.2	58.5	177.1	989.9
Rain days (number)													
	19	17	22	12	3	0	1	0	0	1	5	14	94
Max temperature (Degrees centigrade)													
	27.4	27.4	27	26.2	25.2	23.9	23.4	24.8	27.1	29.1	29.3	29.1	319.9
Min temperature (Degree centigrade)													
	18.2	18.2	17.8	17.1	14.2	11.3	11.1	12.3	14.3	16.5	18.1	18.1	187.2
Relative humidity at 9:00 a.m (%)													
	86	87	88	87	83	78	76	71	68	66	70	81	941
Relative humidity at 3:00 p.m (%)													
	63	63	66	63	55	49	48	44	39	37	44	58	629

Source: Meteorological Department (TMA), 2009

3.2.4 Climate

The District has a reliable rainfall of about 1,200mm per year. Rainfall is concentrated during the period November to May. The dry season occurs between June and October. The average day time temperature is 20 -25°C and the night time temperature is 11 - 17°C.

3.2.5 Demographic characteristics

According to the 2002 Tanzania National Census, the population of the Songea Rural District was 156,930. This comprised of 76,898 males and 80,032 females, as compared to a population of 153,476 in 1992. Of the population 55% is urban while 45% is rural according to the 2002 Tanzania National Census (NBS, 2002).

The District has a total of 33,389 households with an average household size of 4.7 persons. It has a diversity of ethnic groups. These include the Ngoni, Matengo, Yao, Bena, Pangwa, and Chagga. However, most of the tribes practice Ngoni cultures.

3.2.6 Administrative structure

The Head of the District is the District Commissioner (appointed by the President) and is part of the local government. There are 14 wards and more than 65 villages in the district.

3.3 SOCIO-ECONOMIC ACTIVITIES

3.3.1 Agriculture

Major cash crops are maize, tobacco, and sunflower. Major food crops are maize, rice, beans, groundnuts and cassava. Agriculture is dominated by small holders with an average of 7 acres (2.8ha).

The prevailing farming system is traditional shifting cultivation. Maize is usually cultivated under mono-cropping cultivation and sometimes intercropped with sunflower, beans and cassava. Due to the unavailability of fertilizers combined with increased prices of fertilizers, more and more farmers are obliged to cultivate farms far away from their homesteads. The walking distance between home and field is as much as seven miles.

Cultivation is done by the use of simple tools such as hand hoe. Crop residues are often burnt and seldom returned to the soil. Animal manure is not commonly applied. Some attempts were made to introduce a nitrogen fixing crop and rotating cultivation, but they are still in the experimental stage.

Household labour is mobilized for agricultural activities. The system of mutual help, “Ushirika”, is used during the peak period of planting, weeding and harvesting. Demand for agricultural labour is the highest from November to May.

Livestock keeping is also done by the local people for both domestic consumption and for sale, these livestock include poultry such as chicken, pigeon and ducks; cattle, pigs, goat and sheep, but the small scale livestock production is dominant.

3.3.2 Transportation

The people of Songea district carry out transportation as one of the socio-economic activities, bicycles, motorcycles and vehicles are used to transport people and goods from one area particularly areas of production to areas of consumption, markets.

3.3.3 Aquaculture

T. melonopleura and *T. ruvumae* species were introduced in the district, because of their rapid reproduction cycle; ponds tend to get quickly over populated. Consequently, fish attain their maturity stage quickly and get stunted. Fast growing *O.niloticus* was introduced recently.

Most fish farming units are family owned. Household members are engaged in all aspects of pond operation: cleaning of ponds, feeding, fertilizing and harvesting. A daily checking of water, though recommended by fisheries officers, is not practiced and fertilizer is seldom applied. Calcium carbonate (CaCO_3) is recommended to ponds with acidic soil. Other socio-economic activities include small scale business/trade, local brewing, charcoal production, all these activities contributes to per capita income of the local people to sustain their lives.

3.4 Research design

This research used survey design. Such study is normally intended to describe and report the way things are. It is characterized by systematic collection of data from members of a given population through questionnaires and interviews. It also follows procedures such as identifying the target population, developing questionnaires and field tests, selection of a relevant sample, administration of questionnaires in person, descriptive analysis of data using tables, mean frequencies and percentages. This is done to easy the understanding of the implication of households' food security for sustainable development.

Survey design was used since it involves the collection and analysis of data from members of a sample, in this case community members, government officials and NGO workers in Maposeni ward. The researcher used both questionnaire and interview to collect data from the target population.

The choice of the research designs as opposed to other research designs were motivated by the fact that the methods provide for suitable instrument for data collection in relatively short time. This enabled insights into the situation within a short time without incurring heavy expenses and lengthy preparations. The research design also provides a framework for data collection from a sample of government offices and development partners, making it a suitable means of obtaining information that reflects the situation as it is on the ground.

3.5 Target Population

According to Barton (2001), any scientific research targets a given population through which varied data collection instruments are used to collect data for analysis. This study targeted a population consisting of community members especially women, government officials and NGOs/CBOs staffs in Maposeni ward. This population was targeted since it was expected to provide crucial information on the role of women in promoting household food security. They also bear relevant experience in the provision of the services which include education, water, health care, and developmental infrastructures.

3.6 Sample and Sampling technique

The study population of the four villages of Litowa, Maposeni, Parangu and Peramiho which is the working group between the age of 20 – 64 is 8,113 (NBS, 2002). Participants in the study were drawn from a sample of 240 households (respondents) (n = 240) who are community members/women. Individual government officers interviewed were 50 (n = 50) and the number from NGOs/CBOs was 10 (n = 10). In total there were three hundred (N = 300).

Table 3.2: Summary of the Sample Size of Respondents

Participants	Estimated population	Target sample size	Sample size (Respondents)
Community members	2000	240	180
Government officials	60	50	10 X 4
NGOs/CBOs	10	10	10 X 2
Total	2070	300	240

Source: Primary data.

3.6.1 Sample of the community members

The sample must be as representative as possible of the population from which it is drawn. This study considered 240 households who have benefited in one way or another from programs run by the NGOs/CBOs and government agencies. Out of 240 community families, a representative sample size of 240 was considered ($n = 240$). From this sample, 180 representative families responded to the questionnaire ($n = 180$) (Table 3.2). Systematic random sampling procedure, which is considered to have less bias and of reasonable time convenience, was used to select representative of the community families.

3.6.2 Sample of the Government Officers

Purposive sampling procedure was used to select ten (10) offices from 50 government agencies. Out of these 10 agencies, 4 participants were drawn from each, making a total of forty (10×4) individuals ($n = 40$) (Table 3.2). This method was used since only these agencies were deemed to have crucial information essential to answering the research objectives.

3.6.3 Sample of the Development Partners (NGOs/CBOs)

Purposive sampling procedure was used to select ten (10) offices from 10 NGOs/CBOs. Of these ten (10) NGOs/CBOs, 2 participants were drawn from each, giving a total of 20 ($n = 20$) (Table 3.2). This method was used since only these agencies were deemed to be running programs that impact on household food security and that the information they have might be appropriate in answering the research questions for this study.

3.7 Data Collection Instrument and its Validity

In this study, the researcher used questionnaires to collect data from the community members and interview guide to collect primary data from government officials and NGOs/CBOs staffs in the area of study.

The questionnaires were used (Appendix A) since they are straightforward and less time consuming for the respondents. They were also used because they reach a large number of people within a short time (Ogula, 1998). The questionnaires consisted of a few

closed-ended questions and numerous open-ended questions meant to solicit relevant information to answer the major research questions.

Interview method of data collection was used because it was able to provide in-depth data which is not possible to get using a questionnaire and also to make it possible to obtain data required to meet specific objectives of the study (Appendix B).

Closed ended question and open-ended questions were used. Closed ended questions were easier to analyze since they were in an immediate usable form, they were easier to administer because each item is followed by alternative answers and were economical to use in terms of time and money. Open-ended questions were used because they permit a greater depth response, were simpler to be formulated mainly because the researcher did not have to labor to come up with appropriate response categories, also they were meant to give an insight into his feelings, background, hidden motivation, interests and they were able to stimulate a person to think about his/her feelings or motives and to express what he/she considers to be most important.

According to Ogula (1998), validity in research refers to the extent to which a research instrument measures what it is designed to measure. There are content (face sampling validity), construct and predictive validity. The validity of the research instruments in this study was determined by adopting subjective assessment of the content of each research item (face validity).

3.8 Data collection and analysis

After obtaining permission from the University supervisor and necessary documents to facilitate data collection, the researcher proceeded to the field (Maposeni ward, Songea rural District, Tanzania). The senior administrative personnel from the selected government office and the NGO/CBO were contacted to explain the purpose of the study, obtain their consent and request for their permission and assistance where necessary. For the community members, any representative community members were randomly approached and informed about the purpose of the study.

Before responding to questionnaires, the participants were given instructions where necessary. Their confidence was obtained by assuring them that their identity would be not be revealed. Each respondent had the discretion to respond to the questionnaire items independently to minimize the tendency of information bias. The respondents were given ample time to fill in the questionnaire to reduce the problem related to impulsive responses. Completed questionnaires were collected immediately. Where this was not possible, arrangements were made to pick them later.

The data collected was organized and prepared for analysis by coding and entering them into the Statistical Package for Social Sciences (SPSS, Ver.11.5). The study used descriptive statistics such as frequencies and percentages. The outcomes of the quantitative data from the coded close-ended items were analyzed using descriptive statistics. Further, the data was interpreted and discussed in relation to the research questions. On the other hand, the qualitative data generated from open-ended questions was converted into quantitative data and where necessary, presented in a narrative form.

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

4.0 INTRODUCTION

This chapter presents data analysis and presentation of the findings on women and household food security in Songea Rural District, Tanzania. The data was analyzed using a Computer programme, SPSS Version 11.5. This enabled the presentation of data in frequencies, percentages, tables and charts.

The chapter is organized along the major research questions except for the first section that deals with the demographic information of the respondents. Other sections are organized as follows; section two, the activities done by women to promote household food security. Section three the technologies adopted by women. Section four concentrates on the impacts of technologies adopted on food availability and section five concentrates on the constraints that women face in relation to food security.

4.1 Background information

The study considered demographic characteristics of three groups; government officials, community members who were women, and development partners (NGOs/CBOs).

4.1.1 Government Officials

The demographic characteristics of the government officials that were considered include gender, designation and working experience. Table 4.1 below shows the summary of background information of the officials.

Table 4.1: Background information of Government officials

Gender	Frequency	Percent
Male	28	70
Female	12	30

Source: Primary data

An overwhelming majority of the government officials (70%) were males, and only 30% were females. These were different designation; Ward Executive Officer, Village Executive Officers, Environmental officer, Secretary, Development Officers, Security officers and Technical team members. Slightly more than half of them (55%) had working experience of more than five years. Others (45%) had worked for less than five years.

4.1.2 Community members

The background information of community member considered includes gender, age, marital status, household head type and occupation.

Table 4.2: Background information of the Community members

Background Information (Gender, Marital status, household head type)		
Gender	Frequency	Percentage
Male	0	0
Female	180	100
Marital status		
Married	80	44
Not married	100	56
Household head type		
Male headed household	90	50
Female headed household	82	46
Both male & female headed household	8	4

Source: Primary data

Majority of those who participated in the study among the community members, women were 180 (100%), and 44% were married. Respondents indicated that half (50%) of the households are headed by male and 46% of the households are headed by women whereby 4% of household are both males and females are heads of household. This may not have any implications since the sample was selected randomly.

4.1.3 Development Partners

A number of NGOs/CBOs were considered in the study. These included Mruma centre, PEDIPA, UWT, PAFABECA, Benedictine Father's, RUDA, and PEHOLE and Doctor's Club. All these organization had a presence in Songea Rural District. Most of them are local organizations.

4.1.4 Programme run by Government and Development Partners

Government officials and representatives from NGOs were asked to indicate the programme that they run. The table below shows their responses.

Table 4.3: Responses from government officials and NGOs/CBOs

Programme	Government run programme		NGO-run programme	
	Frequency	Percentage	Frequency	Percent
Food security	1	2.5	6	30
Water and sanitation	0	0.0	4	20
Education	21	52.5	1	5
Health/Hygiene	12	30.0	8	40
Agriculture training	5	12.5	0	0
Others	1	2.5	1	5
Total	40	100.0	20	100

Source: Primary data.

Table 4.3 above shows that the government runs more education programmes than any other programmes. The least among were water and sanitation. The main programme that development partners run was health/hygiene at 40%, while the least among their programmes is agriculture training at zero percent.

Objective 1: The activities the women are engaged in towards the promotion of household food security

4.2 ACTIVITIES OF WOMEN THAT PROMOTE HOUSEHOLD FOOD SECURITY

In Songea Rural District and Tanzania in general, women play a greater role in ensuring that the family is fed. By and large much of agricultural production is small-scale and women are more involved in agricultural activities than men.

Table 4.4: The agricultural activities done by women in Songea Rural district

Responses	YES	NO	Total
Activity (s)	Percent	Percent	Percent
Crop production	91	9	100
Processing and preserving of agricultural produce	97	3	100
Animal rearing	66	34	100

Source: Primary data

The study findings confirmed that women carry out various activities to promote household food security; these activities were crop production (91%); processing and preserving of food products (97%); and animal rearing (66%). The crops grown in the area of study were maize, beans, sorghum, rice, soyabeans, wheat, bananas, sweet potatoes, groundnuts among others. The animals kept by the farmers are poultry particularly chicken, ducks and pigeon; cattle; pigs; and sheep as well as goats.

Women in Songea Rural District also carry out non-farm activities such as collection of water and firewood for both domestic use and for sale; small-scale business; pottery and handcrafts, they use the income generated from non-farm activities to reinvest in agricultural activities and they use part of it to continue to sustain household food security. They also collect forest and wild food materials to supplement in their diets.

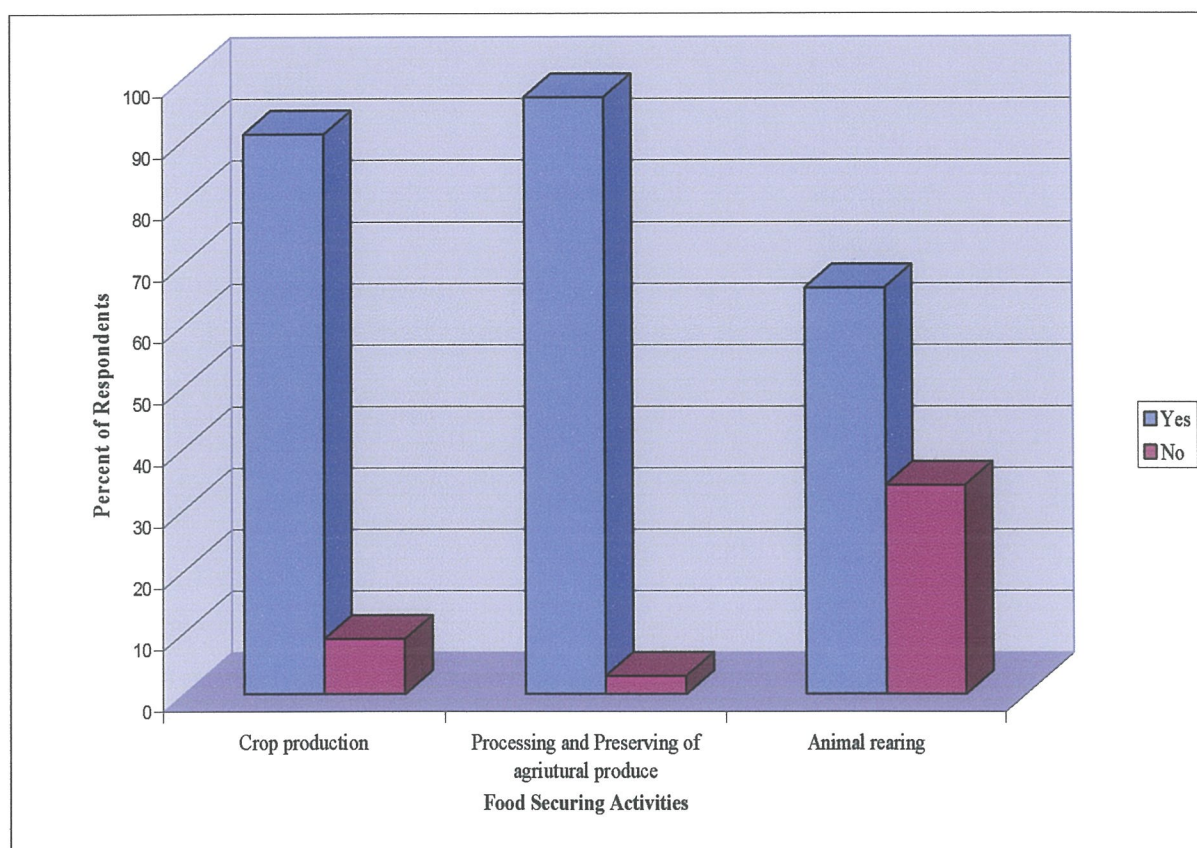


Figure 4.1: The Percentage of Respondents involved in Food Securing Activities

Table 4.5: Non-farm activities done by women in Songea Rural District

Activity	Frequency	Percentage
Collection of water and firewood	83	46
Collection of forest and wild food	58	32
Small-scale business	22	12
Pottery	10	6
Handcrafts	7	4
Total	180	100

Source: Primary data

4.2.1 The actual contribution of women' activities to household food security

This study confirmed that women play a crucial role in providing and improving household food security. Women are more likely than men to use available resources and skills to further improve the welfare of their family especially the nutrition and health

aspects; this has been highlighted by various researchers (Alredaisy, 1993; Jackson, 1996, p. 497; Coonrod, 1998; Smith and Haddad, 1999; Elmasoud, 2001).

Despite the additional demands on her time as housewife and mother, women in rural areas of Songea Rural District have successfully increased the diversification of their livelihood system. They attempt to do that through increasing the capacity of the productive resources family farm (91%) and domestic animals (66%), in addition to post-harvest activity (processing and preserving food products), and collecting of forest and wild food (32%).

According to Marilyn Carr and Ruby Sandhu (1988 p. 31), women work longer hours than men (71.6%) due to their multiple roles in food production, income activities and house chores, besides their role in collecting of water and firewood (46%) and this seems to be significant. Preparing food and baking bans/pancake/maandazi/breads and porridge (12%) absorb a number of hours daily. Particularly women usually use firewood and crop residues for cooking. If women's unpaid work was properly valued they would emerge in most societies as the major breadwinners given their greater contribution of working hours than men, the unvalued economic contribution of women is such that any reasonable calculation of their labor would lead to a fundamental change in the context in which today's social, economic and the political policies are framed (Leonard, 2003, p. 84).

Agricultural production and food consumption patterns have become more diversified over time, in eastern and southern Africa (Byerlee, et al. 2006 p. 278). It is indicated by this study and is plentifully obvious from numerous bodies of the study in Sub Saharan Africa (SSA) that women are primarily responsible for food production, food preparation, food storage, and food sale within the family (Hyder, et al. 2005, p. 333). In the study area, domestic animals provide household with the daily high nutrient protein items, such as meat, milk and eggs and thus enable the household to improve its diet nutritional quality. Confirmed by this study and indicated by some studies from most SSA countries

the important role of women in animal raising activities and processing of animal products (Nelson-Fyle and Senghor, 1997, p. 31).

Fermentation, drying, salting and preserving in sugar are the techniques used for processing and preserving of agricultural and animal food products by women in rural Songea (Table 4.7). These processing techniques help in preventing growth of the micro-organisms that cause foods to decay and foods can be kept at ambient temperatures for long periods and provide nutrients in times of food scarcity. So, locally available raw material is processed into food products at relatively low cost resulting in food with a higher nutritive value compared to the raw material, a better taste and a longer shelf-life (Van de Sande, 1997, p. 309). The processed food items such as, dried meat, traditional spicy yoghurt and ghee, constitute important high nutrient food items and can be consumed years after they made.

The forest tree and wild plant food products contribute to the diversity of household consumption and represent essential substitute foods during food shortage. Collecting of forest trees products including: *Ziziphus spina dris*, *Adansonia digitata*, *Tamarindus indica* and (*Grewia tenax* fruits) and the wild plant food products such as, (*Cassia obtusiflora*) and (*Sonchus spp.*) is exclusively women responsibility with help of their children. The nutritionist, interviewed during this study, indicated that there are nutrient-rich wild plant products which are processed and used as foods or as food condiments in Songea, some of these wild products are not used as foods in their unprocessed state because they contain toxic or anti-nutritional factors. On the basis of the literature review there is increasing evidence to suggest that the traditional rural communities are nutritionally successful, even during periods of drought, affirms the importance of recognizing and utilizing traditional wild food resources (Altieri, et al., 1987 cited in Flyman and Afolayan, 2006, p 493). In addition to their contribution to food diet, the respondents indicated that wild and forest food products represent an income source for women either raw or processed.

In conclusion, the research findings confirmed that women in the study areas, as well in rural Tanzania, through diversity of household food provision contribute to controlling

the nutritional wellbeing of their family and are more able to improve their household food security. For Mittal (2006, p. 18) a major challenge to household food security comes from the dietary diversification of food basket. Review of developing country studies confirms the positive associations between dietary diversity and nutrient adequacy (diets meet requirements of energy and all essential nutrients) (Ruel, 2002, p. 1). Dietary diversity has proven to be among the most common and valid indicators of nutrient adequacy and/or energy intake (Hoddinott and Yohannes, 2002, p. 36). On the basis of this research finding, Table 4.4 and 4.5 sum up the role playing by women in the study areas in different food securing activities.

4.4.2 The contribution of income activities to household food security

Income activities have a substantial positive effect on the improvement and the sustainability of the household food security. Women in Songea Rural District also derive some incomes from non-farm activities such as pottery (6%) and handcraft (4%) (Table 4.5). Most African smallholders derive some income from activities outside primary agriculture (non-farm activities), away from their own farms (off-farm activities), or both (Reardon, 1997; Ellis, 1998; Bryceson, 1996; Barrett and Reardon, 2000 and Ellis, 2000 cited in Barrett, et al. 2001a, p. 367). Since income generated from these activities enables household to purchase high nutrient non-staple food and to afford food during food shortage. The crucial role of the remittance from income generating activities to sustainable of household food security indicated by this research finding and supported by other researchers (Ali, 1997; Alderson 2001; Gordon and Craig, 2001, p. 8). Study by Ninno, et al. (2007, p. 20) linked food security at the household level to access food, which is closely linked to household incomes. Hassan and Babu (1991, p. 452) in their study of farming community in the Sudan found that better access to productive assets, increased non-farm and on-farm employment opportunities reduced the poverty and improved the household wellbeing.

Table 4.6: The income owners of the households in the study area

Income owner	Frequency	Percentage
Male	57	32
Female	53	29
Both male and female	70	39
Total	180	100.0

Source: Primary data

Income earning from income generating activities contributes to sustaining household food supplies and improved its wellbeing. The study findings indicated that there is a significant difference between men and women's expenditure patterns. Compared to men, women earn and own lower incomes (29%) (Table 4.6), but tend to allocate more of their earnings to buy food items for their household, while men often spend part of their budget on other purposes such as drinking and buying of new clothes. These findings are supported by many other studies such as studies by Quisumbing, et al. 1995; Bradshaw, 2004; Rao, 2006 that men and women tend to spend their income differently, women use almost all of their income to satisfy the food needs of the household, while men often use cash income for other purposes. Men usually hold back income for themselves and that, on average; they allocate only between 50% and 70% of their total income to the household (Bradshaw, 2004, p. 14). Women's involvement in income generating activities has greater significance than simply increasing their own or household income, Islam (1997) states it improves household welfare, child nutrition and education (cited in Gordon and Craig, 2001, p. 23). Jackson (1996, p. 497) pointed out that despite the diversity and complexity of the work on incomes within households, there is evidence that women spend much of their money on children and household needs than men.

Objective 2: To Examine Technologies Adopted by Women on Food Security

The people of Songea Rural District were using traditional technologies to produce agricultural products both crops and livestock. Both women and men and even children were engaging themselves in agricultural activities. The Traditional technologies which were used in performing the various agricultural tasks were labour intensive, physically strenuous, inefficient, and time consuming, this in turn decreased agricultural production over time. Due to these women in Songea Rural District adopted a number of technologies to increase production. However, these technologies were both traditional and improved technologies. This was because to enable women who are the main producers of food to promote household food security – that is, to produce enough to sustain households and even national needs and ensure that it reaches the consumers – application of appropriate technology was vital.

4.3 Technologies on Food Processing and Preservation in Songea Rural District

Women play a great role in these important post harvest activities; however, at present post harvest losses are still high. In Songea Rural District, technologies involved in handling these activities are largely traditional. However, improved technologies are adopted and used by the people particularly women to promote household food security. These are discussed on the basis of the type of food processed and/or preserved.

The study findings confirmed that improved technologies were highly adopted particularly for cereal crops and fruits. However, in some areas traditional technologies adopted from forefathers were still in use. This is because some of the improved technologies introduced were expensive and in some areas were not readily available thus, slow adoption. The table below summarizes the technologies (both traditional and improved technologies) adopted by women in Songea Rural District, Tanzania.

Table 4.7: Technologies Adopted by Women on Food Processing and Preservation in Songea Rural District

Technology (s)	% Adoption rate n = 180		Frequency Distribution		Remarks
	High	Low	High	Low	
FOOD PROCESSING AND PRESERVATION					
Grains					High adoption
a. Shelling	57	43	102	78	
b. Winnowing	68	32	122	58	
c. Storage	47	53	84	96	Improved food quality
d. Dehulling/Dehusking	64	36	116	64	
e. Grain milling	80	20	144	36	
Vegetables					Slow adoption
a. Sundrying	2	98	4	176	
b. Sundrying after boiling	3	97	5	175	
c. Sundrying after pounding	8	92	14	166	Poor food quality
d. Sundrying after boiling and pounding	4	96	7	173	
Fruits					High adoption
a. Pickling	78	22	140	40	
b. Sundrying	16	84	29	151	
c. Dehydration	24	76	43	137	Improved food quality
d. Fermentation	32	68	58	122	
e. Juice extraction	85	15	153	27	
Root crops					Slow adoption
a. Peeling	24	76	43	137	
b. Slicing	8	92	14	166	
c. Soaking	13	87	23	157	Poor food quality
Fish					Slow adoption
a. Salting	11	89	20	160	
b. Sundrying		10	162	18	
c. Smoking	82	18	148	32	Poor food quality
d. Frying	39	61	70	110	

Source: Primary data

4.3.1 Grains

Types of grain commonly grown in the area of study are maize, rice, sorghum, and wheat. All these require similar processing techniques.

4.3.1.1 Threshing/Shelling

This technology was adopted by women as it was indicated by 57% of the respondents who were sampled. Threshing/shelling involves separating the kernel from the cob/stalk. Traditionally this was achieved by using sticks to beat the harvested crops, either spread on the floor or packed into sacks.

Sokoine University of Agriculture (SUA) developed threshers for sorghum and rice and shellers for maize. These machines could shell/thresh in a shorter time and effectively. Hand driven have an average capacity of 3000 Kilogrammes per day. Manual maize shellers have a capacity of 500 kilogrammes per hour, while the powered ones have a capacity of 750 kilogrammes per hour. Smaller hands shellers are being developed, introduced, adopted and used although are not as efficient as indicated by 43% of the respondents.

4.3.1.2 Winnowing

The process of separating the good grain from empty grains, stalk remnants, husks and other impurities is called *winnowing*. Traditionally it was done by placing some of the grain on a flat or curved split bamboo tray and then, holding this high above the head, tossing the grain up in the wind. This technology is still in use as indicated by 32% of the respondents. The process may have to be repeated severally before the grain is clean. Improved winnowers which are both electrically and diesel operated have been developed locally and most women have adopted such winnowers. In these winnowers a fan has been incorporated to guarantee enough blowing. This was indicated by 68% of the respondents.

4.3.1.3 Storage

There were many traditional ways of preserving and storing grains such as maize, rice, sorghum and wheat (Figure 4.1). Despite the many names used in the District, storage structures could have broadly been divided into two types: open types or cribs that were

largely found in the more humid climates, and the closed types or silos found in hot dry areas. The traditional technologies are still in use as it was indicated by 53% of the respondents and only 43% of the respondents have adopted improved technologies particularly air-tight containers/tanks, this was because women failed to access due to low purchasing power.

Small quantities of grain, mainly seeds for the next season, were stored in clay pots, gourds, openwork baskets and used tins, and kept in the house. Many of these traditional stores need minor improvements such as raising them off the ground and fitting rat guards or baffles as well as use of pesticides. Small scale industries have also developed an air-tight improved storage tanks, but women's accessibility to the technologies is poor owing to high prices.

4.3.1.4 Dehulling/Dehusking

This is the process of removing the husk or outer coat of the grain. Traditionally it was done by pestle and mortar. SIDO and other small scale industries manufacture electrically and diesel operated dehuskers for rice and dehullers for maize and sorghum. A sorghum dehuller consists of a dehuller and a hammer mill for grinding the grains into flour. The dehullers are owned by the villagers and are purchased through loans from local banks such as CRDB, NBC, and NMB and from SIDO. This technology has been adopted by women as it was affirmed by 64% of the respondents who were sampled.

4.3.1.5 Grain milling

Pounding grain into flour was traditionally done by women using pestle and mortar. The process also includes sieving out the flour and repounding the grits. Electric and Diesel-powered milling machines were manufactured by SIDO also some were imported from outside of the country. Milling machines are still very thinly spread and are largely owned by individual, villages and other institutions such as 'Umoja wa Wanawake Tanzania' (UWT) under 'Chama Cha Mapinduzi' (CCM). Long queues are therefore still typical, even in urban areas; this indicates that the adoption rate is higher and the study findings confirmed that 80% of the population uses as it was attested by respondents.

SIDO has also developed a hand operated grinding mill, but despite being cheap it has not attracted many women because it is laborious.

4.3.2 Fruits and vegetables

Songea Rural Districts has abundant supply of fruits and vegetables suitable both for home consumption and export. The vegetables include cabbages, cassava leaves, cowpea leaves, okra, pumpkin leaves, spinach (*Amaranthus spp*), and many wild varieties. The fruits include bananas, mangoes, oranges, guavas, and tomatoes.

4.3.2.1 Vegetables

Most women have adopted traditional technologies in preservation and processing of vegetables. The traditional methods used to process and preserve vegetables in the area of study include:

- i. Direct sun drying, for example spinach, sweet potatoes, and mushrooms.
- ii. Sundrying after boiling, for example cowpea leaves.
- iii. Sundrying after pounding, for example pumpkin leaves.
- iv. Sundrying after pounding and boiling, for example cassava leaves.

Some of the vegetables preserved traditionally lose their nutritional quality, flavor, and taste. This could be changed if drying procedures result in a product which has not undergone drastic changes. To achieve this, improvements were needed to the boiling and sun drying techniques. Research has been undertaken at Sokoine University of Agriculture (SUA) on solar driers for vegetables and grains, but adoption of this technology has lagged behind due to lack of funds.

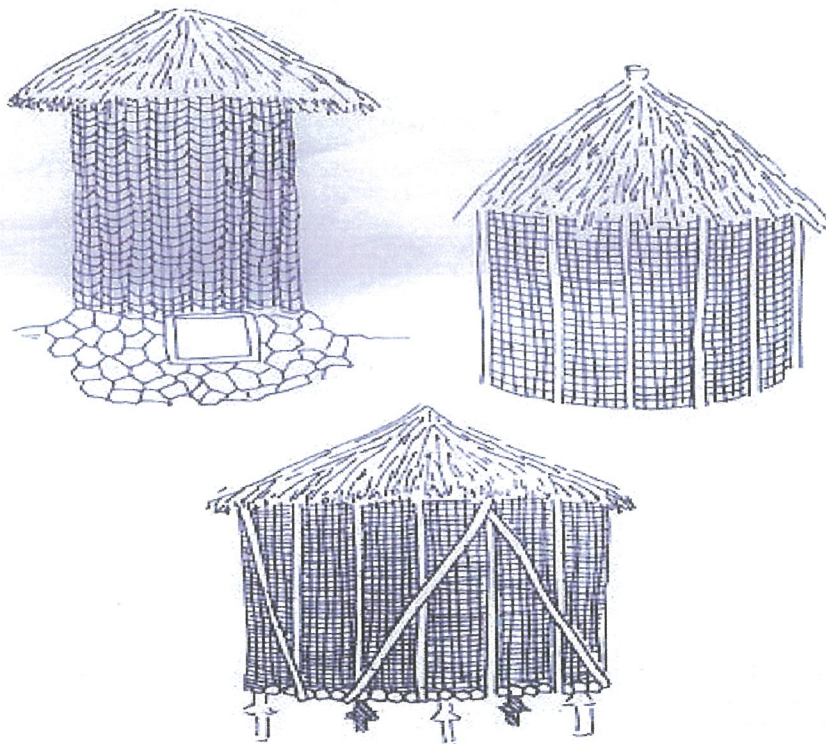


Figure 4.2: Traditional means of preserving and storing grains

4.3.2.2 Fruits

By and large, fruits were consumed while they were still fresh, although to a limited extent some types were traditionally preserved by sun drying (16%) for example bananas, and pickling (78%) like Mangoes.

Improved techniques for processing and preservation of fruits include dehydration, fermentation, juice extraction, jam-making, and confectionary. However, the major technologies which were adopted by women include dehydration, fermentation, and juice extraction. This was indicated by respondents at 24%, 32% and 85% respectively.

4.3.3 Root crops

Root crops particularly cassava, Irish potatoes, sweet potatoes and yams are important staple food in the District. These crops are drought resistant, and with the adverse weather conditions being experienced in many regions of the country, these crops hold a lot of hope in terms of food security.

Traditionally the problem of storing cassava has been overcome by leaving the roots in the ground until needed. This practice has a disadvantage in that it occupies the land; also the roots become fibrous and woody, and nutrients content declines. Another traditional method of processing cassava involves peeling (76%), slicing (92%), and sometimes soaking (87%) it in water over night before it is sun dried and stored. For short periods of time, 3-4 days, cassava can be preserved by burying it in the ground. In the case of sweet potatoes the tubers are peeled, sliced, and boiled before they are sun dried. In some villages of the District, sweet potatoes are stored in pits with alternate layers of wood ash. In general, there are no improved processing and preservation techniques for root crops. Therefore, since there are no adequate techniques for preservation at source, the need to transport root crops to places where they can be processed and preserved is enormous.

4.3.4 Fish

Traditionally, fish processing, such as cleaning, gutting, and drying, is done manually. Preservation of fish is usually done by salting (89%) and sun drying (10%), smoking (18%), and frying (61%). These methods, however, have disadvantages:

- (i) They are not very hygienic

- (ii) They consume a lot of fuel wood, and
- (iii) They require constant attention to safeguard against animals and birds.

The improved techniques adopted by women are:

(a) Improved sun drying

This improved technology was adopted by women (90%). This is achieved by using racks or concrete floors instead of spreading the fish on the ground.

(b) Improved smoking methods

The use and adoption of this method was attested by 82% of respondents. A smoker which uses an enclosed fire box (Figure 4.2) is better than an open fire. The smoker is cheap in that it can be made using locally available materials and the study confirmed that it is efficient in terms of fuel consumption.

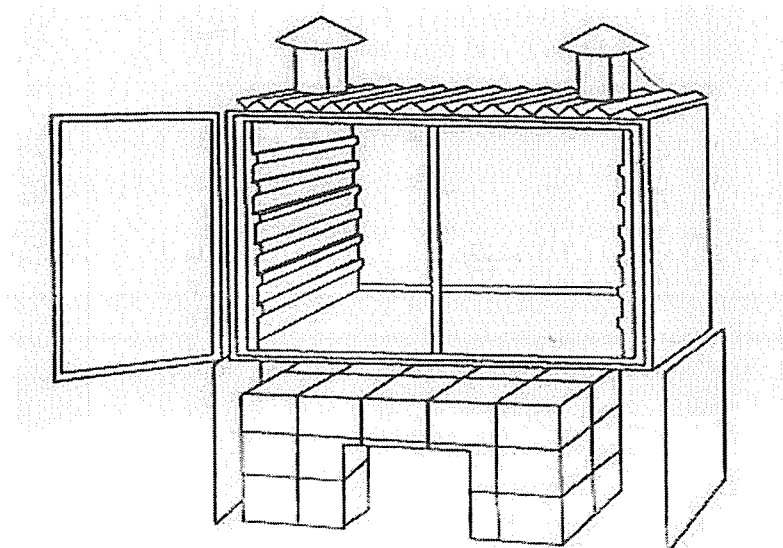


Figure 4.3: Enclosed fire box

4.3.5 Oil seeds

Oil seeds grown in Songea Rural District are Groundnuts, Soyabeans, Sunflower and Simsim. These seeds have high oil content and local women have been making oil from these seeds using pestle and mortar, stones, and graters. These processes are slow and inefficient machines for oil extraction, oil expellers and oil pressers, are being locally

manufactured. However, one respondent said that *“expellers are extremely expensive, and pressers, although relatively cheap, are difficult for the women to operate owing to their mechanical construction”*.

The study findings confirmed that in accomplishing all the above activities women are faced with two inter-related basic problems: they use inferior and strenuous technologies and consequently time and energy spent on the activities is not commensurate with the output. Lack of improved crop processing and adequate storage facilities, for instance, cause enormous losses of the harvested crops despite the hard work and other effort women expend. This has been highlighted by some studies (FAO 1986) that estimated post-harvest losses at about 30% of the total harvest crop.

In order to guarantee sustained food security it is important that the continuity of technologies involved in performing various activities of the food processing and preservation is maintained. It is of absolute necessity that technologies used can be operated and maintained by the users and above all that they are affordable.

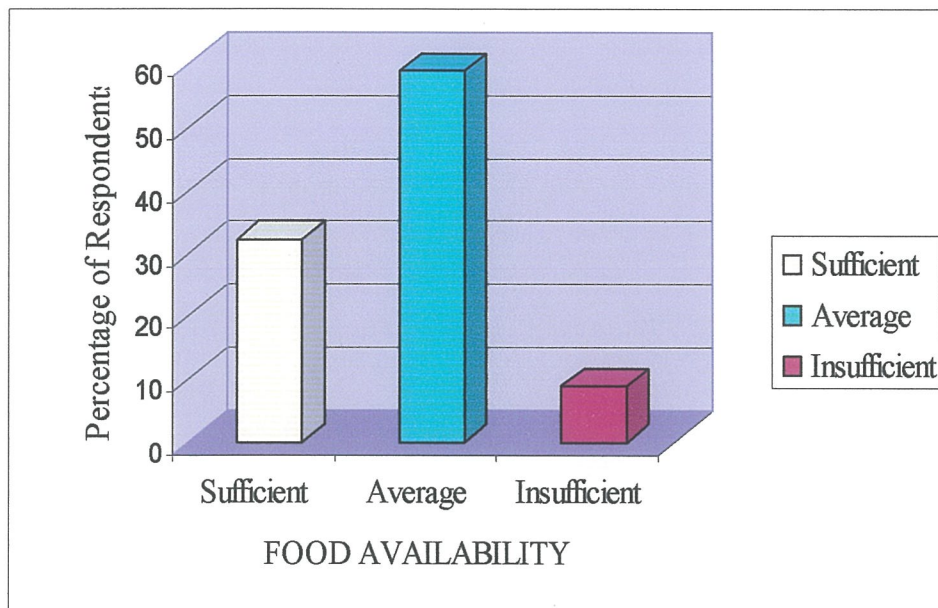


Figure 4.4: Food availability for household consumption (Source: Primary data)

In conclusion, the research findings confirmed that women in Songea Rural District as well as in rural Tanzania, through improved technology increase food production to improve the nutritional well-being of their families and are more able to improve their household food security. However, the major challenge to household food security comes from the ability to acquire the technology, this is because some of the technologies are very expensive to procure thus they become readily unavailable to women who are mostly poor.

Objective 4: The findings on the Challenges that Women Face in promoting household food security in Songea Rural District

4.5 CONSTRAINTS THAT WOMEN FACE IN PROMOTING FOOD SECURITY

Despite their important roles as producers and household managers, women are often marginalized when it comes to resource allocation and decision making. They lack direct access to resources such as land, other capital and credit, and information which in the end reduces their productivity. Women also have limited access to markets for inputs, production and sales. They also lack the opportunities to learn new skills and to acquire affordable technology. All these constraints interfere with their critical role in improving household food security.

Respondents were asked to comment on the constraints that women do face while promoting household food security in the area of study and the table below presents the data obtained.

Table 4.9: respondents comment on the factors that affect women' role in promoting household food security.

Constraint (s)	Frequency (f)	Percentage (%)
Land and property ownership	86	48
Access to credit and marketing facilities	54	30
Access to information	40	22
Total	180	100

Source: Primary data

4.5.1 Land and Property Ownership

Nearly half of the respondents (48%) indicated that land and property ownership is the major constraint that women are facing in promoting household food security in Songea rural district.

Generally, men as heads of households have the right to the land and control the farming. Most women only have user rights to the land they work on. Their access to land is

mostly through their husbands, sons or male relatives. This is because land is often passed along the patrilineal line.

The Tanzanian national land Law advocates that all adults have the same rights regarding access to land. The land is allocated through village committees for land use planning. In practice, however, land ownership is ascribed to heads of households, either male or female. Married women do not own land in their own right. However, they can use the land owned by their husbands. Some respondents who were women said *“they ask for land for the cultivation of certain crops primarily meant for home consumption from their husbands”*.

In Songea Rural District, female heads on the contrary have land in their own rights, the land either bought (for divorced women) or obtained through inheritance (for widow) or allocated by the village government. The portion of land owned by female heads is, however, often very small, and opportunities for them to increase their acreage is always blocked by the male-dominated village governments.

These findings are also supported by the study in Shinyanga by Aarnink and Kingma (1991), the study indicated that majority of the female heads of households owned less than 5 acres of land while most male heads owned between 16 and 25 acres. Renting or lending from other people was only way of obtaining additional land owned by women. The access to land for the female heads however, has access to sufficient land to meet their needs. Thus generally, modern land legislation has not promoted women's ownership and inheritance of land.

Because of their different obligations, husbands and wives do not always have the same interest in land allocation for crops. The best land is normally used to produce cash crops leaving only the poor land to women for subsistence food crops. To make matters worse, women in most cases are not allowed to make any changes to land use without their husband's permission. To some extent, this acts as a disincentive for increased crop production.

Apart from land ownership, women also tend to own the least property and goods in the household.

4.5.2 Women's Access to Credit and Marketing Facilities

Women need credit to purchase agricultural production assets as well as working capital. They also need to expand their economic activities so as to earn more money to support their families. However, majority of rural women know little about where to obtain formal credit. Where credit is available, access often requires collateral in the form of assets or reputation. Normally banks insist on some sort of security, usually landed property. Unfortunately, majority of the women farmers control far fewer marketable assets and they do not have landed property, and as subordinate in the household, they can not establish reputations for credit-worthiness. As a result, they tend to have markedly worse access to credit. Banks generally regard women as poor credit risks because only a few own assets.

The explanation above is supported by the study findings which affirmed that 30% of respondents commented that women's access to credit and marketing facilities is inadequate (Table 4.10).

Studies conducted in Tanzania indicated that public credit programme depends on physical collateral and so are heavily biased toward male heads of households. Women have received very little credit from the banks, a situation which has had a negative impact on women's productivity. Commercial and development banks have provided loans to sectors where the majority of women are not involved. For example, provision of credit and technological services has been biased to non-food cash crops which are dominantly controlled by men (Virji and Meghji, 1989). This has meant denial of such services to women.

Efforts have been made by Cooperative and Rural Development bank (CRDB) in conjunction with International organization to work out special credit facilities to women on concessionary lending terms to enable them establish small scale income generating project. In implementing the credit programmes, however, the bank has encountered

problems such as lack of property ownership by women, lack of guarantees to women, economic units by village leaders, entrepreneurship on the part of women and others. In any case, only few rural women have benefited from the bank's credit programmes.

As a result of limited access to formal credit, women have often depended on the informal savings clubs such as "Upatu" in urban areas, which they have initiated on their own. If women farmers were to receive the same kind of assistance and incentives as men, their agricultural productivity would increase.

Marketing facilities available in the rural areas are functioning in a rudimentary manner. Cooperatives are the main official marketing agents in Tanzania. However, their performance has been very poor, consequently ill-serving the rural people. Women farmers have often depended on local markets to sell their surplus food.

4.5.3 Women's Access to Information

The study findings indicated that woman's access to information is poor by 40 respondents (22%).

Studies conducted on the importance of information highlighted that the access to information is one of the most powerful tools in development. However, women often encountered discrimination outside the household which limits their access to resources and information (Gittinger, et al., 1991). Women farmers in Songea rural district, generally lack information on, for example, where to obtain formal credit, agricultural technology and the like. The restriction on the access to information by women is brought by the fact that the information channels are male dominated and in some areas not well developed.

In agriculture, information about new agricultural techniques is spread through public extension services and private imitation. However, for quite a long time, agricultural extension services have been geared towards male farmers both in terms of message and mode of delivery (Collier, 1989). Although agricultural extension services in many African countries still design their programmes as if all farmers were men, there has been

growing realization that women have become major users of extension services in some countries as more men seek off-farm employment. In Kenya for example, more than 60% of the contact farmers reached by the extension services now are women (Gittinger et al., 1991).

At household level, differences may exist depending on intra-households characteristics and the nature of decisions to be made. Studies have shown that decisions about domestic work are made by wives while decisions about off-farm income are made by men. Married women have certain decision making power only when it comes to earning their own money (Aarnink and Kingma, 1991). Such divisions in decision making limit the women's access to money and their control over expenditure of that money in family headed households, the women make all the decisions.

Although decision making powers are often shared between male heads and their wives, husbands have more power especially when it comes to allocation of land to crops. Decisions about allocation of household member's labour may be shared between husband and wife. Wives can influence decision making by discussing, suggesting and by carrying out the work. Some women however, have a larger share in decision making. This is so when a woman has possessions of her own property including land, cattle or house. Property ownership increases the decision making powers of women.

Food security in Songea Rural District and Tanzania in general will only be realized if constraints facing women farmers are removed. This would include improving their decision-making authority both at households, village and national levels.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents conclusion and recommendations based on the findings on the role of women in promoting household food security in Songea Rural District, Tanzania.

5.1 Conclusion

The study findings confirmed that women derive some income from non-farm activities, away from their own farms or both. Income activities have a substantial positive effect on the improvement and the sustainability of the household food security. The income generated from those activities enable household to purchase high nutrient non-staple food and to afford during food shortages. Therefore, from the first objective of the study, the study findings confirmed that women in the area of study through diversity of household food provision contribute to controlling the nutritional well being of their families and are able to improve household food security.

The technologies adopted by women in the study area have improved the role of women in promoting household food security in Songea rural district and the food available was sufficient. The findings have also confirmed that the women' rate of adoption of technologies was high for some technologies while some was low because of the expenses and hence they have enabled women to improve on their roles not only as housewives and mothers but as household heads and managers.

The major challenges that women face in Songea rural district were land and property ownership, access to credit and marketing facilities and access to information. The study confirmed that these constraints are challenging due to various factors. These factors include social factors particularly the rights on properties where men have more power on the allocation of land to crop, inadequate legislation policies and lack of decision making power. Economical factors, women do not have landed properties that can guarantee them security. Other factors include male domination on information channels and

extension services were geared towards male farmers both in terms of message and mode of delivery.

In general, the study findings confirmed that it is evident that agriculture in Songea rural district will continue to be dominated by small-scale holder rainfed agriculture which is highly susceptible to variation in rainfall. The climatic factors will play a major role in determining food security in the area. Social economic factors are also crucial in determining accessibility to various food stuffs, energy and water for domestic consumption. All these factors coupled with plant pests and diseases due to climate change will continue to be constraints to any food security programme.

5.2 Recommendations

5.2.1 Strategies for improving the effectiveness of women in Household Food security

In attempt to improve household food security, consideration must be given in improving women's decision making authority and increase the benefits that they receive. Care must be taken not to add to their already heavy burden of providing food and caring for the family. Any food security and other development programmes that are introduced in the District should be geared towards reducing the women's workload and improving their effectiveness and efficiency.

Many programmes are being implemented in Tanzania that are oriented towards women's such programmes including credit and finance for women's generating projects. The aim of such programmes is to enable women earn their own income which could be used to meet households demands. However, if women have to become more productive, it is important to increase their access to resources and information that they need to increase their incomes, and therefore, the food security of their households. In view of this, the following strategies are recommended;

5.2.1.1 Improve women's accessibility and control over the land and inputs

Women need to have increased access to land use of which they can control. This can be achieved by allocating land in their names.

5.2.1.2 Increase women farmer's access to credit and finance

Women need fixed and working capital for agricultural production. Fixed capital include hoes, axes, wheelbarrows, oxen, plough and weeders, seeds and fertilizer, storage facilities, grinding mills e cetera. Provision of credit to women puts at their disposal resources which could make their participation in productive activities more effective and efficient.

5.2.1.3 Increase women's control over the organization of production by gaining access to information

If women get hold of new information, they will be in a better position to influence decision making. Women's access to information can be increased by orienting extension towards their needs. Extension services should identify the information needed by women farmers and packages developed that are suited to their needs.

5.2.1.4 Improve women's access to technology

Agricultural technology is critical for improving agricultural productivity. Women should be able to improve household food security and to enhance their incomes by taking advantage of improved technology which is geared to increase their efficiency. The technology should be appropriate for their intended users, that are women, and it should not increase women's workloads nor demand for women's labour without additional compensation. Technological improvements are needed in the areas of food processing, storage and transport.

Efforts to improve food security in Songea rural district and Tanzania in general, will only succeed if the role of women as food producers and household managers is strongly recognized and obstacles that they face and doing their work are removed. It is encouraging to note that the government of Tanzania and may other development agencies already recognize this and programme that focus on women are being implemented nationwide. Of course there are shortfalls in some of these programmes which needed to be rectified. More effort should thus be made to incorporate women farmers' needs and concerns into ongoing programmes and those to be introduced in future. Government food security policies should try to help vulnerable households including women-headed households to reduce their risks of food insecurity by providing

for improvement in their incomes. They should also address the question of women's access to and control of resources, tasks and time allocation, and decision making.

Thus, to guarantee food security in the country deliberate efforts need to be taken to alleviate most of the problems discussed. It is necessary at this juncture to look into educating women about the available technologies, manufacture enough to meet the needs, and create conditions which will allow their acquisition. There is need to provide credit facilities for women who are known to be poor. Increased efforts should also be taken to incorporate special design and construction requirements so that women can manage the technologies easily.

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APPENDICES

APPENDIX A

KAMPALA INTERNATIONAL UNIVERSITY
SCHOOL OF ENGINEERING AND APPLIED SCIENCES
P. O. BOX 20000 KAMPALA UGANDA

QUESTIONNAIRE

Purpose

I am Peter Helpeter Luena a student of Kampala International University, Uganda. As Requirement for the fulfillment of award of Bachelor of Science degree in Environmental Management, I am expecting to carry out research and document the findings. In this regard I have chosen to carry out a research on “The role of Women in promoting Household Food security in Songea Rural District”. The information obtained will be used for this study. I assure you of the anonymity and confidentiality of the information you provide.

Instruction

Please tick in the bracket (✓) in front of the most suitable response that best describes your opinion. Where brief explanation is required, use the space provided.

A: RESPONDENT INFORMATION

Region	District	Division	Ward	Village/Street
Name of enumerator		Date	Questionnaire number	
.....				

B: HOUSEHOLD CHARACTERISTICS

1. Household head type

Male headed household () Female headed household ()

2. Household size

Adult		Children	
Male	Female	Male	Female

C. RESPONDENT CHARACTERISTICS

3. Who is the main owner of the land in this household?

Male managed () Female managed () Both ()

4. Age of respondent

5. Gender of respondent

Male () Female ()

6. Education of the respondent

None () Primary school () Secondary school () Tertiary ()

D. ACTIVITIES CARRIED OUT & TECHNOLOGIES ADOPTED BY WOMEN

7. What agricultural activities do you mostly carry out?

Activity (s)	Yes	No
Crop production	()	()
Processing preserving o agricultural produce	()	()
Animal rearing	()	()

8. Which other activity do you carry out apart from agriculture?

Collection of water ad firewood () Small-scale business ()
 Pottery () Collection of forest and wild food ()
 Handcraft ()

9. What is the actual contribution of your activities to your household?

.....

10. Who controls the income earned fro the activities carried out?

Male () Female () Both ()

11. What do you use your income for?

a.

b.

c.

12. What technologies have you adopted?

Traditional technologies () Improved technologies ()

13. What technologies do you use to process and preserve agricultural produce?

a. Grains

Shelling () Winnowing () Storage ()

Dehulling/dehusking () Grain milling ()

b. Root crops

Peeling () Slicing () Soaking ()

c. Vegetables

Sun drying () sundrying after boiling and pounding ()

Sun drying after boiling () Sun drying after pounding ()

d. Fruits

Dehydration () Fermentation () Juice extraction ()

e. Fish

Salting () Sun drying () Smoking () Frying ()

14. How can you comment on the food availability?

Sufficient () Average () Insufficient ()

15. How do you comment on the constraints that women face in promoting household food security

Land and property ownership () credit and marketing ()

Information ()

E: GENDER ASPECTS IN PRODUCTION

16. Family and hired labour distribution in agricultural production

Activity	MA	FA	MC	FC	MHL	FHL	Remarks
Field preparation							
Ridge making							
Planting							
Weeding							
Harvesting							
Processing							
Storage							
Marketing							
Grazing							
Spraying/Deworming							
Dehorning							
Debeaking							

Note: MA= Male adult, FA= Female adult, MC= Male child, FC= Female child,

MHL=Male hired labor, FHL= Female hired labor

.....END.....

Thanks for Your Cooperation

APPENDIX B

INTERVIEW GUIDE

1. Which activities is your organization carrying out in its places of operations?

Programme	Yes	No
Food security	()	()
Water and sanitation	()	()
Education	()	()
Health/hygiene	()	()
Agriculture training	()	()
Others	()	() specify.....

2. What do you think other development Partners should do to improve household food security to the local communities?

.....

.....

.....

.....

.....

3. What do you think the local people/communities should do to improve their food security?

.....

.....

.....

.....

.....

4. What challenges does your organization face to implement its goals?

.....

.....

.....

.....

.....

END

Thank you for your cooperation

MAP OF UNITED REPUBLIC OF TANZANIA



THE MAP OF RUVUMA REGION, TANZANIA

