ASSESSMENT OF GENDER ROLES IN MAIZE PRODUCTION: A CASE OF MDANDU, IGOMINYI AND MAKAMBAKO DIVISIONS IN NJOMBE DISTRICT, TANZANIA

BY

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ABSTRACT

This study was conducted at Ibumila, Nyumbanitu, and Magoda villages in Njombe District. The main objective of the study was to assess gender roles in maize production. The specific objectives were to identify existing gender division of labour, to identify reproductive roles performed by farmers, to determine access and control of resources and to examine socio-economic and cultural factors affecting gender relations in maize production. A total of 120 respondents were involved in this study where by 60 were females and 60 were males. Simple random sampling was used to get the intended respondents. The research design used was cross-sectional survey in which data were collected at single point in time through structured questionnaire. Data was coded, entered and analyzed using Statistical Package for Social Science (SPSS) computer programme. Descriptive statistics such as frequencies, mean, percentages were used to summarize the information. Results show that, men and women mainly shared agricultural roles in maize production, although women were the dominants in eight activities. Men were found to be the major decision-makers of almost all household productive resources. Also it was revealed that, high prices of farm inputs (27.0%) like fertilizers, improved seeds and pesticides were the major factors affecting gender relations in maize production. However, organization of regular trainings about gender awareness on gender issues, increase of educational contacts with maize farmers; improved supply of subsidized package of inputs should be addressed. Provision of formal marketing system to guide farmers from selling maize to traders *(walanguzi)*; and provision of adequate physical infrastructure like roads should also be addressed so as to have sufficient and sustainable maize production in a study area.

DECLARATION

I, Beatrice Hemela Claudius, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for degree award in any other institution.

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The above declaration is confirmed

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(Supervisor)

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LIST OF ABBREVIATIONS AND SYMBOLS

ADP	Animal Draft Power
DALDO	District Agricultural and Livestock Development Officer
DANIDA	Danish International Development Agency
DAP	Di-Ammonium Phosphate
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
FHH	Female Headed Household
GDP	Gross Domestic Product
HIMA	Hifadhi Mazingira
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
MGA	Money Generating Activity
MHH	Male Headed Household
NGO	None Governmental Organization
PRA	Participatory Rapid Appraisal
QPM	Quality Protein Maize varieties
RIGA	Generating Activities
RIGA	Rural Income Generating Activities
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
UNDP	United Nations Development Programme
URT	United Republic of Tanzania
VECO	Vredeseilanden Country Office
WFP	World Food Programme

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Agriculture is the backbone of most developing countries economy, and is mainly based on smallholder production system (Ellis, 1988). In Sub-Sahara Africa, Agriculture accounts for approximately 21% of the continents GDP and women contribute 60%-80% of the labour used to produce food both for household consumption and for sale (UNDP, 1994). Being one of the sectors that contribute substantially to the economy of many countries, it was expected that women who form the majority of the population are involved in agriculture. Huyer and Westholm (2006) reported that, women in developing countries are contributing a lot to social and economic development.

According to URT (2010), Agriculture is a major source of income, employment and food security for the rural population. In Tanzania, agriculture employed 76% of the labour force and contributed 24% to the country's total GDP in 2008, next to the services sector that accounted for 47.8%. Blackden *et al.* (2004) pointed out that, a distinguishing characteristic of Tanzania's economy, shared with other Sub-Saharan Africa (SSA) economies more generally, is that both men and women play substantial economic roles. Agriculture is an important source of employment for 84% of economically active women and 80% of economically active men. Ellis *et al.* (2007) documented that, the Tanzania's distribution of men and women across the sectors is uneven: Women are slightly in the majority in agriculture by 52% while for men is 48%. However, Brown *et al.* (2001) observed that, majority of women are under privileged than men in all factors of comparative analysis, for example women lack control of land and they don't have greater contact with information and extension services.

Food production dominates Tanzania's agricultural economy. It accounts for about 85% of over five million hectares cultivated per year. Maize is the major food crop for majority of Tanzanians. It is also an important food and cash crop in the Southern Highlands of Tanzania, namely Iringa, Mbeya, Rukwa, and Ruvuma regions. Maize is a leading cash crop because it is readily marketable domestically as well as across the borders. Available statistics show that until the end of the 1990s the zone was producing over 40% of all the maize in the country (URT, 2000). Furthermore, the Southern Highlands account for nearly 90% of the maize purchased for the National Food Security Granary (Mussei and Shiyumbi, 1992; Moshi and Nnko, 1989). Over 80% of the maize produced in these regions is grown by smallholders under a wide range of management practices, climatic conditions, and socioeconomic circumstances. Previous studies have shown that maize production in the Southern Highlands Zone started early this century in Iringa. In the 1950s it expanded to other regions, especially Mbeya and Ruvuma, and in the 1970s to Rukwa (Mussei and Shiyumbi, 1992).

Maize production is not static in Njombe rural agricultural communities, as it previously aimed only for food security but currently the production is for both food and cash contribution (URT, 2002). Agronomical practices related to maize production are land clearing, land ploughing (tillage), seed sowing, weeding, fertilizer application, harvesting, and post-harvest activities like transportation, processing, storage and marketing of maize produce. These activities are divided along gender categories.

1.2 Problem Statement

In Tanzania, gender division of labour in agriculture differs. According to Ellis, *et al.* (2007), on average 75% females and 25% males are involved in food crop production, including maize production, 56% females and 44% males in land tilling, 74% females and

26% males in sowing, 70% females and 30% males in weeding, 71% females and 29% males in harvesting, also 73% females and 27% males are involved in marketing. The contribution of women in the rural society is fundamental to agricultural and rural development. Like in many other developing countries, Tanzanian women are said to perform a greater role in food crop production activities. Despite their participation and their contribution in crop production gender roles in maize production is still not well documented.

Gender roles in different areas of production including maize production, is an economic issue to discuss as it may cause inequitable allocation of productive resources among small holder farmers. More recently, these issues have taken a very different connotation, mainly in terms of economic efficiency. In fact, issues of gender roles affect economic efficiency with regard to the enhancement of productivity for sustainable development (Sanga, 2008).

"*Hifadhi Mazingira*" in Kiswahili language or HIMA in Iringa was The Danish International Development Agency (DANIDA) supported programme. The government efforts through HIMA programme which comprised of five district projects in which Njombe was included, were essentially village focused agricultural, forestry and community development projects based on participatory bottom-up village planning. In Njombe district the project was introduced in 1993 and phased out in 2002. Its overall development objective was to ensure that farmers were able to practice diversified and sustainable agriculture and agro-forestry including conservation and economic use of natural resources (URT, 2004). Despite HIMA doing agriculture related interventions in Njombe district, data regarding gender roles related to maize production are lacking,

particularly to what extent the gender division of labour related to maize production exists in the district.

Therefore, assessing the different roles and responsibilities of women and men in maize production in the district is crucial for understanding how changes to that production will affect food availability, utilization of resources, management practices and hence, productivity.

1.3 Problem Justification

The understanding of gender relations in productive roles is crucial since planners and policy-makers need to be conversant with the principles of gender analysis if they are to plan from a gender-aware perspective in order to achieve the Millennium Development Goal number three which is to promote gender equality and women empowerment (URT, 2002). The absence of gender roles statistics on crop production (including maize production) perpetuates unequal participation in agricultural related roles and unequal distribution of resources between men and women, therefore rural development policies directed at the households may not have the desired effects unless the roles and position of gender in rural households are explicitly taken into account.

Therefore, findings from this study will form a basis for informing policy makers, administrators, NGOs, donors, farmers and other stakeholders in formulating gender sensitive strategies and programs that will ensure close linkage to general economic development. In addition, the recommendation of this study will have a major implication in increasing productivity among maize producers in Njombe district.

1.4 Objectives of the Study

1.4.1 General objective

The main objective of this study was to assess gender roles in maize production in Njombe district.

1.4.2 Specific objectives

(i) To identify the existing gender division of labour in maize production.

(ii) To identify reproductive roles performed by farmers.

(iii) To determine access and control of resources in maize production.

(iv) To examine socio-economic and cultural factors affecting gender relations in maize production.

1.5 Research Questions

(i) Who perform the existing productive role(s) in maize production?

(ii) Who perform the reproductive role(s)?

(iii) Who has access to and control over productive resources in maize production?

(iv) What are socio-economic factors affecting gender relations in maize production?

(v) What are cultural factors affecting gender relations in maize production?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definition of Terms

2.1.1 Gender

Gender is defined as socially constructed relationships and differences between men and women. It relates to how we are perceived and expected to think and act as women and men. Gender refers to the different social roles that women and men play and the power relations between them. Gender relations influence how communities, households and institutions are organized, how decisions are made and how resources are used (Lyimo – Macha and Mdoe (2002). Kabeer (2003) defines gender as the rules, norms, customs and practices by which biological differences between males and females are translated into socially constructed differences between men and women and boys and girls. Meena *et al.* (2008) also defines gender as the social constructed roles, behaviours and activities that a particular society considers suitable for men and women.

Various roles and behaviours may give rise to gender inequalities, i.e. differences between men and women that systematically favour one group. In turn, such inequalities can lead to inequities between men and women in terms of wealth, leadership, health status, access to food, access to education, access to health care and other services. Meena *et al.* (2008) further explain that, in many societies, women have lower social status than men, producing unequal power relations. For example, women have lower status in families, communities and society. They have less access to and control over resources and they have less of a say in decision making than men. These factors have led to a systematic devaluing and neglect of women's opportunities and ending up in unbalanced entitlement to women while they carry heavy load of work of their families. However,

Gladwin *et al.* (2001) said, gender is "an invisible factor" because gender related constraints that lower women's productivity is almost never mentioned in most societies, therefore, one finds differences and inequalities between women and men in responsibilities, activities undertaken, access and control as well as decision making opportunities.

Gender issues arise where gender inequality is recognized as undesirable and unjust. There are three aspects of gender issues: Gender gaps, which arise when there is a gender disparity in development opportunities. Gender discrimination, this expresses gender gaps, which are the result of institutionalized differential treatment of individuals on basis of their sex while gender oppression; which arises out of imbalance of power between women and men (Mosse, 1993).

2.1.2 Gender roles

Gender roles are the different tasks and responsibilities and expectations that society defines and allocates to men and women, girls and boys. Gender roles are not necessarily determined by biological factors and therefore can change with time according to situation or socioeconomic and cultural environment (Mollel and Mtenga, 2000). In other hand, gender roles is defined as the 'social definition' of the responsibilities of women and men in the society and they vary among different societies, cultures, classes, age and during different periods in history. Gender specific-roles and responsibilities are often conditioned by household structure, access to resources, specific impacts of the global economy and other locally relevant factors such as ecological conditions (Kirway *et al.*, 2003).

Gender roles are categorized into: productive roles, reproductive roles, community managing roles and political roles (Seniloli *et al.*, 2002). These are differences in behaviour or activities that men and women play in a society. Moser and Levy (1984) reported that, women had been loaded with triple roles in a society; they do perform reproductive child bearing and caring, productive (farm work and others) and the community managing roles (self help/voluntary works) while men are left to do only the productive and the community political roles (administrative and decision making). However Chrisler *et al.* (2010) explained that, reproductive roles are performed by both woman and men and the distinctions are commonly drawn between domestic and paid work.

Chrisler *et al.* (2010) also reported that work performed directly in the service of families including housework and child care is often unacknowledged because of cultural assumptions that the wife or mother should do it in the privacy of the home. Paid work, on the other hand, is much more public and historically associated with men. Holding a job and earning salary has been considered to be a husband's traditional family obligation, whereas tending to home and children traditionally has been considered a wife's primary obligation, even if she also works outside. Gender reproductive roles also differ from region to region and from one tribe to another, for example in some tribes it is a responsibility of men to fetch water, look for/find fire wood, while in others it is women's responsibilities.

Therefore, to understand how gender shapes activities that can enable rural households to increase production and climb out of poverty, it is necessary to examine women's and men's roles and responsibilities, access to and control over assets and authority to make decisions about resource and income use (Lyimo-Macha and Mdoe, 2002).

2.1.3 Gender relations

Gender relations are hierarchical relations of power between women and men that tend to disadvantage women. These gender hierarchies are often accepted as 'natural' but are socially determined relations, culturally based, and are subject to change over time. They can be seen in a range of gendered practices, such as the division of labour and resources, and gendered ideologies, such as ideas of acceptable behaviour for women and men (Reeves and Baden, 2000).

2.1.4 Resources

Resources are means and goods including those that are economic like household income, productive like land, equipments, agricultural inputs (including labour) and opportunity to leadership and decision-making, information, organization and time (Akuna, 2004). In other hand, Mookodi (2004) defined resources are those assets that may be harnessed productively to provide for human basic needs. These include: land, capital and labour. However, resource is an economic or productive factor required to accomplish an activity, or as means to undertake an enterprise and achieve desired outcome. Three most basic resources are land, labour and capital; other resources include energy, entrepreneurship, information, expertise, management and time can also define human natural capital resources etc.

2.1.5 Access to resource

Access to resource is the right or opportunity to use, manage or control a particular resource (Nichols *et al.*, 1999). Resources may be economic (e.g. land and credit), political (e.g. participation in local government and community decision-making) and social (e.g. education and training). Likewise Akuna (2004) said that, access to resource

implies to the ability to use resources and/or benefits and to make short-term decisions on these resources.

2.2 Gender Division of Labour

Prakash (2003) reported that, roles of men and women in farming are traditionally different in Africa. In some areas men clear the land and women undertake most of the remaining activities particularly weeding and processing. Since colonial period men and women have been most active in cash crop production, while women have been mainly concerned with food crops, small livestock and agro processing. Women's activities have tended to be homestead – based, for biological and cultural reasons. The particular tasks done on farms by men and women have certain common patterns. In general, men undertake the heavy physical labour of land preparation and jobs which are specific to distant locations, such as livestock herding, while women carry out the repetitious, time-consuming tasks like weeding and those which are located close to home, such as care of the kitchen garden. In most cultures the application of pesticides is considered a male task, as women are aware of the danger to their unborn children of exposure to chemicals. Women do a major part of the planting and weeding of crops. Care of livestock is shared, with men looking after the larger animals and women the smaller ones. Prakash (2003) further reported that, marketing is often seen as a female task, although men are most likely to negotiate the sale of crops. Some jobs are gender-neutral. Despite their contributions to food security, women tend to be invisible actors in development. All too often, their work is not recorded in statistics or mentioned in reports. As a result, their contribution is poorly understood and often underestimated.

Prakash (2003) further reported that, work in the household is often considered to be part of a woman's duties as wife and mother, rather than an occupation to be accounted for in

both the household and the national economy. Outside the household, a great deal of rural women labour - whether regular or seasonal – goes unpaid and is, therefore, rarely taken into account in official statistics.

Also FAO (2007) reported that, both men and women participate fairly equally in crop production. This appears in land clearing, land preparation, sowing and planting, while women carry out most of the weeding, harvesting, transportation, threshing, processing and storage activities. Women are also responsible for food preparation, fetching water and gathering firewood. Similarly FAO (1997) explained more that, studies in Sub-Saharan, have shown that women play a crucial role in many aspect of food crop production. Men are often responsible for land clearing, burning and ploughing, women specialize in weeding, transplanting, post-harvest work and in some areas, land preparation. Both take part in seeding and harvesting.

Different researchers tried to explain division of labour in various countries for example a study conducted by IFPRI indicates that African women undertake about 80% of the work in food storage and transportation, 90% of the work of hoeing and weeding, and 60% of the work in harvesting and marketing (Quisumbing *et al.*, 1995, in Blackden and Wodon, 2006).

FAO (2000) report that, Somalian women and men share crop production activities. For instance, in banana production, women fertilize and transport bananas to packing centres, while men irrigate and harvest the banana crop. Women are also responsible for the marketing of mango, potato, lemon, watermelon, vegetables and firewood to supplement their family income. The report also explain more that in Sudan men often

seek off-farm employment in urban areas, while women are left behind to do all crop production activities.

According to Ilahi (2000) the report was that, there is an important gender division of labour among various agricultural tasks. Women are primarily responsible for crop transportation, weeding and hoeing, while men do most of the land clearing. Given these patterns, the effect of productivity-enhancing and time-saving technological change is unlikely to be gender neutral. However, few empirical studies examine the impact of technical change on time allocation at the household level, and there are even fewer studies that disaggregate the impact by gender.

Results obtained by Ogato *et al.* (2009) in three rural communities in Ambo District, Ethiopia indicate that females play a more significant role than males in manual weeding, threshing (processing) and transportation of farm produce. However, both males and females play equal roles in planting, soil conservation and management, application of fertilizers and herbicides, storage and marketing of farm produce.

Audu and Onojah (2005) reported that, Gender and regional specialization exist in maize production in Nigeria. In northern Nigeria, men dominated field crop production and animal rearing while the women do the processing and storage. In middle belt women are generally involved in all maize production operations such as land clearing, tilling, harvesting and marketing of produce. In the south west, women were more in agricultural produce marketing because of the thick forest which makes farming operations such land clearing and cultivation very tedious. In the south east, women perform almost of the farm operations including transportation of farm produce with bicycle.

In other hand women provide the bulk of the labour requirement than men by 90% in sowing, 95% in weeding, 90% in harvesting and 100% in storage of maize crop among ibos of Isuikwato Local Government area in Nigeria. While men labour contribution was only higher by (80%) in land preparation (Ukeje, 2004).

The study done by FAO (1997) on PRA and gender analysis research in Dodoma rural district, in Tanzania found that at Handali village 78% of women are involved in all stages of agricultural production, compared to 22% of the men. Harvesting is the single task where all women partake without exceptions. Other tasks where women contribute almost all labour are seed planting, storage, farm clearing, seed preparation, weeding, carrying and milling. It is observed to be the most striking issue for the women to contribute high labour in all stages of agricultural production of main food crops. This could be due to the dry climatic condition of the region which forces men in the study area to migrate in other potential areas like towns and mining places to seek for employment. The study result is contradicting with the study result reported by Ishengoma (1998) on the role of women in household food security in Morogoro rural and Kilosa who found that, males and females shared the same tasks on more or less equal bases. Women dominated in all activities of food crop production with exception of site clearance, transporting crops and marketing are performed mainly by men. Also according to study conducted in Mbinga, Mattee (2000) reported that, women's labour input in farm work was substantial in *ngolo* cultivation, plating, weeding, harvesting and threshing. Men contribute significant labour in land preparation and marketing.

2.3 Access to Productive Resources

2.3.1 Land

Access to productive resources such as land, improved inputs, technology, education and financial services is a critical determinant of agricultural productivity. Agriculture is important to women. However female farmers have less access to the productive resources and services required by agricultural producers. Women are less likely than men to own land or livestock, adopt new technologies, use credit or other financial services, or receive education or extension advice. In some cases, women do not even control the use of their own time. While the size of the gender gap differs by resource and location, the underlying causes for the gender asset gap are repeated across regions: social norms systematically limit the options available to women. Regardless of cause or magnitude, however, the gender asset gap reduces the agricultural productivity of women and thus involves broader economic and social costs (FAO, 2011).

Land is the most important household asset for households that depend on agriculture for their livelihoods. Access to land is a basic requirement for farming and control over land is synonymous with wealth, status and power in many areas. Strengthening women's access to, and control over, land is an important means of raising their status and influence within households and communities. Improving women's access to land and security of tenure has direct impacts on farm productivity, and can also have far-reaching implications for improving household welfare (FAO, 2011).

2.3.2 Livestock

Livestock is another key asset in rural areas (FAO, 2009). In many countries, livestock is one of the most valuable agricultural assets and represents a source of income and wealth accumulation as well as an important source of resistance to shocks. Draught animals are

also the main source of power for ploughing, land clearing and transportation in many regions. In Indonesia and Pakistan, for which the Rural Income Generating Activities (RIGA) database contains information on incomes from livestock but not livestock holdings, net incomes from livestock are significantly higher in male-headed households than in female-headed households (FAO, 2009).

In Nicaragua, for example, women own around 10 % of work animals and cattle but 55–65 percent of pigs and poultry (Deere *et al.*, 2009). Even when women jointly own large animals, they do not necessarily have access to the services they provide, as was found for Indian women and the use of oxen (Chen, 2000).

The RIGA data measure livestock in physical terms – tropical livestock units – but the results are consistent with other studies that evaluate the value of livestock holdings. Data from northern Nigeria, for example, indicate that the value of men's livestock holdings is about twice that of women's (Dillon and Quinones, 2010). The same study found that, men and women use livestock differently as a store of wealth and as a buffer against shocks. Men are more likely to hold assets in the form of large animals such as cows and bulls as compared to women who hold small animals, household durable goods and jewellery. Additionally women tend to draw down assets more quickly than men in response to crises and as they get older (Dillon and Quinones, 2010).

2.3.3 Farm labour

Labour availability depends on the amount of family labour that a household can mobilize and the amount of labour that can be hired in local labour markets. Labour constraints can be more acute for both women and female-headed households than for men and male-headed households for several reasons. Women generally face gender-specific constraints

as agricultural labourers and in hiring-in labour. Low levels of human capital – education, health and nutrition – are a constraint on women's labour productivity in agriculture and other sectors (Behrman *et al.*, 2004). Often there is a pronounced gender division of labour for particular agricultural tasks, with the result that male and female labour cannot be easily substituted. Moreover, women are time constrained by domestic tasks such as care-giving and collecting firewood and collecting water (Quisumbing and Pandolfelli, 2010).

2.3.4 Information and extension services

Good and timely information on new technologies and techniques is essential for farmers when deciding whether or not to adopt an innovation. Although private extension services are playing an increasing role in some countries, such as Brazil, China and India, public extension services remain the key source of information on new technologies for farmers in most developing countries. Extension services encompass the wide range of services provided by experts in the areas of agriculture, agribusiness, health and others and are designed to improve productivity and the overall wellbeing of rural populations. The provision of agricultural extension can lead to significant yield increases. Yet, extension provision in developing economies remains low for both women and men, and women tend to make less use than men of extension services (Meinzen-Dick *et al.*, 2010).

2.3.5 Technology

Blackden *et al.* (2006) reported that, access to new technology is crucial in maintaining and improving agricultural productivity. Gender gaps exist for a wide range of agricultural technologies, including machines and tools, improved plant varieties and animal breeds, fertilizers, pest control measures and management techniques. A number of constraints, including the gender gaps described above, lead to gender inequalities in access to and adoption of new technologies, as well as in the use of purchased inputs and existing

technologies. The use of purchased inputs depends on the availability of complementary assets such as land, credit, education and labour, all of which tend to be more constrained for female-headed households than for male-headed households. The adoption of improved technologies is positively correlated with education but is also dependent on time constraints. In an activity with long turn around periods, such as agriculture, working capital is required for purchasing inputs such as fertilizers and improved seeds; however, as discussed above, women face more obstacles relative to men in their access to credit.

Blackden *et al.* (2006) further reported that, adoption of improved technologies and inputs may also be constrained by women's lower ability to absorb risk. The evidence points to significant gender differences in the adoption of improved technologies and the use of purchased inputs across regions. For example, Male Headed Households (MHHs) show much wider use of fertilizers than their female counterparts in all countries covered. While the direction of the difference is unambiguous across technologies and regions, the degree of inequality shows notable variations, appearing much more pronounced in Southern Asia (Bangladesh and Pakistan) and in West Africa (Ghana and Nigeria).

Detailed country studies provide deeper insights. In Ghana, for example, Doss and Morris (2001) found that only 39% of female farmers adopted improved crop varieties (compared with 59% of male farmers) because they had less access to land, family labour and extension services. Several studies from Kenya show that female-headed households have much lower adoption rates for improved seeds and fertilizers. These differences are explained by reduced access to land and labour, lower education levels and limited access to credit markets (Saito *et al.*, 1994; Ouma *et al.*, 2006). Credit constraints also limit the access of Female Headed Households (FHHs) to fertilizers in Benin and Malawi (Minot *et*

al., 2000). In Burkina Faso, women use less fertilizer per hectare than men (Udry *et al.*, 1995).

Studies that disaggregate mechanization – tools and other farming equipment – by gender are rare. This may, in part, be because modern farming equipment such as tractors and tillers are not commonly available to any farmer, especially in sub-Saharan Africa. The share of farmers using mechanical equipment and tools is quite low in all countries, but it is significantly lower for farmers in female headed households, sometimes by very wide margins. A few studies from the late 1980s and early 1990s point to gender differences in ownership of, or access to, tools. In a Gambian irrigated rice scheme, none of the women owned a plough and fewer than 1% owned a weeder, seeder or multipurpose cultivation implement; the proportions of men owning these tools were 8%, 12%, 27% and 18% respectively (von Braun *et al.*, 1989).

According to data from a household survey across three Kenyan districts, the value of farm tools owned by women amounted to only 18% of the tools and equipment owned by male farmers (Saito *et al.*, 1994). In a more recent study of productivity differences by gender in a rice irrigation scheme in Central Benin, researchers noted that equipment such as motor cultivators used for ploughing and transport were managed by groups, but women's groups were unable to start ploughing until the drivers had completed work on men's fields. As a consequence of the delays in ploughing and planting, women faced yield losses and could not participate in a second cropping season (Kinkingninhoun-Medagbe *et al.*, 2010). Gender differences in the use of farm equipment may have further implications. For example, Quisumbing *et al.* (1995) concludes that farmers with more land and tools are more likely to adopt other technologies, thus highlighting the complementarities among agricultural inputs.

Furthermore, lack of access to transportation technology often limits the mobility of women and their capacity to transport crops to market centres. It is important to note that not all types of female-headed households are equally constrained in their access to technology. On small farms in Kenya, households headed by single, divorced or widowed women are the least likely to use animal traction. In contrast, female-headed households in which the husband lives elsewhere are more likely to use animal traction and hired labour, because they still benefit from their husband's name and social network and often receive remittances from him (Wanjiku *et al.*, 2007).

2.4 Importance of Maize

Maize is the most important staple food in sub-Saharan Africa and it is the main food crop in Tanzania. According to Saghir *et al.* (2005), maize accounts for 31% of the total food production and constitutes more than 75% of the cereal consumption in the country. Maize represents about 30% of the value of crop production in the country and 10% of total value added in agricultural sector respectively. Hepelwa (2010) reported that, farmers are attracted by higher prices of their farm produce. Higher prices give an incentive to farmers to continue clearing new land unless measures for improving productivity are available for them.

Maize constitutes an important source of carbohydrates, protein, vitamin B, and minerals. As an energy source, it compares favourably with root and tuber crops, and it is similar in energy value to dried legumes. Furthermore, it is an excellent source of carbohydrate and is complete in nutrients compared to other cereals. The nutritional quality of maize is further determined by the amino acid makeup of its protein. Maize is deficient in two essential amino acids: lysine and tryptophan, making it a poor protein food. Furthermore, the protein quality of dry-milled maize products is inferior to that of the original whole

grain. Deficiencies in maize protein have motivated researchers to develop Quality Protein Maize (QPM) varieties to increase concentrations of these essential amino acids in its protein (Latham, 1997).

2.5 Linkage between Gender Roles and Agricultural Production

Gender roles and agricultural production are significantly interlinked. Apparently, gender disparity is conterminous with man's evolution historically; the roles and responsibilities of women and men were differentiated to a large extent in every human society. Oakley, as cited by Ekong (2003), concluded that no tasks were gender specific except child bearing. Ekong (2003) further noted that the anatomical and physiological differences in the make up of females and males were indisputable. The major concern to sociologists was how these differences had shaped the social relationship between sexes. Women and men had certain inevitable roles and responsibilities which they performed in the society. Olawoye (1993) defined gender as a socio-economic variable which assisted the researcher to analyze the roles, responsibilities, constraints and opportunities of both women and men.

Gender issues ramify into virtually every aspect of human endeavour and agricultural production is not an exception. Even in developed countries where mechanized farming is greatly practiced, gender disparity manifests in the marketing, processing, and picking of fruits, nuts and seeds. Gender disparity is more extant in rural farming activities in developing counties where culture appears to dictate every step taken by the individual in their development efforts.

Gender-specific roles and responsibilities are often conditioned by household structure, access to resources, specific impacts of the global economy, and other locally relevant

factors such as ecological conditions (FAO, 2000). Women are twice as likely as men to be involved in agriculture related activities (Odame *et al.*, 2002).

The life needs of men and women in any given social system are not always the same, because of their different roles, responsibilities and resource endowments. The impacts of different achievement of better life also vary across different social and gender contexts. Women and men are therefore likely to differ in their capacity, choice and adoption of different agricultural technologies, and hence attention must be paid to such diversities (Pasteur, 2002). Macharia *et al.* (2010) noted that, gender categories include men and women, boys and girls, young and elderly, male-headed and female-headed households are Important in social system. In any social system gender has great potential for having a significant impact on agricultural production. Different roles and responsibilities are placed on the different genders by different social systems. These roles and responsibilities are critical determinants of access to and control over productive resources, such as land, farm income, labour, farm inputs like fertilizer and improved seeds. The social systems also determine entitlement to resources and power among men, women, and children. This, therefore, implies that food availability and appropriate access and control of resources will be attained if different gender roles are properly integrated into agricultural related interventions and household production process.

According to case study from the United Republic of Tanzania, Kessy (2006) documented that, a gender-differentiated breakdown of labour in agricultural production shows that, women participate more than men in all the major activities and carry out nearly all the post-harvest activities. As the main actors in harvesting and post-harvest activities, women manage the local seed system, particularly the seeds for food crops. Women from all socio-economic groups are the key selectors of seeds; a process that starts in the field for

some crops such as maize and pumpkin. Plants in the field are selected according to their vigour, early maturity, drought tolerance and size of cobs/fruits. Selected plants are marked and harvested separately; for example, selected maize plants are marked by removing the tassel. Further selection takes place during processing, when characters such as seed size, seed colour, cob size and freedom from insect damage are considered.

Also according to case study in Bariadi, Tanzania Amri *et al.* (2010) reported that, the processing of produce and seeds differ depending on the type of crop and its importance to the household. Crops those are important to men because of their market value are processed by the whole family, while less valued crops are left to women. For example, maize, rice, groundnut and beans, which are important food and cash crops in the surveyed villages, are processed by both women and men. Women use specific processing techniques, such as shelling whole cobs for maize and the middle of cobs for seed. Women and girls process other crops such as pumpkin and cowpea, which men do not usually deal with.

With respect to seed separation and selection, Amri *et al.* (2010) further reported that, men and women both separate seeds from the field for saving, but women involvement is higher than male. Women frequently are involved with activities of seed separation at home, preparing nursery beds and gathering seedlings for transplanting. Women are generally solely responsible for post- harvest processing activities such as drying, winnowing/cleaning field crops. Seed selection is mainly done by women while men are responsible for constructing adequate seed storage structures. The study revealed that, men take an active role in seed selection for cash crops while women roles are for food crops. Even when food crops such as maize, groundnuts, millet and sorghum are to be used as cash crops, men's role is higher than women. Also Lazaro *et al.* (2004) reported that,

Female farmers in Southern Highlands of Tanzania tend to have more knowledge, skills and experience in selecting seed for food crops (maize, potatoes, beans, peas, vegetables, groundnuts, bambara nuts, cassava and beans), while male farmers are more responsible for selecting planting materials for cash crops like coffee and pyrethrum.

Seed processing is the series of procedures by which raw grains are preserved or stored for planting in the following season. With technology limited to hand processing, further information by Amri *et al.* (2010) about seed processing in Bariadi is that, women are more involved in this activity than men. This is due to their skills in winnowing and using the wind and in sieving /grading and drying at an early age, taught by their mothers, mothers-in-law and other older women of the household.

The role of gender in seed storage methods vary with the different crops grown. Men take an active role which may become cash crops which include maize, groundnut, millet and sorghum. This differentiation can change depending on external circumstances such as in years of good harvest. Seed quality is dependent upon good storage facilities and maintenance. Families depend more on women's knowledge than men to supply seeds for the next sowing season. Lazaro *et al.* (2004) continued to report that, farmers in the Southern Highlands tend to store grain for consumption separate from that which is stored for seed, which are preserved so that they retain a high germination capacity for the following season. They construct seed storage structures such as *vihenge*, and identify botanicals for control of pests. Generally, seed storage is a women's responsibility, so women posses most of the local knowledge about seed storage for the next year's sowing and ultimately, the healthy harvest of their staple crops for subsistence.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Geographical Description of the Study Area

The study was conducted in Njombe district, Iringa region in Tanzania mainland. The district is located between 7°5'-36°32' South and 33°44'-36°32' East (URT, 2002). Major ethnic groups in the district are the *Wabena*, *Wakinga* and *Wahehe*. The district has an area of about 10 66 Sq. km with a total population of 420 348 people, whereby 196 130 are males and 224 218 are females (URT, 2002). Tea and timber trees are the major cash crops but some food crops such as maize, beans, wheat and round potatoes are also used as cash crops. Other fruit crops such as avocado, pears, peaches, apples, plums and pineapples are also produced. Livestock like cattle, goats, sheep, pigs, rabbits, guinea pigs, chicken and ducks are kept.

3.2 Research Design

The research design used was cross-sectional which allowed data collection at a single point in time. This method is economical and could be used for a descriptive study as well as for determination of relationship between variables (Bailey, 1998).

3.3 Sampling

3.3.1 Study population

The study population included all maize growers in the three selected villages in Mdandu, Igominyi and Makambako divisions.

3.3.2 Sampling procedure

Multistage sampling technique was used whereby three divisions (Mdandu, Igominyi and Makambako) were purposely selected as their occupants conduct a lot of maize production activities. One ward from each division was randomly selected, whereby one village from each ward was randomly selected.

3.3.3 Sample size

From the three selected villages, 40 maize growers were randomly selected whereby 20 were females and 20 were males from each village to make a total sample size of 120 maize growers. Also an Extension Officer from each village and key informants such as village leaders (selected by the use of table of random numbers) were included in the study. Separate from this sample size, Focus Group Discussions (FGDs) of 12 members (6 males and 6 females) from each village. These were picked purposively, from village registration book. The group also included village leaders, influential people (these were village extension agents and those people who lived there for a long time) in order to get more detailed information. Therefore, the sample size for the study was 120 maize growers whereby 60 were females and 60 males.

3.4 Data Collection Methods

3.4.1 Primary data collection

Primary data related on gender division of labour, reproductive roles, access and control of resources, socio-economic and cultural factors were collected using structured questionnaires that were developed to capture the study objectives (Appendix 1). This was supplemented by results from FGDs. Pre–testing of the structured questionnaires was done to evaluate the acceptability, validity of questions and adjustment was done according to suggestions obtained to address the determined objectives.

3.4.2 Secondary data collection

Secondary data such as records regarding gender roles in maize production were gathered through reading various reports from agricultural extension offices such as District offices, Sokoine National Agricultural Library, journals, internet sources and other sources which were unpublished but had relevant information.

3.5 Data Analysis

Data obtained from respondents were summarized, coded and analyzed by the use of Statistical Package for Social Sciences (SPSS) computer software version 12 so as to obtain descriptive statistics such as frequencies, mean, percentages. Results from descriptive statistics were used to construct frequency distribution tables for interpretation of the results.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

This chapter presents the discussion on research findings from a study that was conducted in Njombe District for the purpose of assessing gender roles in maize production. The chapter includes five sections. Section one describes respondents personal characteristics, section two identifies the existing gender division of labour in maize production in the District. Furthermore section three deals with identification of reproductive roles and section four explains about determination of the access and control of resources in maize production. The last section (five) is about the determination of socio-economic and cultural factors affecting gender relations in maize production in the District.

4.1 Demographic Characteristics

In assessing gender roles in maize production in Njombe District, the establishment of information about respondents' personal characteristics becomes imperative. Personal characteristics comprise age, marital status, level of education and main occupation of the respondents who were involved in the study.

As far as age groups of respondents are concerned, in overall, the majority (52.4%) of respondents were between 36 and 50 years old. From this percentage women between these ranges of age were 26.6% and men were 25.8%. Mandara (1998) found that under normal circumstances this age implies as the most economically active age group for Tanzanians. Furthermore this group of people is active group in terms of labour provision and was mature enough to cooperate and give clear information because they had a practical experience on the gender roles performed in maize production.

With regard to marital status, results as appeared in Table 1 show that, there were more male respondents (46.7%) who were married than female respondents (34.2%). Hence the majority of respondents were married and this leads to availability of free labour in the households for production of maize crop. These findings are similar to what was observed by Mtama (1997) who reported that marriage has an effect in the production process as it increases free labour availability in the households. However there were groups of respondents who were widowed (9.1%), whereas women and men were 5.8% and 3.3% respectively. Divorced and separated women were 4.2% and 5.8% respectively. Study results show that, there were more single female respondents than male respondents (Table 1).

With respect to education, study results as appeared in Table 1 show that, the majority (69.2%) of the respondents had attained primary education. However, there is a segment of population, 32% of all respondents had no formal education and 5% had attained education above the primary school level. This observation indicates that many farmers had primary education. This indicates that, most of the respondents knew how to read and write. Having a population with no formal education by 5% was unexpected and not very much appreciated because in Tanzania basic education is regarded as basic right and compulsory for all Tanzanians (URT, 2003).

Table 1: Distribution of respondents by demographic characteristics

Variable	Sex of respondent					
	Female (n=60)		Male (n=60)		Total (N=120)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Age group						
21 - 35	12	10.0	21	17.5	33	27.5
36 - 50	32	26.6	31	25.8	63	52.4
51 ≤	16	13.4	8	6.7	24	20.1
Total	60	50.0	60	50.0	120	100.0
Marital status						
Married	41	34.2	56	46.7	97	80.9
Widowed	7	5.8	4	3.3	11	9.1
Divorced	5	4.2	0	.0	5	4.2
Separated	7	5.8	0	.0	7	5.8
Total	60	50.0	60	50.0	120	100.0
Level of education						
None formal	15	12.5	17	14.2	32	26.6
Primary school	44	36.7	39	32.5	83	69.2
Secondary school	1	0.8	4	3.3	5	4.2
Total	60	50.0	60	50.0	120	100.0
Household size						
3-4	17	14.2	14	11.7	31	25.9
5-7	43	35.8	46	38.3	89	74.1
Total	60	50.0	60	50.0	120	100.0
Main occupation						
Formal employment	0	.0	5	4.2	5	4.2
Both livestock keeper and crop producer	54	45.0	31	25.8	85	70.8
Temporary worker	6	5.0	24	20.0	30	25.0
Total	60	50.0	60	50.0	120	100.0

In comparing between male and female respondents, the study results show that there were more female respondents (36.7%) with primary education than male respondents (32.5%). On the other hand there were more male respondents (14.2%) with no formal education than female (12.5%) and secondary education (3.3%) than female respondents (0.8%).

As far as average household family size is concerned, respondents were asked to state the number of their households' members. Study results in Table 1 show that, 74.1% of all respondents reported to have an average range of 5-7 members in the households, while

the remaining (25.9%) of respondents reported to have a range of 3-5 members of the households (Table1). These findings indicate that, many households (74.1%) in the study area have large number of members. Meaning that, this number per household almost agreed with the national standard of an average of 6 persons per household (URT, 1997 as cited by Elias, 2003).

When asked about their main occupation majority (70.8%) of the respondents said they were involved in livestock and crop production. However in comparing between male and female respondents involved in livestock and crop production, results show that, (64%) of female respondents were involved in the production while (36%) male respondents were involved in the same production. Results further show that, there were only (4.2%) male respondents involved in formal employment. But in case of temporary employment males' involvement was higher (20.0%) than that of females (5.0%). This is because the Ibumila and Nyumbanitu villages are located near the Kimyanga and Njocho wattle estates. The temporally job that villagers were performing in these estates was the wattle cutting and bark stripping. It is the job which needs a lot of energy so that a few numbers of women cannot prefer.

4.2 Existing Gender Division of Labour in Maize Production

This section deliberates on existing labour division in maize production activities namely land clearing, land ploughing (tillage), sowing, weeding, fertilizer application, pest/ diseases control, harvesting, transportation, processing, seed sorting, storage, and marketing. Therefore, the households' sources of labour were mainly parents. Children, other members of households (elders aged above 50) and hired labour served as just supplementary sources of labour.

Findings in Table 2 show the distribution of the respondents based on the existing gender division of labour in maize production. Out of 12 maize production activities studied, eight activities were dominantly done by females while four activities were dominantly done by males. Maize production activities in which females dominated were: pest and diseases control (62.5%), seed sorting (60.8%), weeding (59.2%), fertilizer application (56.7%), processing (55.0%), harvesting (53.3%), sowing (47.5%), and marketing (34.2%). For the case of pest and diseases control activity, the findings as shown in Table 2 disagree with that of Prakash (2003) who reported that, in most cultures of Africa the application of pesticides is not considered a female task, as they are aware of the danger to their unborn children of exposure to chemicals. But in Njombe now days the application of pesticides is regarded as female task.

Table 2: Distribution of respondents by existing gender division of labour in maize production

Activity	Female		Male		Both		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1.	30	25.0	67	55.8	23	19.2	120	100.0
2.	27	22.5	59	49.2	34	28.3	120	100.0
3.	57	47.5	39	32.5	24	24.0	120	100.0
4.	71	59.2	16	13.3	33	27.5	120	100.0
5.	68	56.7	32	26.7	20	16.7	120	100.0
6.	75	62.5	34	28.3	11	9.2	120	100.0
7.	64	53.3	19	15.8	37	30.8	120	100.0
8.	19	15.8	48	40.0	53	44.2	120	100.0
9.	66	55.0	23	19.2	31	25.8	120	100.0
10.	73	60.8	5	4.2	42	35.0	120	100.0
11.	35	29.2	47	39.1	38	31.7	120	100.0
12.	41	34.2	35	29.2	44	36.6	120	100.0

Where:

1. Land clearing	5.Fertilizerapplication	9.Processing
2.Land ploughing/Tillage	6.Pest-Disease control	10.Seedsorting
3. Sowing	7.Harvesting	11. Storage
4.Weeding	8. Transportation	12. Marketing

It was reported by members of FGDs that, the style of using the disposable bottles (such as the used Uhai, Kilimanjaro and Africa bottles of drinking water) for application of chemicals instead of normal sprayers has simplified the task in such a way that even children can now do application of the chemicals in maize farms. Therefore the used plastic containers of drinking water have brought significant changes for women and children to be involved in disease and pest control activity. Otherwise these results indicate that, in Tanzania both men and women play substantial roles in country's economy but female are more active in agriculture than men, specifically in food crop production (Ellis *et al.*, 2007).

Also the findings are in line with those of Audu (2009) who reported that, women dominated in farming activities such as weeding and harvesting because these activities require less energy and light implements. For instance, small hoes are usually used for weeding, women dominated in the processing and storage because these activities are related. Processing is carried out in order to transform the produce to more acceptable and storable form. However, Jethropetit (2001) documented that, the activity is suitable for women because it builds on indigenous knowledge which requires few inputs and can be carried out at home, thus enabling women to fully participate while maintaining their other roles as home makers.

Moreover the FGDs' members reported that, in the study area women involvement was higher in the marketing activity because women were the ones who were mostly full time available at the households and were able to make negotiations with the traders who go door to door asking for maize to buy. Thus women in the households had a higher chance to sell maize than men. These findings also concur with those of Audu (2009) who reported that, women dominated in the marketing of crop produce in Ghana because there

were more women in the food market as a result of those who come to buy farm produce for their domestic uses. Woman-to-woman interactions result in better transaction and as such most men often consign their farm produce to their wives to sell.

Production activities in which males dominated were land clearing (55.8%), land ploughing (49.2%), transportation (40.0%) and storage (39.1%). These findings are similar to observation of Prakash (2003) who reported that, men generally undertake the heavy physical labour of land cleaning, land tillage and other related jobs which are possessed by male and which are specific to distant locations, such as livestock herding and looking for building material. Study results (Table 2) show that: maize transportation (44.2%) was dominantly performed by both females and males followed by marketing of maize (36 .6%) while the lowest involvement was in pest and disease control (9.2%) followed by fertilizer application activities (16.7%). Participants of FGD reported that most of the maize produce was transported by men with the use of ox-carts and bicycles. These means of transport are operated mostly by men especially for MHHs but most of women can do this by either permission from their husbands or in absence of their husbands. In a few case especially for FHHs, women can either hire ox-carts or use their own bicycles for doing anything they want. Further report was that, those households with Draft Animal Power (ADP) made money from others who did not have because they hired draft animal for carrying maize from the fields to homes. This was a kind of money generating activity (MGA) for few households in the study area. Generally, large number of women in the study area transported maize produce using their heads. Therefore the use of ox-carts in the study area has influenced men to participate in the transportation of maize produce. This findings match with that of Mehra (1995) who reported that: Women have relative less access than men to improved technologies and other productive resources like labour and machinery.

With respect to community managing and political roles, FGD members reported that: men were mostly involved in building school structures and making sure that village roads and bridges are passable. For the case of building school related structures, women are also involved in fetching water. Political roles such as village leaderships are performed by both men and women. However attending village parents-teachers meetings both men and women are involved.

In view of children labour, results in Table 3 reveal that, children are more active in sowing, (85.8%), fertilizer application (83.3%) and pest and diseases control (92.5%) activities. This observation indicates that children's involvement in productive work is not an issue. It becomes an issue when it interferes with their physical, emotional and intellectual development. In families engaged in agricultural production, children are also socialized to be involved in the family's productive activities (Amaryllis *et al.*, 2002).

Farmers in the district mainly were not only depending on family labour but might also hire labour for 9 tasks like land clearing, land ploughing, seed sowing, weeding, fertilizer application, pest and disease control, harvesting, transportation and processing. Regarding to other members of the households and hired labour, results show that level of provision of labour was low followed by very low involvement by other members of the households. Findings further show that there was no hired labour required in seed sorting, storage and marketing while other members of the households are active at a lowest level in processing (6.7%) and seed sorting (4.2%).

Table 3: Distribution of the respondents by existing gender division of labour in maize production

Activity	Children		Other members		Hired labour		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1.	16	13.3	0	0.0	10	10	120	100.0
2.	6	5.0	0	0.0	22	22	120	100.0
3.	103	85.8	0	0.0	6	6	120	100.0
4.	12	10.0	0	0.0	17	17	120	100.0
5.	100	83.3	0	0.0	5	5	120	100.0
6.	111	92.5	0	0.0	3	3	120	100.0
7.	17	14.2	0	0.0	10	10	120	100.0
8.	12	10.0	0	0.0	7	7	120	100.0
9.	10	8.3	8	6.7	25	25	120	100.0
10.	8	6.7	5	4.2	0	0	120	100.0
11.	13	10.8	0	0.0	0	0	120	100.0
12.	0	0.0	0	0.0	0	0	120	100.0

Where:

1.Land clearing
2.Land ploughing/Tillage
3. Sowing
4.Weeding
5.Fertilizerapplication
6.Pest-Disease control
7.Harvesting
8. Transportation
9.Processing
10.Seedsorting
11. Storage
12. Marketing

4.3 Division of Labour in Reproductive Activities

In assessing gender roles in maize production, it is important to consider division of labour based on reproductive activities in the study area. The reproductive roles or activities discussed include, fetching water, food preparation, child care, cleaning and washing, caring for domestic livestock and fetching fire wood. The main sources of labour were parents while the children and other members of the households (elders aged above 50) supplemented parent labour.

In addition to the contribution of female labour in maize production, contribution in a reproductive role is also very high for females than males. Study results as shown in

Table 4 reveal that demand for females labour is more than males labour. Female labour is more important in all activities than males' labour.

Table 4: Distribution of respondents by reproductive gender roles

Activity	Women		Men		Both		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	83	69.2	4	3.3	33	27.5	120	100.0
2	90	75.0	4	3.3	26	21.7	120	100.0
3	113	94.2	4	3.3	3	2.5	120	100.0
4	111	92.5	4	3.3	5	4.2	120	100.0
5	82	68.3	15	12.5	23	19.2	120	100.0
6	109	90.8	4	3.3	7	5.9	120	100.0

Where:

1	Fetching water	4	Cleaning and washing
2	Food preparation	5	Caring for domestic livestock
3	Children care	6	Fetching fuel wood

Children care (94.2%) was the most roles that interfered women's contribution in maize production while caring for domestic livestock (68.3%) was the least role to interfere their contribution in the production. Males' contribution was the same in five activities (3.3%). This happened because male respondents who contributed this percentage (3.3%) were widowed and they were very few in the study area. Otherwise the contribution of men was a little bit high in caring for domestic livestock (12.5%). The FGD members reported that, most of the household activities are defined by the *Bena* society traditions. Reproductive roles are mainly done by females alone, but males are also involved in community roles. Other none domestic roles like provision of shelters, cultivation of timber trees are mostly belong to men. Findings show that, both female and male respondents were highly involved in fetching water (27.5%) and this is probably due to their participation in caring for domestic livestock (Table 4). Their involvement in children care was very low (2.5%). This indicates how women's workload in the household is still higher because of low

involvement of men in some major reproductive roles like children care. However, both females and males as parents in the households had another joint responsibility to undertake, such as disciplining the children and providing clothes for them.

Apart from attending village parent-teachers meetings, which are jointly decided by couples, most of reproductive activities highlighted in the study area were based on norms, roles and responsibilities of men and women in the society. But according to Danso *et al.* (2004), these roles are complementary, and enhance growth and stability in households where the roles are clearly defined.

In view of children, findings reveal that, they support their mothers in all activities: Children were highly involved in fetching water (75.8%), cleaning and washing related activities (75.8%). for activity like children care (10.8%), participation of children was very small (Table 5). These findings are in line with those of Amaryllis *et al.* (2002) who argued that, every child is valued as a gift from God, deserving of care, nurturance and protection. At the same time, parents are disciplinarians and aim to mould their children into the socially accepted norms of society. Part of this norm, especially in rural areas, is for children to participate early in life in household activities.

Table 5: Distribution of respondents by reproductive gender roles

Activity	Children		Other members		Hired labour		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	91	75.8	0	0.0	0	0.0	120	100.0
2	88	73.3	0	0.0	0	0.0	120	100.0
3	13	10.8	5	4.2	0	0.0	120	100.0
4	91	75.8	8	6.7	0	0.0	120	100.0
5	82	68.3	6	5.0	0	0.0	120	100.0
6	86	71.7	0	0.0	0	0.0	120	100.0

Where:

1	Fetching water	4	Cleaning and washing
2	Food preparation	5	Caring for domestic livestock
3	Children care	6	Fetching fuel wood

Hence, it is not unusual to find pre-school children being asked to look after infants and younger siblings. Neither is it exceptional for young children to help in household chores: carrying water, gathering fuel, sweeping, washing dishes and going on simple errands.

Further results show that labour force from other members of the households is in children care (4.2%) cleaning - washing (6.7%) and caring for domestic livestock (5.0%). These activities are not energetic and they are performed by elders who are above 50 years of the age. Hired labour is completely not required in all reproductive activities.

4.4 Access and control of Resources in Maize Production

This section is based on the results and discussion concerning with productive resources such as land, income (generated from maize production), labour (hired), farm inputs (fertilizer, pests and pesticides) and agricultural extension service. During the research, respondents were asked who had access to productive resources and who has a final say on the mentioned resources (this is the resource controller/decision maker). Results on gender differences in access to and control over these resources are summarized and presented clearly.

4.4.1 Land

The domination of agriculture in most African economies suggests the importance of land as a basic tool of development and a significant determinant of income earning power (Blackden and Bhanu, 1998). Also Fakoya (2004) reported that, it is an important factor necessary for improving sustainable maize farming activities. The new Land Laws provide for translation in order to popularize them and enhance the legal capacity of the poor and women to understand them, demand and enforce their rights. The Village Land Act and village Land Regulations have already been translated: Women in the villages can

now own land in their own right or jointly with men regardless of customary and religious restrictions. This gives them a stake in the development of their own villages and enhancing their role as major producers on the land. Also customary systems of land management which is discriminative will therefore gradually be replaced with more secure individual tenure which provides incentive for agricultural investment and increased output; and women's effective participation in land matters have been entrenched in the new land laws. Women shall be members in Land Allocation Committees and in the National Land Advisory Council (Fimbo, 2004).

New Land Laws adopted in several sub-Saharan African countries certifying a woman's title to land improved the welfare of women and members of their households (IFAD, 2009). It is estimated that if women had the same use of certain agricultural inputs as men, agricultural outputs would increase between 7% and 24% (Quisumbing and Haddad, 1998). The study contacted by (IFAD, 2009) also revealed that women in African countries like Burkina Faso, Kenya, Tanzania and Zambia their agricultural output could be increased by 10% - 20% if they had the same amount of capital investment in agricultural inputs, including land, as their male counterparts.

Shifting labour and fertilizer between men's and women's plots could increase output by 10% - 20 %: Giving women farmers the same inputs and education as men could increase yields by more than 20%; Reducing time burdens on women could increase cash incomes for smallholder coffee and banana growers by 10%; and If, output in Zambia would increase by up to 15% (IFAD, 2009). Since most of the respondents in the study area are farmers, access to land is a critical determinant of agricultural productivity. Allendorf (2007) pointed that; improving gender access to land has direct impacts on farm productivity and can also improve household welfare.

Results in Table 6 show that, men (42.5%) had high power to control land for maize production compared to women (16.7%), it was also revealed that (33.4%) men and (23.3%) women had access to land. Furthermore the study indicates that (43.3%) and (40.8%) both women and men had access and control over land, respectively.

Table 6: Distribution of the respondents by access and control of land

Resource	Access		Control and decision making	
Land	Frequency	Percent	Frequency	Percent
Women	28	23.3	20	16.7
Men	40	33.4	51	42.5
Both	52	43.3	49	40.8
Total	120	100.0	120	100.0

Generally result findings in the study area indicate that, although women's proportion in access to land is higher, majority have limited control over land as an important resource for maize production. These findings are not in line with those of Ogun State of Nigeria where 91.3 % of women have access to land and control over it. Therefore, women's control over land implies that they can make major decisions on land for their productivity and welfares of households. This may also realize equality in control over productive resources (Akuna, 2004).

The land is close to life and it yields its benefits in an endless flow. As a form of property, land has a significance which few other forms of property enjoy. It provides one's livelihood, determines one's status and provides a sense of belonging and identity. How the land should be used and by whom, who should own and control it, how its fruits should be shared are the questions of much concern. The idea of democracy and equality together with human rights which emerged in the 18th Century laid down the foundation for the relation of people to the land as equal rights to own land. When ownership of land is inequitable agricultural growth delivers less benefit for the poor and women in terms of

income, employment and direct access to the fruits of the land. Land is thus of economic, political and symbolic significance (Fimbo, 2004).

However, there are arguments that the African customary land tenure system excludes non members of the clan or family from transactions in land and hence distort land markets and undermine full integration of rural economies into international markets. The same author further argues that in many parts in Sub- Saharan Africa, rights of land, exchange often do not result in efficient market for land further discriminates women's access to and control over land. Although these arguments may be valid in some ethnic groups, but there is also evidence in some parts of Tanzania where customary land tenure allows transfer of land ownership from one clan or family to another through marriage and sales (URT, 1994).

According to FGDs, the participants reported that, most of women in the *Wabena* tribe have power to access and own small plots of wet land (*vinyungu)* which are inherited from their parents. They can also transfer these plots to their off-springs. These findings are similar in one way or another to Isinika and Mutabazi (2005), in their study conducted at Mtwango village in Njombe district as they showed that, "among the *Bena* tribe in Njombe district, men as well as women are allowed to inherit land from their parents and in some cases from their husbands. Women also have some rights of disposal according to customary law. Women had both uses and transfer rights on land, since they inherit land from their parents and they could bequeath the land to their off-springs". In opposite way, the findings are different from Meena *et al.* (2008) where the major factor that causes gender inequality in Kilimanjaro region, is the ownership and access to land. The Chagga land tenure does not allow women to inherit land therefore land is entitled to men only.

Likewise, during interview the women respondents reported that, they had access to land by different ways: some acquired land through inheritance from their parents and husbands, through purchasing or renting from other people. These findings are in line with Hellin *et al.* (2010), La Rovere *et al.* (2008) and (2009), Mathema and Gurung (2006) who observed that, women's access to key resources, including land, is commonly determined via their relationships to the husbands or fathers. Thus, free and easy accessibility to agricultural resources, especially among women, has been proven to be a significant factor for improved agricultural production (Fletschner, 2008).

Since the cropping calendar for growing maize coincides with that of tree growing, the reason for men (33.4%) to have minor role in access to land for maize production is due to some of them to be involved in planting pine and wattle tree seedlings. This also affects labour availability in terms of access and control in most of MHHs in the study area. However, findings indicate that, joint access to land and other following resources for both women and men is higher than they can control over the same resources. This indicates that, MHHs are the majorities of this study. However, results of both women and men in using or access land and other resources jointly happen to be in large percentages in this study, but disparities appear to be small in the control of these resources, meaning that the percentages become small.

4.4.2 Income from maize production

Access to productive resource like income is important for achieving not only household food security but also for purchasing farm inputs such as improved seeds, fertilizer and pesticides as resources for next growing season. Access to income determines a person's productive capacity, maize production levels and the level of vulnerability to food insecurity (Mikalista, 2010).

Findings show that, both women and men (39.2%) dominated in access to income generated from maize production but those who have control power on this income were in small proportion by (33.3%). Further findings show that, men also in small proportion have access to income earned from maize production by (36.6%) while a large proportion of men have power to control the same resource by (49.2%). However women in a large proportion of (24.2%) were free to accessed income when few of them (17.5%) have control over it (Table 7).

Table 7: Distribution of respondents by access and control of income

Resource	Access		Control and decision making	
Income	Frequency	Percent	Frequency	Percent
Women	29	24.2	21	17.5
Men	44	36.6	59	49.2
Total	120	100.0	120	100.0

The findings generally show that, for women to access income earned from maize production is not an issue. Decision-making on household income has been a central issue in the study area. Since maize is also regarded as the cash crop, women are leading in marketing maize for traders (*walanguzi*) (Table 2). FGD participants reported that, women in the study area are allowed by their husbands not only to keep the obtained income in safe place but also the expenditure of the income requires consultation with their husbands. Therefore, in MHHs women have no final say to make decision on income generated from maize production.

4.4.3 Labour

Gender roles are important social determinants of availability of labour. It is widely recognized that the disparities in access to and control over labour can impede productivity (Katz, 1995). Labour availability depends on the amount of family labour that a household can mobilize and the amount of labour that can be hired in the households.

Labour needs and constraints can be more acute for both women and female-headed households than for men and male-headed households (Behrman *et al.*, 2004).

Study results show that, men (27.5%) and (32.5%) dominated in both access and control of households' labour respectively. While women (17.5%) and (14.2%) were at low level in both access and control of household labour respectively. However, some respondents (35.0%) in the study area had neither access to nor control over labour (Table 8).

Table 8: Distribution of respondents by access and control of labour

Resource	Access		Control and decision making	
Labour	Frequency	Percent	Frequency	Percent
Women	21	17.5	17	14.2
Men	33	27.5	39	32.5
Both	24	20.0	22	18.3
None	42	35.0	42	35.0
Total	120	100.0	120	100.0

Generally, the findings indicate that, men are the major users and controllers of households' labour in the maize production than women. According to FGDs, this is due to men's involvement in activity of planting pine and wattle trees in which some of households in the study area are regarding the activity as for income generation. Furthermore FGD participants from Nyumbanitu and Magoda villages reported that, this kind of activity is carried out far away from the homesteads and sometimes men may be required to remain in the activity point for about 3 to 4 days depending on the land area for working. It is energetic activity since it needs use of labour for digging holes and planting tree seedlings at the same time. Therefore pine and wattle production has direct impact to maize production since un-availability and un-utilization of households' males labour increase work load for women who perform a lot of productive and reproductive activities, hence low productivity will continue to exist in agriculture.

4.4.4 Farm inputs

Women's access to improved seeds, fertilizers and pesticides is limited. Women farmers are rarely members of cooperatives, which often distribute government subsidized inputs to small farmers. In addition, women lack cash income needed to purchase inputs even when they are subsidized. Adequate and timely access to inputs is critical for improving productivity (Mehra, 1995).

Study findings reveal that, women access and control to inputs like fertilizer; improved seeds and pesticides was (45.0%) and (21.7%) respectively. Further results from the study also reveal that, access (36.7%) and control (29.2%) of the inputs was for both. On the other hand men's access and control of farm inputs was (18.3%) and (49.1%) respectively (Table 9).

Table 9: Distribution of respondents by access and control of farm inputs

Resource Inputs	Access		Control and decision making	
	Frequency	Percent	Frequency	Percent
Women	54	45.0	26	21.7
Men	22	18.3	59	49.1
Both	44	36.7	35	29.2
Total	120	100.0	120	100.0

Generally these findings indicate that, in the study area, women are the main users of farm inputs and they are highly involved than men in productive activities which are also related to farm inputs (Table 2), although children are also hand in hand with their mothers (Table 3). These activities are: sowing (47.5%), fertilizer application (56.7%), pest and disease control (62.5%). Also findings indicate that, women in the study area have low control power to farm inputs than men or in other way the findings indicate that, men in the study area have high control power to farm inputs thus have final say or decision on farm inputs like fertilizers, improved seeds and pesticides. Participants of FGDs reported

that, both men and women have joint decision on what type of inputs to buy and whether to use or not while women can decide on what amount of inputs to apply in maize and are the ones who mostly direct children the amount to use.

4.4.5 Agricultural extension services

Extension services play a major role in building the knowledge stock of farming communities. They help farmers to translate research results into increased crop yield (Manyong *et al.*, 2008). Although private extension services are playing an increasing role in some countries, such as Brazil, China and India, public extension services remain the key source of information on new technologies for farmers in most developing countries (Meinzen-Dick *et al.*, 2010). The usefulness of extension and related information services rests on both the farmer's access to the source of the information and its quality and appropriateness. Access to appropriate information may have a significant impact on agricultural productivity. In Tanzania, Fortmann (1976) noted that knowledge of high maize production correlated with recommended maize practices. Similarly in Kenya, the availability of extension services has a significant effect on output, production increases by 7.5–18.8 % (Ongaro, 1990).Yet, extension provision in developing economies remains low for both women and men, and women tend to make less use of extension services than men (Meinzen-Dick *et al.*, 2010).Therefore, provision of agricultural extension and information can lead to significant yield increases from maize crop.

Study results as appeared in Table 10 show that, both women and men (13.3%) had access and do control information such as marketing, crop prices and new technologies essential for farmers, which they receive from extension agents and other related source.

Further study results show that, men (22.5%) had access to information and control of the same resource (23.4%). While women (11.7%) had access to and control over information (10.8%). Otherwise (52.5%) of neither respondents access to nor control over information obtained from the sources (Table 10).

Table 10: Distribution of respondents by control of agricultural extension information

Resource	Access		Control and decision making	
Agricultural extension information	Frequency	Percent	Frequency	Percent
Women	14	11.7	13	10.8
Men	27	22.5	28	23.4
Both	16	13.3	16	13.3
None	63	52.5	63	52.5
Total	120	100.0	120	100.0

In general, these findings indicate that, there is little or limited access to extension services by both male and female farmers in the study area. This contradicted the earlier belief that extension officers preferred to talk to the men who were heads of households (Saito *et al.*, 1994). The reality is that, effective agricultural extension services appear to be little in the study areas. There is more access to and control over agricultural extension information for women rather than men. Therefore, slightly more than one-half farmers (52.5%) have limited access to and control over agricultural extension information in the study area. However, FGD members at Nyumbanitu village reported and claimed that, although it is about a year since the extension agent to be available in the village, farmers were benefited from extension service in the last 8 years. But during interview some respondents in Nyumbanitu village reported to have received agricultural extension service recently. Absolutely others reported to have never been or come across with the extension agent in their village. At Ibumila village the FGD members reported that, the

International programme, namely World Food Programme (WFP), had recently arrived in the village.

It is concerning with provision of extension trainings on maize crop. This is not regular enough to meet the needs of farmers. Later on the programme will be purchasing maize from individual farmers within the village. However the extension service that they mostly benefit is related to livestock production. Therefore, little or lack of access to agricultural extension service is seen as serious problem facing the farmers in their efforts to increase maize production.

4.5 Socio-Economic and Cultural Factors Affecting Gender Relations in Maize Production

This section presents socio-economic and cultural factors that affect gender relations in maize production in Njombe District. The factors that affect gender relations were determined using pair wise ranking tool as presented in Appendix 1. The tool comprised five statements which were realized to explain the relations during pre-testing of the questionnaire. However, at that stage of questionnaire pre-testing the extent to which of them explained gender relations was not known.

In using the tool, respondents were asked to state to which item was the major factor between two items in a pair of the items. There were 4 pairs such as (1, 2), (1, 3), (1, 4) and (1, 5). In the tool each of the statements had equal chances of being selected in time, for example item number could appear throughout the first row. The numbers of times each of the items won was recorded and are summarized in Table 11. On the basis of the results from the study, the major factor that scored more than other factors is consecutively appeared: higher price of farm inputs (7.7 out of 4 times); followed by

inadequate use of farm inputs (7.3 out of 4 times); and limited access to extension services (6.3 out of 4 times). The factors that scored the least were culture and traditional norms (2.4 out of 4 times) followed by un-availability of formal market (4.8 out of 4 times) Table 11.

Table 11: Distribution of respondents by Socio-economic and Cultural factors affecting gender relations

Factors explaining gender relations	Numbers of times each of the factors won out of 4			Extent affecting gender relations (%)
	Minimum	Maximum	Mean	
Inadequate use of farm inputs	5.00	9.00	7.3	25.6
High price of farm inputs	6.00	9.00	7.7	27.0
Un-availability of formal market	2.00	8.00	4.8	16.8
Limited access to extension services	5.00	8.00	6.3	22.2
Culture and traditional norms	1.00	4.00	2.4	8.4
Total	-	-	28.5	100.0

The percentages in the last column in Table 11 show that the extent to which each of the factors that affect gender relation in maize production. This means that if the factors were the only ones affecting gender relation in maize production the percentages would be the actual extents to which the factors explain gender relations in maize production. However because they are not the only factors in this case they just indicate the relative extent to which each of the factors affecting gender relations in maize production.

In short study results as shown in Table 11 reveal that, the most important factor affecting gender relation in maize production is high price of agricultural inputs like fertilizers, improved seeds and pesticides. The other important factors are inadequate use of farm

inputs and limited access to agricultural extension services. However, the least factors were culture and traditional norms and un-availability of formal market.

Affordability and availability of agricultural inputs is one of major constraints to productivity increase. This is true for fertilizers, seeds, agro-chemicals, etc. The reasons can be found in the realities of the Tanzanian agricultural production system. There has been much less fertilizer available than farmers would have been willing to buy. This meant that when the farmers wanted to increase their production and therefore demanded more inputs, the shortage of supply pushed the fertilizer prices up (Amani, 2004).

But farmers' fertilizer use depends on two things: whether fertilizer is available in their area in time and whether the farmer has the money to purchase fertilizer. The impact of fertilizer use on productivity also depends on whether farmers apply it appropriately on their fields (Doss *et al.*, 1999).

In Table 11 study results show that, high price of farm inputs and inadequate use of farm inputs are the major and leading factors affect gender relations in the study area. Generally these findings indicate that, most of the small holder farmers in the study area do not apply appropriate rates of fertilizers and other inputs in their maize fields. Further indication is that, inadequate use of inputs is due to high price of inputs which is unaffordable for majority of farmers in the households. FGD participants reported that, although the government through DALDO office provides subsidized fertilizers and improved seeds to some few farmers at a reasonable price, these inputs do not even meet needs of farmers. They reported that, not all farmers can afford to buy additional bags of unsubsidized inputs so that to make them enough for their farms because the subsidized inputs price is slightly reasonable than unsubsidized ones. For example in 2009/2010 cropping season, a

bag (50kg) of DAP price was Tshs. 45 000/=, a bag (50kg) of UREA price was Tshs. 35 000/= and 10 kg of hybrid seeds price was Tshs. 20 000/= (this is a provided subsidized package of maize inputs per acre), while unsubsidized bag with the same quantity of DAP price was Tshs. 65 000/=, UREA price was Tshs. 38 000/= and hybrid seeds price was Tshs. 27 000/= (this was unsubsidized package of maize inputs per acre that is available in the normal agricultural inputs shops). Therefore in the study area inputs may not be applied efficiently across all of a household's plots due to unaffordable prices.

Further general findings indicate that, limited access to agricultural extension services is the other important factor that affects gender relations in maize production (Table 11). This is due to slightly more than one-half of all respondents in the study area neither access to nor control over agricultural extension information (Table 10). Inadequate physical infrastructure is among the main impediments for traders and food crop producers in Tanzania. The market barriers that lead to increase cost of transportation, they can also lead to decreased size and profitability of the market (VECO-Tanzania, 2006). Also Eskola (2005) reported that, the transaction costs those traders incur for transportation of crop products from the production areas, have created low bargaining power in term of price for most crop producers in Tanzania. Kruger *et al.* (2002) noted that, due to largely varying condition of the road network, the ongoing market price for transportation is often higher than the official estimates. Also the rise of fuel prices in recent years faced by the transporters actually depends on the time of the year as well as the location within the country. The more remote the location, the more expensive the fuel is. For example, the distance from Dar es Salaam to Iringa is 501 kilometres and the transportation fee is 200 000 shillings per truck of 10 tons whereas the distance to Mtwara is 565 kilometres but the cost of transport is 800 000 shillings due to poor condition of the roads.

Additionally, VECO Tanzania (2006) reported that, the primary actors in the market are sellers and buyers. The transaction between them is influenced by other actors and factors in their proximity. Their transaction costs will go high or low depending on the influences of actors, and factors. Matching of demand and supply requirements is often the most critical challenge for the survival of any production for sale. The demand side of market linkages is where buyers are seeking raw materials in order to satisfy the requirements of the end users. On the other hand, the supply side of it is where farmers are seeking production support/ services and market outlets for their produce.

Further report was that, efforts of increased production and productivity on the side of farmers without taking into account the market requirements is often lead them to frustrations. The demand and supply of such ingredients is often in a disequilibrium state. Interventions to bridge the gap are inevitable and the challenge is to facilitate it in such a way that market distortion is avoided.

Regarding an issue of buyers versus sellers market, VECO Tanzania reported that, typical trend in developing economies is where buyers market prevails. This has a number of features like price setting often by few, hence limited bargaining power on the side of producers etc. (VECO Tanzania, 2006).

Study results as appeared in Table 11 show that, the least important factor that affects gender relation in maize production is un-availability of formal market (16.8%). When FGD participants asked to state where farmers sell their produce, they reported that, they sell their products either to the local traders to middlemen traders (*walanguzi*) or to the buyer coming from other regions and mostly from Dar es Salaam. Local traders act as middlemen between many local producers and a few regions' buyers. Furthermore the

participants reported that, these local traders buy the crop products at a time that is approaching a growing season of maize crop. At this moment of time farmers in the households are getting prepared for land clearing and ploughing activities. Also inputs for coming growing season is needed but lack of money is the barrier to accomplish their production requirements. This means that, farmers have no alternative way of bargaining the price that is required by the middlemen traders. Farmers' priority demand is money so that to meet the production requirements of the coming growing season. FGDs report is on line with that of Hepelwa (2010) who also reported that, farmers are attracted by higher prices of their farm produce. Higher prices give an incentive to farmers to continue clearing new land unless measures for improving productivity are available for them.

Gender relations are often accepted as 'natural' but are socially determined relations and culturally-based. They can be seen in a range of gendered practices, such as the division of labour and resources (Reeves and Baden, 2000). According to Lyimo –Macha and Mdoe (2002) gender relations influence how communities and households are organized, how decisions are made and how resources are used. In Table 7 Further results show that, culture and traditions norms are last and least important factors affect gender relation in maize production in Njombe district (8.4%). In this study the obtained results normally affect women as they dominate in performing reproductive roles (Table 4). Also, few of them accessed land (Table 6) although they were main producers in maize production, they were highly involving in two third (2/3) of all activities in maize production (Table 2).

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The general objective of the study was to assess gender roles in maize production in the study area which was Njombe district. The specific objectives to be achieved were; identification of existing gender division of labour in maize production, identification of reproductive roles, determination of access and control of resources and determination of socio-economic and cultural factors affecting gender relations in maize production in the study area.

The conclusion of this study was that: Both males and females in Njombe district participate in productive and reproductive roles, assisted by children, other family members like elders and hired labourers. The two sexes have either joint or un-joint responsibilities for productive roles to ensure a good level of household food security and income. Generally, women are dominating in performing both productive and reproductive roles. For example, women are dominating in 8 out of 12 roles than men. The roles dominated by women are sowing, weeding, fertilizer application, pests and diseases control, harvesting, processing, seed sorting and marketing. While those are dominated by men are land clearing, land tillage, transportation and storage. However women are also dominating in performing reproductive roles.

In general both men and women in the study area had access to and control over all the household productive resources; but men had more access and control over land, income, labour and information and agricultural extension. Furthermore, majority of women dominated in access of farm inputs like fertilizers, improved seeds and pesticides than men

but minority of them had control of farm inputs. However majority of men had dominated in the control of these inputs. Likewise in FHHs, women had access and control over all resources without problems. Since the majority of farmers in this study are married, and with regard to access and control of productive resources, men in MHHs are therefore have final say of making decisions to all productive resources.

Generally, conclusion on socio-economic and cultural factors is that, culture and traditional norms is the least important one followed by unavailability of market affect gender relations in maize production. The High price of inputs and inadequate use of farm inputs are the most important factors affect gender relations in maize production, followed by agricultural extension services.

5.2 Recommendations

i. DALDO office should organized regular trainings about gender awareness on gender issues. This will help to solve culture and traditional norms oriented issues that impede maize production.

ii. The government should provide gender awareness interventions that can help women to learn and thus reduce work load for women who are mostly performing both productive and reproductive roles in the study area. Also it will help women to have access to and control over all productive resources.

iii. The government should increase the supply of subsidized package of inputs so that to allow adequate use of farm inputs.

iv. DALDO office should increase educational contacts with farmers, especially in relation to maize production.

v. Government should provide formal marketing system that will prevent farmers to sell their products to local and middlemen traders who formulate their own prices.

vi. Government should provide adequate physical infrastructure like roads in order to create better situation for maize producers and make sure the transaction costs those traders incur for transportation of crop products from the production area is low, so that to allow high bargaining power of price, as well as creation of high purchasing power to farm inputs for maize production.

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APPENDICES

Appendix 1: Questionnaire for Maize Growers

Study Topic: Assessment of gender roles in maize production. A case of Mdandu, Igominyi and Makambako divisions in Njombe District, Tanzania:

Section A: General Information

A 1 Questionnaire No.....

A 2 Division name.....

A 3 Ward name.....

A 4 Village name.....

A 5 Interviewer name.....

A 6 Date of interview.....

Section B: Respondents' Demographic Characteristics

Tick the appropriate answer and where necessary fill in the provided space.

B1. What are your demographic characteristics?

GENERAL CHARACTERISTICS	
(i).Sex (1= male, 2 = Female	Tick
(ii).Age in years	
(iii).Marital status(1= Married, 2=Widowed, 3=Never married, 4=Divorced, 5=Separated)	
(iv).Level of education(1=Non formal, 2=Primary school, 3=Secondary school, 4=Post secondary school, 5=Others, specify)	
(v).Main occupation (1= Formal employment, 2= Business/petty trade, 3=Both livestock keeper and crop producer, 4=Livestock keeper, 5= Crop producer, 6= Others, specify)	
(vi). Head of the household 1=Male, 2=Female	
(vii).Number of your household members	

SECTION C: C1. Who perform the following productive role(s) in maize production?

Activity	Women	Men	Both	Children	Elders	Labourers
1. Land preparation						
2. Land ploughing						
3. Planting/Sowing						
4. Weeding						
5 Fertilizer application						
6. Pest and disease control						
7. Harvesting						
8. Transportation						
9. Processing						
10. Storage						
11. Marketing						

SECTION D: D1. Who perform the following physical reproductive role(s)?

Roles	Woman	Man	Both	Children	Elders	Labourers
1. Fetching water for general cleanliness						
2. Food preparation						
3. Cleaning and washing related						
4. Caring for domestic livestock						
5. Fetching fuel wood						

SECTION E

E1. Who has access to and control over the following resources?

Resources	Access			Control (Decision making)		
	Woman	Man	Both	Woman	Man	Both
1.Land						
2. Cash/Income						
3. Labour (hired),						
4. Production inputs: (Seeds, fertilizers, pesticides etc).						
5. Extension service information						

SECTION F

F1.What are socio-economic and cultural factors affecting gender relations in maize production?

	1 Inadequate use of inputs	2 High price of farm inputs	3 Unavailability of market	4 Limited access to extension services	5 Culture and traditional norms
1.Inadequate use of inputs					
2.High price of farm inputs					
3.Unavailability of market					
4.Limited access to extension services					
5. Limited access to extension services					

F2. Which is the most serious factor among the above ones?

FACTOR	Number of the Factor Won	%
1.Inadequate use of farm inputs		
2. High price of farm inputs		
3. Unavailability of market		
4.Limited access to extension services		
5.Culture and tradition norms		
TOTAL		

THANK YOU FOR YOUR COOPERATION.

Appendix 2: Checklist

Study Topic: Assessment of gender roles in maize production: A case of Mdandu, Igominyi and Makambako divisions in Njombe District, Tanzania:

1. What type of gender related intervention(s) have been conducted in the village?
2. What are gender related training(s) have been conducted in the village?
3. What type of maize production related intervention(s) have been conducted in the village?
4. Which maize production related training(s) have been conducted in the village?
5. What types of community roles are performed by villagers?
6. Who is responsible in performing community roles?
7. What types of political roles are performed by villagers?
8. Who is responsible in performing political roles?
9. Who is responsible for marketing maize?
10. What kind of resources that are mostly controlled by women?
11. Why women and children are mostly active in fertilizer and pesticides application?
12. What are socio-economic factors affecting your gender relations?
13. What are cultural factors affecting your gender relations?