GENDER ROLES IN THE DOMESTIC AND FARMING SYSTEMS OF TCHENZEMA WARD IN MOROGORO DISTRICT TANZANIA

BY

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ABSTRACT

The purpose of the study was to determine gender roles in the household activities of Tchenzema ward in Morogoro district. The specific objectives were description of division of labour by gender and age, determination of sources of income, custodian of family income and decision making by gender.

A cross-sectional survey was conducted on a randomly selected sample of 200 farmers. A structured questionnaire was used to collect primary data. Secondary data were obtained from literature. Data were compiled by using D Base and analyzed by using the Statistical Package for Social Sciences (SPSS) Programme. Results are presented in tabular and graphical forms.

The study findings show that domestic work is a female's domain; women contributed 70-87% labour to all tasks, men 25-29%, male children 25-35% and female children 27-46% to the same. Males contributed more labour to livestock husbandry; men's labour contribution to all tasks was 26-72%, women's 26-42%, male children's 25-34% and female children's 25-27% of the same. Crop production tasks were shared between gender. Custodian of income was gender independent, decisions were jointly made, however men and women had different income sources and income expenditure patterns. There was no gender variation in the extension method preferred.

It was observed that, gender roles differ from those documented on patrilineal societies (Due and Mudenda, 1982; Burfisher and Horenstein, 1985; Swantz, 1985; Beshara, 1987; Conelly *et al.* 1987 and Polomack, 1989). This matrilineal society has already made room for both men and women although there is still room for improvement.

It is recommended that extension service and the development projects contact men and women farmers in order to be effective.

DECLARATION

I, Ngoyako A. Mtenga do hereby declare to the Senate of Sokoine University of Agriculture that the work presented here is my own, and has not been submitted for a higher degree in any other University.

Signature .....

Date ...20/10/93.....

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To my husband Prof Louis Mtenga, my children Primi, Tereza and Janet, my nephews Anna and Cathy who endured much; and my parents Amiram and Elisia Nyela who laid down a concrete foundation for my education.

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LIST OF ABBREVIATIONS

CCM: Chama Cha Mapinduzi, the national ruling party.

FTHDP: Franco-Tanzanian Horticultural Development Programme.

UMHODEP: Upper Mgeta Horticultural Development Project.

UWT: Umoja wa Wanawake wa Tanzania, the women wing of the ruling party.

VEO: Village extension officer.

CHAPTER ONE: INTRODUCTION

1.1 Background information

Agriculture is the backbone of most developing countries' economies and is mostly based on the small holder production systems. In most cases women are the major producers of food while men are responsible for cash crops production (Ellis, 1988).

Women make up 60 to 80 % of agricultural workers in Africa and Asia and more than 40 % in Latin America. The work they do depends not only on where they live but on their work place within the rural economy. As such the extent of participation by men and women varies from society to society depending on lineage system whether it is matrilineal or patrilineal, and farming systems (Ahmed, 1983; Karl, 1984; Feldstein and Poats, 1989 and Polomack, 1989).

In most areas of sub Saharan Africa cultural divisions have created sharp gender divisions of labour in the household. Men and women may control different crops or carry out different tasks. For example women weed and men plough or men engage in cash crop production while women engage in subsistence crop production. Sex roles relating to labour in the rural households have the potential for exaggerating problems of availability and seasonality of labour.

In addition to their different labour roles men and women in developing countries households have different sources of off-farm income and financial responsibilities. Women secure supplementary income from beer brewing and retailing of processed food while men concentrate on crafts like carpentry. Furthermore women are frequently responsible for their family food and clothing while men are responsible for house construction and/or repair, purchase of luxury items like radio and other status maintenance strategies. As such women may be less interested than men in increasing their labour in cash crop production, which is frequently a male income earning activity. If such different and conflicting interests do exist and are not taken care of in the planning process; agricultural development projects may not give the expected results if based on conventional analysis. In particular if one role of a developing project is to identify and remove key bottle-necks to the more efficient use of scarce resources, there is need to include a detailed within household analysis besides the conventional analysis (Burfisher and Horenstein, 1985).

In Tanzania, about 72 % population is engaged in peasantry farming employing traditional practices (Senkondo, 1992). Although there is an enormous potential for increasing agricultural production, this potential is not being realized due to weather hazards, factors

pertaining to the national extension system like inefficient input and information delivery systems, lack of relevant extension packages and unattractive working conditions for extension officers. In addition gender issues like division of labour and decision making by gender are not considered (Gabriel, 1989; Wambura, 1992). For example recent development literature talks about the "role of women being invisible to development planners". Women are only invisible to untrained researchers or enumerators (Saito and Weidemann, 1990); since some development planners only look at work in the modern cash sector of economy ignoring the essential domestic work of women. Thus, it is men who make up the statistics of agricultural labour (Karl, 1984).

This study determined gender roles in the farming systems of Tchenzema ward in Morogoro region. Tchenzema was chosen as a study area because of various reasons. Firstly, the society is matrilineal and it was in the interest of the researcher to find out whether gender roles differ from those observed in patrilineal societies. Secondly, agricultural production is done throughout the year through irrigation. Thirdly, it has distinctive farming systems which are commercial crop production, subsistence crop production and livestock production. Subsistence crops include maize, beans, peas, bananas, and rootcrops. Cash crops grown include vegetables, beans and perennial

horticultural production. The livestock reared are mainly pigs and goats; a few sheep, local chicken and ducks are also reared. Fourthly, because of the existence of a development project in the area which showed interest in the study.

The Franco-Tanzanian Horticulture Development Programme (FTHDP) has been conducting Farming Systems Research and Development in the area since 1985. Recently, FTHDP has initiated a different development project in the area called Upper Mgeta Horticultural Development Project (UMHODEP). This has indicated interest in the study. UMHODEP operates through the Department of Agricultural Education and Extension of the Sokoine University of Agriculture. Among the achievements of UMHODEP is the emergence of a farmers association concerned with the improvement of production and marketing of fruits and vegetables. The association's name is "Twikinde Malimbichi". "Twikinde" is a Luguru word for solidarity while "Malimbichi" is a Swahili word for perishable produce. The association became the target for horticultural development and research as well as a tool by which farmers identified and solved their problems as a group.

Dairy goat production and poultry projects are more recent development projects introduced to the area. They are also based at the Sokoine University of Agriculture.

1.2 Statement of the Problem

There is a wealth of information on gender roles in agriculture because there has been a great deal of research in this field since economist Ester Boserup published her ground-breaking work "Womens Role in Economic Development" in 1970. However many of the studies just by chance, are mainly on patrilineal societies. A few studies have been done on matrilineal societies; for example Brain (1962) on the Kwere of Tanzania; Beidelman (1967), on the matrilineal societies of Eastern Tanzania; Brain (1975), on the position of women in the Rural Settlement Schemes in Tanzania (the Luguru and Kutu tribes); Wembah-Rashid (1978) on the Socio-economic System of Wakwere; Swantz (1985) on Women in Development: A creative Role Denied? The Case of the coastal societies of Tanzania and Bolin (1990) on The Hidden Power of Women: Peru Highlands and Western Sumatra compared. Nevertheless, none of these studies have been a quantitative analysis of gender roles in agriculture.

The aim of this study is to carry out a quantitative study on gender roles in the domestic and farming systems in the Luguru matrilineal society.

1.3 Objectives of the Study

The overall objective of the study is to examine and document the gender roles in the domestic and farming systems of Tchenzema ward in one season.

The specific objectives include:

1 Description of the division of labour on the basis of gender and age in:

(a) domestic work.

(b) livestock husbandry.

(c) production of cash crops.

(d) production of food crops.

2 Determination of sources of income by gender.

3 Determination of custodian of family income accruing from various sources.

4 Determination of decision making in the following aspects:

(a) production process.

(b) resource allocation and disposal of produce.

(c) income expenditure (financial responsibility).

1.4 Hypotheses to be tested

In order to determine the relationship between gender and income sources, accessibility to family income and decision making the following hypotheses will be tested:

1 Sources of income are independent of gender.

2 Accessibility to family income is gender independent.

3 Decision making is gender independent in the following:

(a) production process.

(b) resource allocation and disposal of produce.

(c) income expenditure (financial responsibility).

1.5 Limitations of the study

1 The study was intended to cover the five villages of Tchenzema ward. However due to limitation of resources, namely time, transport and money only three villages were covered.

2 A longitudinal survey would have been the most appropriate for this study but again time available was too short, thus a cross-sectional survey was conducted and it covered only one season.

3 Interviewing women proved to be more difficult than men even with a prior appointment. Possible explanation was either firstly, women were too busy; secondly, they did not attach much value to interviews or thirdly talking to visitors was reserved for men, the public relation officer of the family. To counteract such situations the researcher had to live in the village and interview women after field work as they prepared evening meals.

4 Soliciting concepts; like amount of time spent on a task such as in hours, days or weeks; and acreage of plots were observed to be difficult for farmers to recall or comprehend because of lack of records. This was more complicated by the fact that certain tasks were performed simultaneously, especially domestic work.

1.6 Significance of the study

The information generated from this study will add to the wealth of knowledge on gender roles in agriculture and more specifically in a matrilineal society where literature on gender production relation is scarce.

Furthermore it is expected that the the development projects namely; the UMHODEP, dairy goats and poultry production will find it useful in their activities by being more efficient in resource allocation through being gender sensitive and thereby improve farmers production and income.

Finally, I hope that the extension system will find the criticisms and recommendations constructive in improving their effectiveness.

1.7 Operational definitions

1 Household activities in the study were limited to domestic tasks, livestock production tasks,

cropping activities and off-farm enterprises.

2 Household labour categories: categories set were:

-adult male and adult female formed the couple head of the family; the research involved only full time resident farmers.

-children; the male and female children of the couple; these were youths who assisted in the househod activities.

-"others"; these were close relatives of the couple like brothers, sisters, father or mother. They could also be friends or neighbours who worked on the traditional labour exchange programme known as "ubava" or mutual help where local beer was used as token payment. Hired labour was also included in this category. This category was not broken down by gender nor by age.

3 Measurement unit for division of labour was the proportion of labour contribution by each category to a given task. A respondent was asked to state the proportion of a task performed by the categories of the household labour. Four options were given to choose from (one quarter, a half, three quarters or a unit which is 100%) of the task in question

(appendix 1). These proportions were converted to percentages and compounded to only one figure for each labour category per task.

4 Tasks: these corresponded to the type of household activities; thus there are:

- domestic tasks which include food preparation and cooking, cleaning homestead, wash dishes, fetch water, secure fuel wood, wash clothes and purchase of domestic items.
- livestock husbandry tasks which include; feeding, health care, cleaning shed, graze/ tether, pasture estalishment, milking and marketing.
- crop production tasks which include cultivation, sowing, weeding, fertilizer application, pesticide application (cash crops) harvesting, processing and storage and marketing.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews literature on gender roles in the household activities in developing countries. Production relations in matrilineal societies are also covered as well as extension service in relation to gender.

Much of the literature assumes that the household is a unit of statistical analysis which works together harmoniously (Feldstein and Poats, 1989). However in most cases this is not so because household members are likely to have conflicting preferences, incentives, responsibilities and objectives with regards to the intra-household distribution of labour, resources and rewards (Jones, 1986).

Consequently, gender analysis is essential for examining the gender roles in the household activities within the household dynamics. This literature review is thus based on gender analysis and will focus on:
division of labour; which will analyse the household labour division by gender and age categories in domestic work, livestock production, and crop production; sources of income by gender; decision making by gender in the production process, resource allocation and access to and expenditure of income; gender roles in matrilineal societies and extension service in relation to gender.

2.1 Division of labour

In many societies farm tasks are often gender specific. For example, while males plough land, females may sow, or females may be responsible for water fetching while males cater for firewood. In farm production, the division of labour may be by crop, by field or by task. This division is cultural and varies from society to society. It may also change as a result of economic or population pressure (Tibaijuka, A.K. and Feldstein, H.S. 1990; unpublished; Poley, J.K. 1991; unpublished). Division of labour is conveniently discussed under: division of labour in the domestic work, in livestock husbandry and crop production.

2.1.1 Division of labour in domestic work

Within the domestic sphere, women work for the family not only to ensure it's reproduction, but also it's maintenance and survival (Mies, 1985; Keregero, M.M. 1991 unpublished). Furthermore, Ngetti, M. (1988; unpublished) found out in Iringa region in Tanzania, that the fundamental role of women in the society is to be found in the family, and the general feeling among women is that their family is the most important aspect in life. Also Gabriel (1989) documented that women had a mediating role in the household welfare and nutrition.

Lijongwa (1981) reported that women especially those

of sub-Saharan Africa did all the house work as well as a big proportion of agricultural activities. Her findings are also supported by a study of 112 rural families and 30 families living in market areas in three provinces of Zambia. Of the respondents, females contributed 82 percent of domestic labour while males contributed only 18 percent (Due and Mudenda, 1982). A similar study in Hausa land in Nigeria by Longhurst (1985) revealed that women's chief productive work is food processing for family consumption as well as for sale. Other domestic duties included, sweeping the compound, washing and food processing (pounding and winnowing). There is sharing of domestic tasks like pounding and washing among women of the neighbourhood. In the case of higher class households, women hired other women to do the manual work, while they carry out income earning activities with higher returns like petty trading. This is similar to observations made by Burfisher and Horenstein (1985), in a Nigerian Tiv farm household where women were solely responsible for all the domestic work.

Women in Egypt do more than just domestic work. Together with men, they build their houses out of sunbaked mud bricks, build baking ovens and silos for grain storage. Even where houses are built of bricks and cement, women still work hand in hand with men, assisting in the carrying of bricks and cement (Beshara, 1987). The picture in East

Africa is the same; for example, Poley, J.K. (1991; unpublished), reported that East African women do all the food processing and cooking, fetching water, securing fire wood as well as caring for the children. This is further documented by Bulow and Sorensen (1988) writing on gender dynamics in contract tea farming in Kenya where women play essential roles in producing both cash and food crops while also taking most of the responsibility for family welfare.

The Chagga women of Kilimanjaro in Tanzania are involved in all domestic work with the assistance of children of both sexes up to the age of 12 years. Above 12 years of age only female children assist in the domestic work (Polomack, 1989). On the other hand, the Haya women of Bukoba, Tanzania do all the house work; in addition, one has to prepare food for her husband separate from that of the children. Haya men do not do any house work in pretence that they are busy with matters of greater significance (Swantz, 1985). Further studies in eight villages in Morogoro region in Tanzania indicated that women do practically all of the domestic work while assisted by daughters (Oomen-Myin, 1980).

It is therefore evident that women spend a large proportion of their time in activities related to family welfare. Women perform practically all domestic work with assistance of children. This fact is not however addressed to by most development projects (Burfisher and Horestein,

1985). Exclusion of this aspect in project planning may jeopardize project's success and or its sustainability because a substantial amount of women's time is already tied up in what they consider more crucial for survival of the family.

2.1.2 Division of labour in livestock husbandry

Livestock production activities are variable and include feeding, watering, grazing or tethering, cleaning of animal shed, milking and growing of fodder. This section will review on who does what and how much in developing countries.

In Thailand there are three major livestock production systems: integrated crops-livestock on small farms; intensive poultry rearing and ranching. Women are specifically concerned with rearing small ruminants and poultry while the care of cows and buffaloes is shared between men and women. Many women have demonstrated their expertise and skill in livestock production and provide their families with a major share of income (Natpracha, 1991).

In the case of Burkina Fasso, livestock are an integral part of the farming system and most households own cattle, sheep, goats and poultry. Small ruminants and poultry are owned by women but are cared for mainly by children, while cattle are herded by men, sons or contract

herders (Nagy *et al.* 1989).

In Egypt certain activities of livestock production like harvesting of fodder and taking the animals to the field are shared by men and women. Women also build pens for poultry from mud and thatch and its most likely that men build pens for larger animals. Milking and processing of milk to cheese and butter is females' work. They are also involved in the marketing of these products (Beshara, 1987). An example of labour division in livestock production in Malawi is illustrated by a stall-feeding livestock program where steers were introduced to small holder farmers. To start with recruitment to the project was different for males and females. Whereas males were recruited directly, females had to request for participation and or prove their capability. However, while in the programme management of steers was done by women and children of both sexes despite the ownership; this was partly because stall feeding is near home and therefore became women's and children's activity whether or not they are registered owners (Spring, 1986).

Studies in household labour allocation in an intensive crop/livestock farming systems in Western Kenya by Conelly *et al.* (1987), concluded that the burden of managing livestock fell heavily on women and to a lesser extent on female children. Women contributed 40 % of labour for the day to day care of livestock and 70 % of labour for

producing forage. Men and children contributed the remaining labour. Womens' activities included: milking, watering, cleaning the animal shed, making compost piles with the dung for later use, cutting and carrying forage, and cultivation of forage crops. The role of men and male children in the same study was to tether the animals in the compound, and during the dry season to herd them along the paths, at road sides and or in scattered patches of scrub bushes.

In Kilwa Masoko district, most households keep chickens, ducks, goats and cattle. Men are responsible for goats and cattle while females are responsible for chicken, and ducks (Feldstein, H.S. 1990; unpublished). Similarly in Bukoba in Tanzania, men are responsible for livestock in general including stall feeding, milking, taking them out and feeding the calves. Womens' role include cleaning the shed, spreading the manure on coffee and plantain farms and looking after the calves. The trend is some how different in Kilimanjaro (in comparison with Kilwa Masoko or Bukoba). The Chagga women and girls are involved with milking, shed cleaning, fodder harvesting and carrying it on the head to the animals which are zero grazed. They also supply water as well as bedding material to the animals. Men's role include cutting and chopping banana stems as well as fodder trees and transporting of fodder by car (Polomack, 1989 and researcher's personal experience). Establishment of fodder

is done jointly by men and women, male children assist their fathers, while female children assist their mothers.

From the literature review, it is concluded that livestock husbandry tasks are shared between men and women, but the extent of sharing varies from society to society. For example in Thailand and Egypt there is almost equal sharing. However in Malawi and Kenya the burden lies heavily on women while in Burkina Fasso the burden lies heavily on men. Thus there is no formula on the division of labour based on gender in livestock husbandry tasks, since it varies even within one country as observed in Kilimanjaro, Bukoba and Masoko in Tanzania . This agrees with the concept that division of labour is socially constructed and not sexually determined.

2.1.3 Division of labour in crop production

Agricultural production in developing countries is normally done by the whole household, which include males, females, children and dependants. Occasionally hired labour is involved; but in resource poor families, there is dependency on labour exchanges or cooperative activities (Feldstein and Poats, 1989).

A study on the sex roles on the Nigerian Tiv farm household concluded that both men and women have major roles in the crop production activities but these roles are sharply differentiated by sex and seldom overlap. Women

have a dominant role in yam, sorghum, cow peas and maize which are both food and cash crops. On the other hand, men provide more labour on millet and melons which are also food as well as cash crops. Both sexes contribute about equally to rice, cassava, and benniseed which are also both cash and food crops. Thus, the criteria for this division is not clear. Activity wise, men are concerned with cultivation and preparation of mounds for planting while women have major roles in planting, weeding, harvesting, processing and storage (Burfisher and Horestein, 1985). A study on household labour allocation and the sexual division of labour in a Hausa Moslem village in Northern Nigeria by Longhurst (1985) made very interesting observations; that Hausa women do not participate widely in farm tasks, except in harvesting of cotton and groundnuts. However they participate in farm work inside the compound due to the moslem culture of seclusion. On the whole women do not own land. Of the 101 women sampled only 5 cultivated land; out of these, three rented the land and two owned it either through purchase or inheritance. Men are involved in food crop (sorghum and millet) and cash crop (groundnuts and cotton) cultivation. However this takes only 60 percent of the time, the rest is spent on off-farm activities. Similar studies by the same researcher in Sierra Leone and Gambia, concluded that both men and women play equal roles in agriculture. However, fruits and vegetables are

collected from the wild by women and children inorder to complement and diversify the diet (Longhurst, 1985).

A study on Women's contribution to farming systems and household income in Zambia was conducted by Due and Mudenda (1982) on 112 families living in the rural areas and 30 families living in the market areas. Females were found to contribute more to agricultural production than males; while females spent a mean of 8.5hr/per day, males spent 7.4 hrs/day in agricultural work during the farming season. This is equivalent of 53.5 and 46.5 % for females and males respectively.

In Egypt, a moslem society like the Hausa in Nigeria production relations were quite different. Women played a significant role in agriculture, their main activities being planting, weeding, hand removal of pests, harvesting, processing and retail selling of fruits and vegetables. Males' role in Egypt is mainly cultivation and assisting in harvesting. They also contribute a larger share of the marketing labour (Beshara, 1987).

In certain areas in Tanzania men control cash crops while females control the production of food crops. For example in Bukoba, men control coffee and banana fields while women take care of beans, maize, bambara nuts, yams and potatoes. However control does not imply doing the actual work, because in many households women frequently worked on the coffee and banana plantations. Older girls

who were not in school help their mothers (Swantz, 1985). Similarly, in Kilimanjaro, the Chagga culture was that coffee management is men's business while banana and bean production is women's business; and men are forbidden by taboo to touch the food crops except when they were ready for eating (Swantz, 1985). In practice, however females do all the activities involved in the production of both cash and food crops including pruning of coffee (a predominantly males role) especially when men are absent from the farm. Children participation on the farm partially compensate for the lack or little involvement of men. The daughters do not normally leave the household until they are married, and their workload match that of their mothers. Men involvement on the farm activities is variable because some are involved in off farm activities like beer brewing, petty business and formal employment. Men working outside and earning enough cash could afford to hire labour, and this compensated for their absence.

Thus, in Chaggaland it is believed that if a coffe/banana plot is poorly cultivated or infertile, the woman is considered to be lazy. A lazy woman means the failure of the family, ruin, shame and decline of the whole family. On the other hand a hard working woman is the guarantee to the success and prosperity of the whole family (Polomack, 1989 and researcher's personal experience). Despite all this coffee sale is under males control, while

women are involved with sales of excess food crops. This was a deliberate arrangement to keep away women from tasks that would elevate them above the authority of men (Swantz, 1985 and researcher's personal experience).

Also in Tanzania, studies by Due and Anandajayasekaram (1982) in contrasting farming systems in Morogoro region found out that there was a clear division of labour in agriculture in Kilosa district. In the same district, men were found to put more labour in all major crops except beans and rice. Percentage wise, females contributed 48 % of labour for maize production, 67 % for rice and 59 % for beans. The allocation for sunflower, sorghum and cotton were approximately 40 %.

It is concluded that there is division of labour in crop production, whose nature and extent varies from one society to another. Thus, as a social construct division of labour is mutable and responsive to other changes in the farming systems.

2.2 Sources of income

In many developing countries both men and women depend on agriculture including livestock for subsistence. However in most cases, this is not adequate due to either seasonality, unfavourable weather conditions and or scarcity of factors of production. Therefore there is an involvement in off-farm small scale enterprises which

differ from society to society and males to females. Some of these enterprises are outlined below.

Brewing of local beer from cereals, cereal by products, fruits or honey is done by women in most societies. This was observed in Botswana by Baker and Feldstein (1989), Burkina Fasso by Nagy *et al.* (1989) and in Masoko district-Tanzania by Feldstein, H.S. (1990; unpublished). In addition, Oomen-myin (1980) and Lassalle, T. and Marquet, B. (1991; unpublished) observed in Morogoro district that women brew from cereals and cereal byproducts while men brew from fruits. However local beer *mbege* brewing in Kilimanjaro is mainly men's activity (researcher's own observation). Women are free to use the cash from beer sales on themselves, but in most cases they use it for family maintenance. Men as well use the cash for family expenditure and for status maintanance activities. Local beer is also used for payment of service rendered on the farm in some societies.

Processing of food for sale is most important as income earning activity for the secluded Hausa tribe of Nigeria; nearly all midday meals and a small proportion of evening and morning meals are purchased (Longhurst, 1985). Also young women sell cooked food at the market, on the streets and at *pombe* shops in Mgeta, Morogoro (Lassalle, T. and Marquet, B. 1991; unpublished).

In Egypt, rural women take part in many cottage

industries and small scale manufacturing. This include; cheese and butter making, spinning, weaving and dyeing of clothes; making of clay products, making of sun-baked mud bricks and weaving of baskets and different products from palm leaves (Beshara, 1987).

Women of Naspur in India have resolved to lace making due to scarcity of land, as a source of income for home consumption. As a result men are able to free themselves from productive work altogether to become lace agents, traders, hawkers and exporters. However the poor christian women who are free to work outside the house are engaged in brick making and as hired labour (Mies, 1982).

Trading of agricultural and non-agricultural produce is practised by both gender. For example, in Egypt, women mostly monopolise trade in butter, cheese and poultry and most of the retail selling of vegetables, and fruits in villages and as street vendors. However men monopolize the market in big towns like in the weekly market of the big town of Abu Kebir, men constitute 83 % and women 17 % of all vendors (Beshara, 1987).

Similarly, Rwambali (1990) found that only 11.3 percent of sampled women in villages in Morogoro-Tanzania were engaged in retailing of sugar, salt, kerosene and *khanga* (women wrappers). This matches closely with the findings in Mgeta-Morogoro by Lassalle, T. and Marquet, B. (1991; unpublished), that retailing of external products

like sugar, salt, cigarettes is mostly done by young men.

It can therefore be concluded from this review that more women in various societies than men have turned to the informal sector as a result of growing pressure on women to become increasingly responsible for their family. A similar conclusion has been reached by Saito and Weidemann (1990).

2.3 Decision making

The pattern of decision making varies from one society to the other. On one extreme we have one decision maker, who is more or less a dictator; whose word is final. On the other extreme decision is arrived at after consultations between family members, which may include husband, wife and even in laws; while in between there is a joint decision between spouses. Occasionally household members make independent decisions on different aspects of the farm either directly or indirectly. Thus it is possible to find households where men, women and children have wholly separate spheres of decision making affecting production and income expenditure.

For example, in Columbia, women influence production decisions through their part in managing consumption. They have significant influence on what food stuff should be eaten and thus influence indirectly what should be planted. In addition they influence decision making in resource allocation indirectly by insisting on certain resources of

cash to be devoted to specific areas eg. on children education or on medical care. In the same country, decision on the management of the farm is made by consultation and negotiations including bargaining between spouses and sometimes involving extended family members (Ashby, 1989).

A series of interviews on gender roles in decision making in Botswana showed that decision roles vary in different tasks. For example in male headed households men has major say on time to start ploughing and planting and on deciding on whether draft animals are fit. Women have major say on the amount of seeds to plant and on weeding. Men and women jointly decide on the use of children for cropping activities. Children play an insignificant role in decision making (Baker and Feldestein, 1989).

Studies in Zambia (Due and Mudenda, 1982 and Phiri, E.C. 1990; unpublished) arrived at the following conclusions; decision on crops to be grown is mainly done by men, decision on the sale of farm produce is done jointly between men and women in most cases, followed by men alone and lastly by women alone. Decision on the expenditure of males income is made jointly between spouses in most cases, followed by men alone and lastly by women alone. On the expenditure of females income, joint decisions ranked first, followed by women alone and thirdly by men alone.

In Burkina Fasso, the choice of land to grow a

particular crop was determined by land quality and the distance from the compound. As such maize was grown near the compound where the soil was moist and more fertile while millet was grown on the poorer soils farther away from the compound. The prevailing market price determined the particular crop to be grown in larger quantities (Nagy *et al*. (1989).

Decision making in Tanzania depends on heritage (matrilineal or patrilineal). In patrilineal societies where women are accustomed to subordination, they play very little role in decision making. For example in Igunga district it was observed that in 65 and 91 % of sampled households men made all decisions concerning expenditure of income from farm produce and livestock sales respectively. Only in nine percent of households did women make decisions. In addition women were rarely found in village councils; the decision making body of the village (Mung'ong'o et al. 1990).

Lijongwa (1981), reported that in Malinyi Morogoro District; women decided on what crop to grow inorder to feed and maintain the family. In this society men were rarely involved in agriculture.

However, Due and Anandajayasekeram (1982) observed that in Kilosa district, husbands and wives jointly made decisions on crops to be grown in 83 % of the households interviewed while in Morogoro district it was 85 %.

From the above review it can be concluded that the form of decision making in a household cannot be assumed, that the household is not always a single decision making unit, and that certain decision roles are indirect. Therefore any project intervention must be conscious of these facts and take them in to consideration during planning and implimentation to ensure success and sustainability.

2.4 Gender roles in matrilineal societies

This section defines matriliny, outlines general characteristics, cites examples of matrilineal societies outside and within Tanzania, elaborates on the significance of such systems and describes a few causes of breakdown or weakening of matriliny in the modern world.

Matriliny is a system of inheritance and obligations revolving around the niece-uncle and nephew relationships rather than around the father-children relationship as in patrilineal societies (Stamp, 1990). In these societies property is owned by women. Household economics are controlled by the wife who is also the custodian of all the household income which enables her to make household decisions. This leaves men much free time to venture outside the community for experience and income (Bolin, 1990). Daughters are considered more important than boys because they inherit family property and carry the name of

the lineage. This contrasts with patrilineal societies where inheritance patterns give preference to male offspring and the family name goes through the male line.

Examples of matrilineal societies are Quenchua Indians of Peru and Minangkabou of West Sumatra (Bolin, 1990). A closer observation of the Quenchua tribe revealed that women made many important decisions, and a wife could critically influence her husbands views. Women authority increased with age and they hold important social and ceremonial roles. In the case of Minangkabau, the largest matrilineal society in the world (Bolin, 1990); the women are responsible for all decisions regarding family economics. They manage and control the produce of the land, proceeds from the market or cottage industries. The children remain members of the mother clan for life and carry it's name. All property stay within the lineage and is handled down from mother to daughter.

Matrilineal societies in Tanzania, include Zaramo, Kwere, Rufiji, Luguru, Kutu, Sagara, Vidunda, Ngulu, Zigua, Makua, Makonde and Mwera (Beidelman, 1967; Brain 1962, Brain, 1975; Swantz, 1985). In these societies the husband is nothing, so to speak, but a connection by marriage; he is his childrens father, but not related to them, in fact he belongs to a different clan. The maternal uncle has the control over the children of his sister. The husband lives at the house of the wife's parents or builds his own close

beside it and works for his inlaws. There is sex specificity of tasks. However the matrilineal principles of property ownership and control of offspring provide women with power and independence vis-a-vis their husbands. This leads to high divorce rates because women can secure divorce and remarry very easily. Furthermore, school girls from matrilineal families were found to be more assertive and more daring in terms of venturing in mainly male-dominated fields (Brock-Utne and Possi, 1990). These matrilineal characteristics are economic drawbacks, because keeping the husband in a subservient position on the woman's family side reduces his economic dynamism. Consequently, a man sees no point of investing his time and labour in an area where he is not secure (Wembah-Rashid, 1978). In any case this fits very well with the description of the majority of peasant women in Tanzania in patrilineal societies.

Ignorance of matrilineal principles is likely to lead to difficulties during implementation of development projects. For example if the process of development of ancestral land like growing of trees is assigned to male heads of the family they may not be very eager to do so because they do not feel much secure on the land which belongs to the wife's clan. Also, since meetings are attended by men mainly decision on important issues should not normally be requested during meetings before the men

have had a chance to consult with their wives, who play a significant role in decision making as individuals and jointly with husbands. Consequently, efforts should be made by project planners to identify and maintain the traditional pattern of gender responsibilities in order to avoid social strain which may lead to project failure.

Matrilineal characteristics have weakened in some of the mentioned tribes in Tanzania due to a number of reasons. Firstly, colonialization which brought about cash economy, education and religion, to which men had more access than women. The introduction of cash economy gave men an instrument of power over women who were not familiar in the same way with the use of money. This together with educational advantage given to men reduced women's possibilities of making use of the modern innovations. The emergence of Islam with it's attitude towards women tranformed matrilineal practices to patrilineal or bilineal ones. For example the Rufijis now count their descent from the side of the father, and the once open yards became enclosed which together with the black outfit or *baibui* kept women away from the public arena (Swantz, 1985). Also the church's negative attitude towards high divorce rates which prevailed in matrilineal societies (Brain, 1969) believed that patriach relations were correct basis for family stability thus went forth to encourage patriach practices (Hugo, 1973). There is evidence that certain

Donor agencies e.g. the World Bank played an active role in suppressing matriliny. This is well elaborated by using the example of the World Bank's Lilongwe Land Development Programme in Malawi (Stamp, 1990).

The extent of weakening of the matrilineal characteristics vary from one society to another. Although men may appear to be dominant in matrilineal systems, studies reveal a greater authority for women and more control over communal assets than in patrilineal societies (Stamp, 1990).

2.5 Extension service in relation to gender

Agricultural production in developing countries is done by men and women. There is division of labour such that certain tasks are done by men while others are done by women, while some tasks may be shared between men and women. In addition, it has been observed that women are involved in decision making either alone or in consultation with husbands (Lijongwa, 1981; Due and Anandajayasekeram, 1982; Due and Mudenda, 1982; Weidemann, 1987; Feldestein and Baker, 1989; Ashby, 1990). The role of women in agriculture is becoming more important as men turn to higher paid jobs. This leaves all the farm work to women and children. Further more, women have a key mediating role in the household welfare and nutrition (Gabriel, 1989).

Despite this, in many of these countries women have

limited access to innovation, training and other basic resources that could facilitate their tasks and increase their productivity. For example, Rwambali (1990) in his study of Women and Agricultural Extension in Morogoro district observed that 45.4 % of women did not get information on inputs at all and that only 33, 35, 33, and one percent had used improved seeds, insecticides, storage pesticides and fertilizers respectively. Also Wambura (1992) working in the same district observed that women appeared to have received untimely extension advice due to a number of factors including inadequate number of extension agents and unreliable transport for the VEO. Furthermore, Weidemann (1987) identified the factors that limited women access to extension as: inability to travel to extension centers, lack of land, limited income to purchase recommended inputs, inconvenient scheduling of demonstrations and meetings or locations, gender bias in extension staffing, lack of improved technology on traditional food crops grown by women, lower literacy rate and political structure that favour male farmers.

In view of the above; womens' sources of information remained to be husbands and neighbours rather than extension agents (Wambura, 1992). However the effectiveness of husbands as sources of information have been refuted by Weidemann (1987), Van Den Ban and Hawkins (1988) and Gabriel (1989) who observed that the trickle down of

information · from men to women has been impracticable.

Therefore there is an urgent need to include both men and women more adequately in rural extension activities. This requires rural extension organization to be more aware of gender roles in farming systems so as to focus their advice and recommendations most appropriately. In this connection; Saito and Weidemann (1990) gave the following suggestions: a concerted effort to increase the number of female extension agents, training of male extension agents to work with both male and female farmers and use of contact farmers of both gender. Furthermore, they suggested that monitoring and evaluation should include gender disagreggated indicators to better assess the impact of extension on both men and women farmers.

CHAPTER 3: MATERIALS AND METHODS

This chapter outlines the methodology of the study. It includes the description of the area, research design, population and sampling procedures, instrumentation, data collection and statistical analysis. The mode of result presentation is also included.

3.1 Description of the study area

The study was conducted in Tchenzema ward in Upper Mgeta on the Western slopes of the Uluguru mountains in Morogoro region. Upper Mgeta lies between the altitude of 1400 and 2000 m above sea level and enjoys a temperate like climate with a bimodal rainfall pattern. October to December is the short rain season while March to May is the long rain season. Rainfall ranges from 1000-2000 mm per annum depending on the altitude. The driest season is from July to August which is at the same time the coolest season. Although the study area is only 45 kms from Morogoro town it takes about 2 hours by car and up to 4 hours by a lorry because of the difficult terrain and bad road condition, which worsens during the rainy season.

3.2 Research design

The appropriate design of the study is a longitudinal survey, which would detect relationships over a long period

of time and thus give a true picture of the situation. However due to time limitation a cross sectional design was adopted to get quantitative information, although according to Babbie (1973) and Bailey (1978) this method is suitable for a descriptive study as well as determination of relationships between variables.

3.3 Population and sampling procedures

The target population was farmers disaggregated by gender in Tchenzema ward. This ward consists of five villages namely; Ng'ungulu, Tchenzema, Nyandira, Kibuko and Mwarazi. Due to limited resources a purposive sampling was done to select three villages on the basis of population size. Kibuko and Mwarazi have the same population size so have Nyandira and Tchenzema. The village selected were Kibuko, Ng'ungulu and Nyandira. The difference in population size was considered by proportional allocation during sampling (Table 1).

The sampling frame was constructed by the researcher with the assistance of the village council leadership and village registers. A ten cell leader was visited by the researcher together with the respective village chairman, and requested to list the names of his members who are full time farmers and living as couples. These names were written on small pieces of paper which were folded and then shuffled. Three pieces of paper were picked out randomly

one at a time after each shaffling.

Table 1. Population and sample sizes per village

Village	population size	Selected farmers Males	Females	Total	%
Kibuko	1,500	25	25	50	3.33
Ng'ungulu	1,800	30	30	60	3.33
Nyandira	2,500	45	45	90	3.6
Total	5,800	100	100	200	3.4

These represented the names of husband and wife sets to be interviewed for that particular ten cell. The same process was repeated until the required sample size for that particular village was attained.

3.4 Instrumentation and data collection

3.4.1 Preparation and pre-testing of the research instrument.

A structured questionnaire was developed from informal and group interviews and observations of what was happening in the homes, fields, market and during village meetings. It was composed of both open and close ended

questions. This instrument (Appendix 1) was used to collect information on:

1 Division of labour: labour contribution by gender including children (14 years old and above) in:
   (a) domestic work;
   (b) livestock production;
   (c) cash crop production, processing and marketing;
   (d) food crop production, processing and storage.
2 Sources of income by gender.
3 Access to family income accruing from various sources.
4 Decision making by gender in the following aspects:
   (a) production process;
   (b) resource allocation and disposal of produce
   (c) income expenditure
5 Extension method preference by gender

The questionnaire was translated to Swahili (the Tanzania national language) for convenience of communication. The validity of the instrument was ensured by evaluation and pre-testing. It was evaluated by seven members of academic staff from the department of Agricultural Education and Extension and Rural Economy. Their opinions on the validity of the questions as related to the objectives of the research were used to adjust the

questions. After modification it was administered (pre-tested) to ten farmers aggregated by gender from the area who were excluded from the final sample. The aim of the above was to find out whether the questionnaire measured what it purports to measure. Similarly their responses were used to adjust the questions. This ensured the validity of the instrument.

Reliability of the research was ensured by having a reasonably large sample size, in addition the enumerators were carefully selected and trained. Furthermore, the researcher worked constantly with the enumerators, the questionnaires were perused at the end of a day's work and enumerators advised accordingly.

3.4.2 Data collection

Primary data were collected by using the questionnaire. The research was conducted from October to January 1992 with a break in mid December due to the onset of short rains. During this season it was impossible to go on with the research because all farmers were busy in the fields. Two enumerators from the area assisted in the data collection after an initial training. This enhanced the interviewing process because the farmers identified themselves with the enumerators and immediately the ice was broken and interaction initiated. Individual farmers were interviewed in their homes after an initial appointment

through the ten cell leader who also introduced the researcher and enumerators to all the farmers to be interviewed. The objectives of the study was explained to each farmer which made them willing to cooperate. The husband and wife were interviewed separately. However in cases where it was not possible to interview both husband and wife, males and females from different households were interviewed in order to balance the number of male and female respondents.

Secondary data were obtained from reports and other documents of previous studies conducted in the area.

3.5 Data analysis and presentation

Data from the completed questionnaires were coded by using a coding key and compiled using a D Base computer programme. Later it was analysed by using programmes from the Statistical Package for the Social Sciences (SPSS) at the Sokoine University of Agriculture. Using the SPSS programme, division of labour was analysed by frequency tables, and extension method preferred by gender was analysed by cross tabulation. However Chi-square test values were used to test the hypotheses stated. These were rejected or accepted on the basis of the Chi-square values computed for the dependency between the selected variables. A significance level of 0.05 was selected as the criterion for determining a significant dependency.

Results on division of labour are presented in graphical form. Sources of income, custodian of family income and decision making results are presented in cross tabulations and tested for significant dependency by Chi-square test for dependency between variables. Extension method preferred by gender is presented in tabular form.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter presents the results of the study. It is divided into six sections namely; sample characteristics, labour division by gender and age categories in the household activities, sources of income by gender, accessibility to family income by gender, decision making by gender and extension services in relation to gender. Discussion is also covered under this chapter.

4.1 Sample characteristics

4.1.1 Age

Two hundred full time farmers living as couples including an equal number of both gender from Tchenzema ward were interviewed. Their age ranged from 15-75 years old. The respondents age distribution by gender is shown on Table 2. About half (49.5 %) of the respondents were less than 35 years old of which 43 % were men and 57 % were women. Fourty percent of the respondents were 36-55 years old of whom men and women were equally represented. Just over 10 % of the respondents were above 55 years old, of whom 86 % were men and 14 % were women. The mean age for all respondents was 37 years, that for men was 40 years while that for women was 34 years. Generally, therefore, female respondents were younger than their male counterparts; this could imply that female married at

younger age than males. It could also account for women being more active in income generating activities (section 4.3), which gives them an economic power. Being a matrilineal society the couple lives with the parents of the wife. The combination of womens' economic power, and the couple's staying with wife's parent make women less dependent on men which weakens marital ties. This has contributed to the high divorce rates in the area, and has been viewed (especially by the church) as one of the setbacks of matriliny (Brain, 1969; Stamp, 1990).

4.1.2 Education level

The results show that 10 % of the respondents were illiterate. This corresponds with the national literacy rate of 90 % (Wambura, 1992). Of the illiterates, 47 % were women while 53 % were men. This is an interesting finding since in most societies women are reported to be more represented in the illiterate fraction than men. The lower rate of female illiteracy could be explained by their greater participation in adult education program (70% versus 30% men) see Table 2. In addition women were observed to be regular church goers and more business minded (section 4.3) thus they have more access to information on education. Only one percent of the respondents had post primary education, these were men. One of them had attended a short course in book keeping and was

the cashier of Twikinde farmers association.

Table 2. Personal characteristics of respondents

Character		Respondents					
		Male		Female		Total	
		N	%	N	%	N	%
Age	15 - 35	43	43	56	57	99	49.5
	36 - 55	39	49	41	51	80	40.0
	55+	18	86	3	14	21	10.5
Total		100	50	100	50	200	100
Level of formal education							
	Illiterate	10	53	9	47	19	10.0
	Primary education	76	52	71	48	147	77.0
	Adult education	7	30	16	70	23	12.0
	Post primary	2	100	-	-	2	1.0
Total		95	50	96	50	191*	100

Source: Survey data, (1992).

* Nine respondents did not indicate their level of education.

4.1.3 Membership in village organizations

Table 3 shows that half of the respondents were Chama Cha Mapinduzi members, of which 62 % were men and 38 % were women. Only 22 % women belonged to Umoja wa Wanawake wa Tanzania (UWT). Of the six percent Twikinde members; 75 % were men and 25 % were women. The percent of Twikinde membership was very low. Respondents were asked for the reason for not being a member. The reasons include lack of

interest (41 %), not informed (23 %) enrolment closed (16 %) and various non specific reasons (20 %). About 10 % of respondents were Primary Cooperative society members of whom 68 % were men and 32 % were women.

About 16 % of the respondents held different leadership positions in their respective village councils; of these 84 % were men while only 16 % were women. These positions included chairman, secretary, treasurer and committee membership of the village council. Women were just committee members.

Female participation in the village organizations was relatively much lower than that of males' with the exception of UWT which is exclusively for women. Possible reasons are that women are tied up with their domestic as well as farming roles. As it appears in a later section women perform most of domestic work, about half of the farm work and also are involved in off-farm income generating activities. Thus they lack time to attend to these organizations. Secondly, attendance to meetings was a public domain and thus left to the public relation officer of the family who happened to be the man. Women belonged to the domestic domain of home and family care. The small representation of women in the village organizations meant that they cannot directly influence decisions on village community development activities. Similar observations were made by Oomen-Myin (1980) working in the same region. It is

important to mention that some respondents belonged to more than one organizations.

Table 3. Membership in village organizations

Organization	Male		Female		Total	
	N	%	N	%	N	%
CCM	62	62	38	38	100	50.0
UWT	-	-	22	100	22	22.0
Village govt.	26	84	5	16	31	15.5
Primary coop.	13	68	6	32	19	9.5
Twikinde assoc.	9	75	3	25	12	6.0

Source: Survey data, (1992).

4.2 Division of labour by gender and age categories in household activities.

4.2.1 Labour Contribution by Gender and Age Categories to Domestic Work

Domestic tasks are defined on section 1.7. All domestic tasks are mostly done by females, with the exception of fire wood collection which is mostly done by men, and purchasing of domestic items like salt and kerosine which is more or less equally shared between

family members. These results are shown in Fig. 1. Thus females of all ages contribute more labour to food preparation and cooking, cleaning the homestead, washing dishes, collecting water, and washing clothes than males. Fuel wood is fetched from a long distance due to the dwindling of natural forest reserves, a task which is laborious and time consuming. Kajembe (1988) also observed that the role of fuel wood collection is being taken over by men when distance to the source increases.

These results agree to a large extent with findings of Lijongwa (1981) in her study of women of sub Saharan Africa; Due and Mudenda (1982) working in Zambia; Burfisher and Horestein (1985) working in a Tiv farm household in Nigeria, Bulow and Sorensen (1988) documenting on gender dynamics in contract tea farming in Kenya; Polomack (1989) in Kilimanjaro region and Poley, J.K. (1991; unpublished) documenting on East African women that women did all domestic work including fuel wood. Male children contributed more labour to fuel wood than female children. It is interesting to note that children worked in similar tasks like the parents of similar gender. This is due to the socialization process which has also been reported by Keregero, M.M. (1991; unpublished), that sons are trained to behave like fathers and daughters like mothers. For any change to occur towards alleviation of womens' burden in domestic work the tradition of men not being involved in

house work has to be tackled may be by gender sensitization campaigns as well as education. This was also suggested by Rwambali (1990).

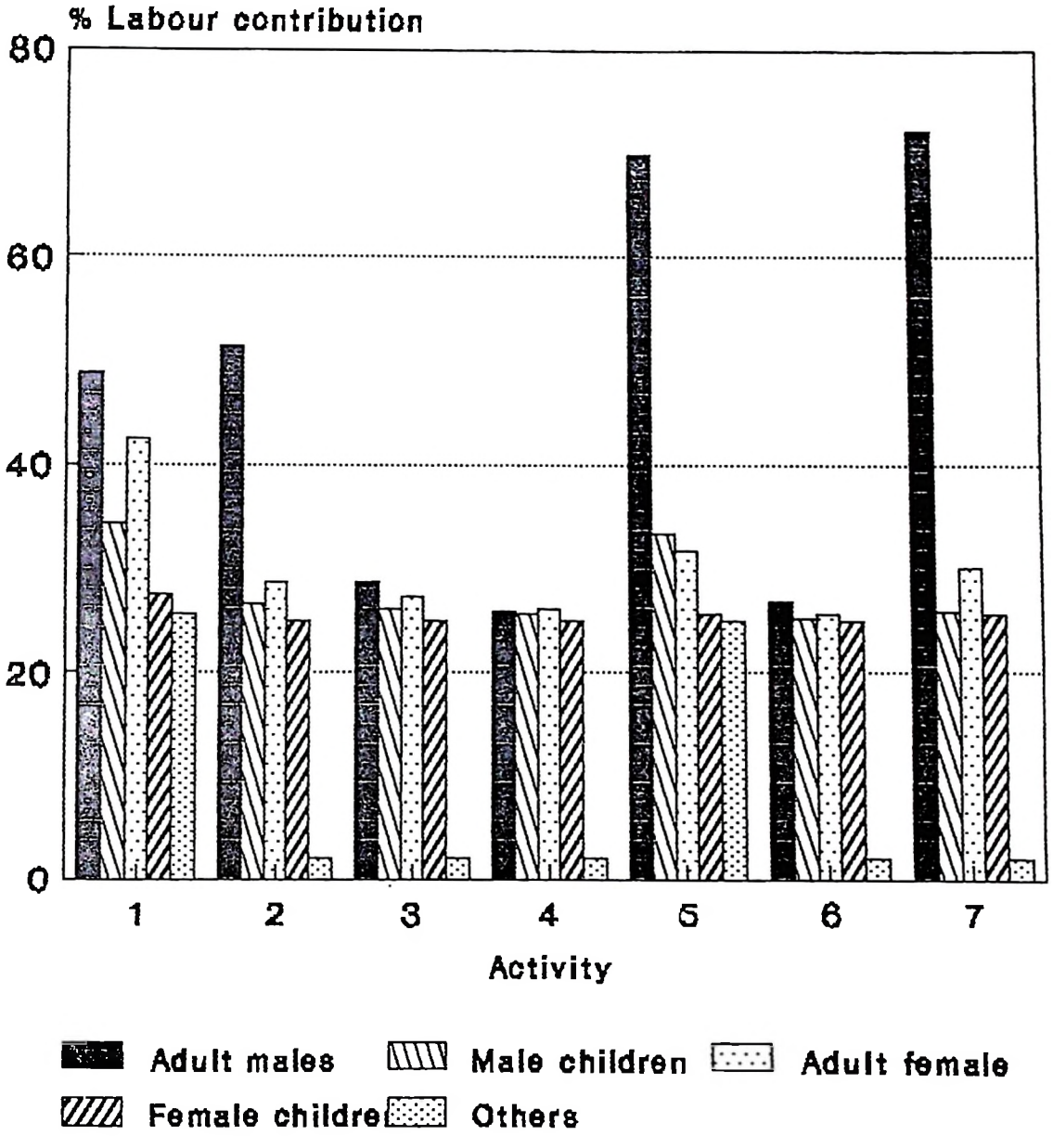
4.2.2 Labour contribution by gender and age categories to livestock husbandry

The main types of livestock reared were pigs as shown by 63 % of the respondents. This finding is similar to the findings by Paul, (1988) in his description of the farming systems of the area. Local chicken are reared by 25 % of the respondents, while local goats are reared by eight percent of the respondents. Exotic dairy goats and chicken had recently been introduced to the area and ducks were also kept to a small extent. Livestock husbandry tasks are enumerated under section 1.7.

Labour contribution by gender to livestock husbandry was slightly different from that observed in the domestic work (Fig. 2). Men contributed much more labour than women to feeding, health care, cleaning of animal shed and in marketing. Male children as well contributed more labour than female children to these tasks with the exception of marketing. However labour contribution to grazing or tethering, milking and pasture establishment was more or less balanced between gender of all ages.

It is concluded that males contributed slightly more labour to livestock husbandry than females. This would tend to contradict the findings by other researchers; namely, Swantz (1985); Spring (1986); Conelly et al (1987); Polomack (1989); Beshara, (1987) and Natpracha (1991). This deviation could be attributed to the matrilineal lineage of

the Luguru. In addition the women had to devide their time between domestic work, livestock production, crop production and off-farm income source activities. Domestic work is mostly done by women; in addition, more women than men are engaged in off-farm income sources. This could also account for lower women participation in livestock production.



1=feed 2=health care 3=graze 4=milking
5=clean shed 6=pasture 7=marketing

Fig. 2 Division of labour: Livestock.

4.2.3 . Labour division in crop production

Results on the production of cash crops and food crops will be presented and discussed in this section separately; and summarised jointly.

4.2.3.1 Cash crops production

The dominant cash crops were legumes (mainly beans and peas) and vegetables. Beans was the most important cash crop and was grown by 58 % of the respondents of whom 45.5 % were men while 54.5 % were women. Peas ranged second, and was grown by 23 % of the respondents of whom 43 % were men while 57 % were women. The third crop was vegetables (cabbage, lettuce and leeks) and was grown by 18 % of the respondents of whom only 32 % were women and 68 % were men. More men grew vegetables than women. The most likely explanation is that the management of vegetables was more laborious and included fertilizer and pesticide applications which are considered quite technical and were mainly done by men (Fig. 3).

The tasks involved in cash crop production are defined in section 1.7. Males and females shared four tasks on more or less equal basis; these were cultivating, sowing, weeding and harvesting. Male and female children contributed more or less the same labour to these tasks. Fertilizer and pesticide application were unequally shared, with men contributing slightly more labour than women;

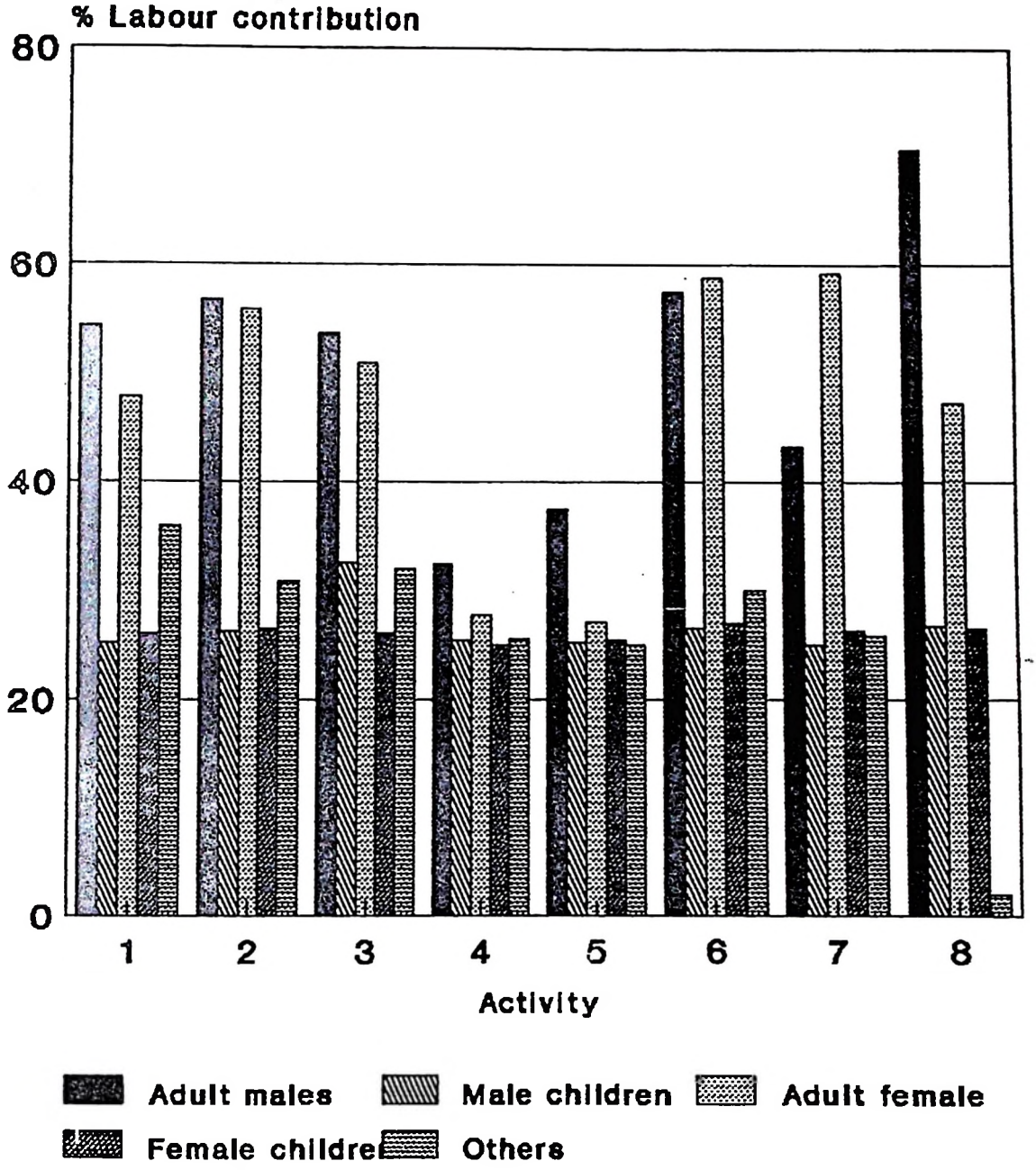
while male and female children's contributions were similar. These tasks were new innovations, and thus were applied only to a small exent. Processing and storage were predominantly womens' tasks (the main crop in question being beans), this could explain why more women than men grew beans. Marketing was predominantly mens' task. "Others" (hired labour and the traditional labour exchange known as "ubava") contributed considerably to all tasks except marketing where contribution was small. This was in terms of porterage of produce to the market.

4.2.3.2 Food crops production

The main food crops grown were maize, beans, and root crops (yams, potatoes and cassava). Maize was the most important food crop, as it was grown by 90 % of the respondents and was equally distributed between men and women. Beans was found to be both a cash crop and a food crop. The staple food of the area was mainly maize flour made in to stiff porridge and served either with beans or vegetables. Root crops (yams and cassava) acted as security or insurance against famine. They are consumed during the dry season, when maize was out of season or had failed. Normally production of maize was low and could not sustain the household to the next harvest.

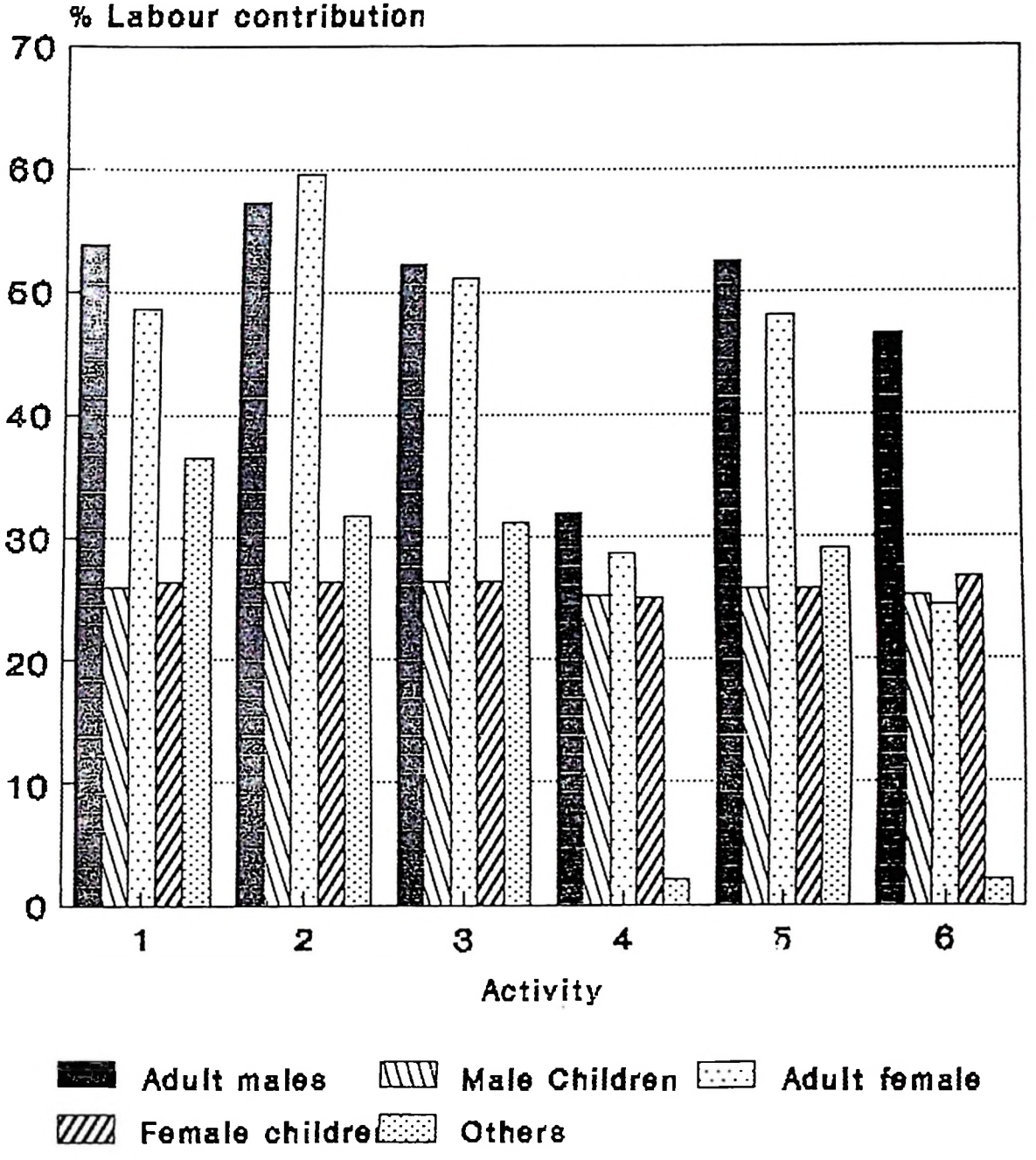
Inter-cropping is a common phenomenon in Tchenzema. In most cases cash crops are inter-cropped with food crops.

Therefore labour contribution by gender and age categories to food crops would be expected to follow the same pattern as observed in cash crop production. Fig. 4 confirms this expectation, that males and females shared the same tasks as above on more or less equal basis; except for processing and storage which were predominantly mens tasks. Male and female children contributed more or less equal labour to all tasks. "Others" (hired labour and "ubava") contributed considerable labour to all tasks except fertilizer application, processing and storage. Men contributed more labour to processing and storage of food crops because of the nature of the task. The main food crop maize, is stored on the house ceiling and the task of climbing up the ceiling is done by men; maize shelling is done at the time of processing in to flour and thus falls under food preparation and cooking (domestic task). Fertilizers are only applied to a limited extent, which is evident from the fewer number of farmers involved.



1-cultivate 2-sow 3-weed 4-fertilizer
5-pesticide 6-Harvest 7-process 8-mkt

Fig. 3 Division of labour: Cash crops.



1=cultivate 2=sow 3=weeding 4=fertilize
5=Harvest 6=process/storage.

Fig. 4 Division of labour: Food crops.

4.2.3.3 Summary of labour division in cash and food crop production

The main source of labour was the family. Traditional labour exchange between friends and neighbours commonly called "ubava" was frequently practised. This was usually at the peak of labour demand like during cultivation, sowing, weeding and harvesting. Normally at such occassions local beer was used as a token payment. Such a phenomenon has also been documented by Feldestein and Poats (1989) that resource poor families engage in labour exchange programs to secure the needed extra labour for which payment in cash is lacking. Hired labour was also employed by the families who could afford it. Extended family members also assisted.

There is sharing of tasks between males and females. As such there is no task specificity by gender in crop production, which agrees with Paul (1988) in his description of the farming system of the area; and Lassale, T. and Marquett. B. (1991; unpublished) working on the same area. Men and women of all ages shared all the agricultural tasks related to cash and food crop production. Although there were differences in the proportion of labour contribution by gender, these were remarkable in just a few tasks. For example women contributed more labour than men to processing and storage of cash crops (59 % compared to 43 %; while men contributed

more labour than women to storage of food crops (47 % men versus 25 % women) and marketing of cash crops (71 % men versus 47 % women). Male and female children labour contribution to crop production was more or less similar.

This is a unique labour division pattern and it disagrees with observations by Due and Anandajayasekeram (1982) working in Kilosa district; Due and Mudenda (1982) working in Zambia; Burfisher and Horenstein (1985) in their study of a Tiv farm household in Nigeria; Swantz (1985) in her study of Bukoba and Kilimanjaro (Tanzania); Beshara (1987) in Egypt and Polomack (1989) on her study of Kilimanjaro (Tanzania). These noted a clear cut division of labour by gender, with women contributing more labour than men. The most probable explanation for this state of affairs in Tchenzema is the matrilineal heritage of this society, which gives more power to women.

4.3 Sources of income by gender

Respondents were requested to indicate whether they were involved in the following income earning activities; brewing of local beer, petty business, crafts and hired labour. Sales of cash crops and livestock were included for comparison. The responses are shown on Table 4. Almost all respondents had more than one source of income.

Most respondents (97%) depended on agriculture for income, including equal numbers of men and women. About 65

% of respondents derived their income from sales of livestock and their products; of whom 53 % were men and 47 % were women. This could be a possible explanation for men's greater contribution to livestock husbandry than women's.

Supplimentary income was obtained from local beer brewing, petty bussiness, crafts and hired labour. Local beer brewing was the most important off-farm income source; this engaged 17 % of the respondents of which 44 % were men while 56 % were women.

Table 4. Distribution of respondents by income sources by gender*

	men		women		total	
Enterprise	N	%	N	%	N	%
cash crop sales	95	49.7	96	50.3	191	97.0
livestock sales	67	52.8	60	47.2	127	64.5
brewing	15	44.1	19	55.9	43	17.3
petty business	12	46.2	14	53.8	26	13.2
crafts	21	91.3	2	8.7	23	11.7
hired labour	10	47.6	11	52.4	21	10.7

* Some have multiple sources of income.

Source: Survey data, (1992).

Similar observations were made by Oomen - Myin (1980) in Morogoro district; Sorensen & Bullow (1988) in small holder tea production in Kenya; Baker and Feldstein (1989) in Botswana; Nagy *et al.* (1989) in Burkina Fasso; Feldstein (1990) in Masoko district; and Lassale and Marquet (1991) in Morogoro district that brewing of local beer is mainly done by women. This is mainly done to meet family obligations like medical expenses, food purchase or educational expenses. On the contrary, in Kilimanjaro local beer *mbege* brewing is predominantly a male's job.

The second most important off-farm income earning activity was petty business which included retailing of consumable goods like sugar, salt and flour; farm produce like fruits, vegetables and yams, and processed foods like pork, potatoes, yams and buns. These are sold on the market, along the streets and in addition, processed foods were sold at local beer shops. On market days processed food provided midday meals for most of the market participants who considered market day as day off from farm work. A similar phenomenon was observed in the Hausa tribe of Nigeria by Longhurst (1985) that the sale of processed food as midday meals was an important income earning activity for the women. In Tchenzema retailing of vegetables and fruits was done by females while their wholesale was done by males. Consumable external goods were retailed by young men while the sale of processed food was

mainly done by young women. As shown on Table 3; 54 % of women respondents as compared to 46 % men participated in petty business.

Crafts which included capentry, basket and mat making occupied 12 % of the respondents, of which 91 % were men and only nine percent were women. This was the only off-farm activity that was mainly done by men; because the dominant craft was capentry which is normally too taxing for women.

Hired labour occupied 11 % of the respondents and was more or less equally done by both men and women. Hired labour included the porterage of farm produce nicknamed 'cargo' to the market, which was normally done by men and paid labour on farm tasks like cultivation, sowing and weeding which were commonly done by men and women.

A null hypothesis was formulated and tested for significant dependency between gender and sources of income.

Null hypothesis 1: Sources of income were independent of gender.

Alternative hypothesis: Sources of income were dependant on gender.

The Chi-Square test for independence was used to test this hypothesis. The Chi-Square value was significant at 0.01 level of significance (Appendix 2). Therefore the null hypothesis was rejected in favour of the alternative one.

This meant that men and women of Tchenzema derived their income from different sources. More women than men brewed local beer for sale and did petty business; simultaneously more men than women secured income from crafts and livestock sales. Same number of men as women secured income from sale of agricultural produce and as hired labour.

Tchenzema women are more business oriented than men which could be as a result of financial pressure on them to support their families. Therefore they have turned to off-farm enterprises as a supplimentary source of income. Similar observations were made by Mies (1982), Beshara (1987), Saito and Weidemann (1990) that more women than men in various societies have turned to the informal sector as a result of growing pressure on them to become responsible for their families.

4.4 Custodian of family income

The respondents were asked to state the custodian of family income accruing from cash crop sales, surplus food sales, livestock and livestock product sales, small scale off-farm enterprises and hired labour. Four options were offered to choose from: myself, spouse, both, (husband and wife) and others. The responses are given on Table 5. From the table it is clear that family income was under the custody of both husband and wife jointly and separately; since women alone followed very closely to "both" while men

alone did not lag much behind either. "Others" in this case referred to banking. Therefore in four cases the family income was banked. Some of the reasons given by both men and women for men alone to rank last as custodian of family income were carelessness and drunken behaviour on their part.

Table 5. Custodian of family income by gender

Income source	Men	Women	Both	Others	Total
Cash crop	35	75	83	1	194
Surplus food	11	16	32	1	60
Off-farm	11	35	39	0	85
Livestock	26	46	61	2	145

Source: Survey data, (1992).

To test for a significant dependency of income custodian on gender a null hypothesis was formulated and tested. Chi-Square test for independency was used.

Null hypothesis 2: Custodian of family income was gender independent.

Alternative hypothesis: Custodian of family income was gender dependent.

The Chi-square value was not significant at 0.05

significance level (Appendix 3). Therefore the null hypothesis was accepted that custodian of family income is gender independent. Men and women were custodian and thus had access to family income. Although more women alone than men alone were custodian of family income it has not been proved significant by the chi-square test. To check whether there was discontent in the state of affairs, respondents were asked if they needed more access to family income. Responses are presented on Table 6.

Table 6. Demand for more access to family income by gender

	Men		Women		Total	
Response	N	%	N	%	N	%
Yes	7	22	25	78	32	17
No	93	59	65	41	158	83
	100	52.6	90	47.4	190	100

Source: Survey data, (1992).

The results show that majority of respondents were satisfied with the state of affairs; since 83 % of respondents did not need more access (majority of which were men) while only 17 % needed more access to family

income. Further probing proved that couples trusted each other and that the use of family finances was arrived at by negotiations between spouses before any expenditure was made.

It can be concluded that Tchenzema couples has worked out a system of handling their finances which was agreeable to both. The matrilineal lineage which gives women more power could be a possible explanation.

4.5 Decision making

This section gives an outline of decision making in the households of Tchenzema. Respondents were asked to state the one with the final say in the home in the production process, resource allocation, and income expenditure. Four options were given to choose from ("self"; "spouse"; "both" or "others"). Inorder to test for significant dependence of decision making on gender, null hypotheses were formulated and tested by using Chi-square test for independency. The column on "others" was excluded from the Chi-square calculations.

4.5.1 Decision making in the production process

The production process was broken in to five components: choice of cash crops and food crops to be grown, time to perform a particular task (eg land preparation, sowing or weeding), decision to adopt an innovation and choice of processing and storage method.

Responses are presented on Table 7. The table shows that most of the decisions were made by consensus between spouses in the home; except on the processing storage method in which case "others" took the lead. Others in this case refered to weather and tradition of the Luguru. This meant that the choice of method of processing and storage of crops (mainly beans and maize) was made by weather and tradition. If it was sunny, beans were sun dried threshed and stored in big containers made of earth *mtungi*. Otherwise it was stored together with maize on the ceiling. From there it was gradually dried by the heat and simultaneously preserved by the smoke. Unfortunately smoke is not a good preservative for grains so spoilage by pests was enormous.

Table 7. Production process decision

Decision on:	Men	Women	Both	Others
cash crops grown	47	9	139	0
food crops grown	19	14	162	0
time for a task	38	10	147	0
adoption	84	8	100	3
processing method	4	5	75	91

Source: Survey data, (1992).

In three cases it was reported that decision on adoption of innovation was made by the extension officer. Men had ten times as much say on the adoption of innovation as women.

Chi-square test for independency was used to test for a significant dependency of production process decisions on gender.

Null hypothesis 3: Production decisions were independent of gender

Alternative hypothesis: Production decision were dependent on gender.

The Chi-square value was significant at 0.01 level of significance. Therefore the null hypothesis was rejected in favour of the alternative hypothesis (Appendix 4). Thus, decision making on the production process is gender dependent. Women alone played very little role in all items, in comparison men alone played a bigger role in all the items with the exception of the choice of the processing and storage method which was determined by weather and tradition. However consensus between spouses "both" took the lead in all the items except one. The fact that men decided on innovation adoption implied that men were more willing to experiment.

4.5.2 Decision on resource allocation and disposal of produce

The resources considered were land, labour and livestock. In addition, disposal of the produce was also included. Respondents were asked to state the individual with the final say in the mentioned items. The results are shown on Table 8. The results show that most of the items were decided upon by consensus between spouses. Men alone ranked second in all the items except the hiring of labour where they took the lead. Women had minor role in decision making in all the items. "Others" made some decision on market choice and field selection. Tchenzema had two markets to choose from Msewe and Lolo. Market choice depended on the price and distance. On the field selection, this depended on the characteristics of the field like fertility, closeness to the house, water source and the road. Thus vegetables were grown on fertile fields, near the house and water source and also close to the road for convenience of management and transport to the market.

Table 8. Resource allocation and disposal of farm produce.

Item	Men	Women	Both	Others
Field selection for a crop	53	7	125	8
Task allocation	39	8	147	0
Decision to hire labour	81	8	79	0
Field purchase decisions	65	9	90	0
Sale of surplus food	9	6	40	1
Market choice decision	30	10	91	45
Livestock purchase decision	64	6	115	1

Source: Survey data, (1992).

Chi-square test for independency was used to test for a significant dependency of resource allocation decision on gender.

Null hypothesis 4: Resource allocation decisions were independent of gender

Alternative hypothesis: Resource allocation decisions were gender dependent

The Chi-square value was significant at 0.01 level of significance (Appendix 5). Therefore the null hypothesis was rejected in favour of the alternative one. Thus resource allocation decisions were gender dependent. Selection of field, job allocation, purchase of extra

field, purchase of livestock and market choice decisions were made by consensus between spouses in most cases and to a lesser extent by men. Women on the other hand had very little say on these items. Decisions to hire labour was made by men in most cases followed by the consensus between spouses; and women still played a minor role. In addition the distance to the market and the current price determined the market choice. Normally food grown was just enough for consumption, only small quantities were sold to exchange for essential items like salt, soap and cooking oil. This is confirmed by the small number of respondents making decisions on this item.

4.5.3 Decisions on income expenditure

Respondents were asked to indicate the individual responsible for purchase of the different items in the household. Purchase of of domestic items included furniture (tables, chairs beds), purchase of clothes like school uniforms, blankets; purchase of food items like sugar, salt, cooking oil, purchase of utensils like saucepans, spoons, plates; purchase of luxury items like radio, and house repairs. Results are presented on Table 9.

Men alone had as much say as the consensus between spouses on the purchase of furniture; while women alone had very little say. Purchase of clothes was made by consensus between spouses in twice as many cases as by men alone.

Women alone had very little say in this also.

Table 9. Decision on income expenditure

Expenditure on:	Men	Women	Both
domestic items	93	7	94
clothes	68	7	118
food items	30	110*	53
utensils	30	103*	60
luxurious items	107*	3	74
house repairs	120*	8	63

* Due to overlap.

Source: Survey data, (1992).

However, purchase of food items and utensils were womens' responsibilities. Women alone had almost twice as many say as "both" and more than three times as many as men alone. On the other hand, house repairs and purchase of luxurious items were mens' responsibilities seconded by the consesus between spouses.

Chi square test for independency of decision on purchase of household items on gender was performed.

Null hypothesis 5: Decision on income expenditure was gender independent.

Alternative hypothesis: Decision on income expenditure was gender dependent.

Chi-square value was significant at 0.01 level of significance (Appendix 6). Therefore the null hypothesis was rejected in favour of the alternative hypothesis. This meant that decision on income expenditure was gender dependent. Thus in Tchenzema, men and women had different income destinations, the same has been documented by Feldstein *et al.* (1989).

In summary, production decisions were made by consensus between spouses in most cases, seconded by men alone and lastly women alone. Resource allocation decisions were made by consensus between spouses in all items but one, this was hire of labour; in which men alone made decision in slightly more incidences than both; women alone also had little say in this. However the decisions on income expenditure were equally divided between the three (Table 10).

The conclusions on decision making by gender in Tchenzema contradicts the findings by Lijongwa (1981) working in Malinyi in Tanzania; Burfisher and Horenstein (1985) working in Northern Nigeria, Mung'ong'o et al (1990) working in Igunga district-Tanzania and Phiri, E.C. (1990; unpublished) working in Zambia that men were the sole decision makers.

However they agree with Due and Anandajayasekaram

(1982) who observed that production decisions in Kilosa and Morogoro districts were made jointly between spouses and Due and Mudenda (1982) in Zambia that decision on the sale of farm produce was made jointly.

In addition, Nagy *et al.* (1989) working in Burkina Fasso also concluded that soil characteristics determined the crop to be grown; Ashby (1989) observed in Columbia that decisions on the management of the farm were made by consultation and negotiations among the house hold members; and Lassale, T. and Marquet, B. (1991; unpublished) working in Mgeta concluded that couples were the basic decision making unit.

Table 10. Summary on decision making by gender

Item	Rank of women	Rank of men	Rank of both (joint)
Production process (5 items)	third in all items	second in all items	first in all items
Resource allocation (7 items)	third in all items	first in one item & second in the rest	first in all items & second in one
Income expenditure (6 items)	first in two items & third in the rest	first in two items, second in two items & third in two items	first in in two items & second in the rest

Source: Survey data, (1992).

4.6 Extension service in relation to gender

This section covers partly the utility of the study by highlighting some of important elements of extension as perceived by the respondents. They include extension method preference by gender, felt extension problem, views on the accessibility of the VEO and strategies to improvement of quality of extension in the area.

4.6.1 Extension method preference by gender

Respondents were asked to indicate the extension method preferred. Five methods were given to choose from, and there was no limit to the number of methods that one could choose. The results are shown on Table 11.

The most popular extension method for both gender was demonstration plots (81 %) followed by VEO visits (80.5 %). The least preferred method was institutional training. Institutional traning was the least popular method because farmers are normally tied to their agricultural obligations and they can not afford to be away for a long time, unless it is in the off-season. It can be concluded that there was no gender variation in the extension method preferred. Since both men and women separately had the same order of preference.

Table 11. Extension method preference by gender

Method	males N	females N	Total N	%
Demo. plots	85	73	158	81.0
VEO visit	84	73	147	80.5
Group meeting	81	65	146	74.9
farmers exchange	76	65	141	72.3
Instit. training	74	57	131	67.2

Source: Survey data, (1992).

4.6.2 Respondents felt extension problems

Respondents were asked to state their most pressing extension problems. Table 12 gives the results. More than half had inputs availability as their most pressing problem. Inputs included fertilizers, pesticides and veterinary drugs. The second problem was availabilty of VEO. Only nine percent of the respondents did not express any felt problem while six percent couldn't specify the core of their problem.

Table 12. Expressed extension problems by gender

Problem	Males N	Males %	Females N	Females %	Total N	Total %
None	8	47.1	9	52.9	17	8.8
Inputs availability	56	54.9	46	45.1	102	52.6
VEO availability	29	49.2	30	50.8	59	30.4
Unreliable market	3	5.0	1	25.0	4	2.0
Low productivity	3	25.0	9	75.0	12	6.2

Source: Survey data, (1992).

From the above table it is evident that inorder to gain farmers' attention; any development project must address the problem of input supply first. The same was also observed by Lassalle and Mollel (1990). In their paper on "The Role of Professional Organizations in Farmers Oriented Research", they had identified two problems: input inavailability and unreliable market. Surprisingly, the market issue came last in this list of problems. The most likely explanation was that Twikinde had solved the market issue but had not been able to supply enough inputs to all farmers. Three problems out of five were more or less balanced between men and women. Although input availability is not the responsibility of the extension service *per se*,

there is a need for linkage with the responsible institution for efficient extension service.

4.6.3 Accessibility to VEO by gender

The researcher was interested to find out the easiness with which farmers could contact their VEOs. Since this was very important for interaction and thus for transfer of knowledge to farmers and vice versa. Respondents were therefore requested to state their views on the VEO accessibility. Responses are shown on Table 13.

Table 13. Respondents' views on VEO accessibility.

	Males		Females		Total	
View	N	%	N	%	N	%
Not accessible	45	40.2	67	59.8	112	57.4
Uncertain	28	70.0	12	30.0	40	21.0
Accessible	18	60.0	12	40.0	30	15.4
Useless	9	75.0	3	25.0	12	6.2

Source: Survey data, (1992).

More than half of the respondents claimed that they had not been able to meet the VEO (60 % women and 40 % men). They also believed that he wasn't readily accessible. This corresponds very much with tables 11, 12

and 14, and prove that VEO visits were highly desirable but lacking in the ward. Twenty one percent had not made any attempt to see the VEO so they were not sure whether he was accessible or not (70 % men and 30 % women). Only 15 % of the respondents had an access to the VEO (60 % men and 40 % women) and six percent had the opinion that he was good for nothing (75 % men and 25 % women). Ng'ungulu village didn't have own extension officer at the time of research, that is the reason this came as the second most felt extension problem (Table 12). Thus, the VEO was more accessible to men than to women farmers, and more male respondents considered the VEO useless. This was probably because the VEO did not have any new innovative message to offer, which may not be his fault but rather the defficiency of the extension system as a whole.

4.6.4 Strategies to improve quality of extension service.

After identification of extension problems the respondents were asked to suggest possible solutions. Table 14 gives the results. More than half of the respondents believed that the availability of extension officer would solve their problems. This is a rational suggestion since an efficient extension officer would encompass all the rest, and in my opinion, regular extension officer visits is one of the indicators of an

efficient extension service. This in turn depends on whether the VEO has any new innovative message to offer.

Table 14. Suggested strategies to improve quality of extension service.

	Males		Females		Total	
	N	%	N	%	N	%
None	11	44	14	56	25	13.2
Regular VEO visits	54	50.5	53	49.5	107	62.6
Input availability	22	55.0	18	45.0	40	21.0
Services	7	58.3	5	41.7	12	1.6
Demonstration plots	1	33.3	2	66.7	3	1.6

Source: Survey data, (1992).

Twenty one percent of the respondents believed that input availability will improve the quality of extension they were getting. These most probably represents the innovators who were already convinced that investing in inputs like fertilizer and pesticide was worth it in terms of increased agricultural production. Although input supply may not be the responsibility of the extension system, however there has to be a linkage with the institution responsible, inorder for the VEO to be effective. Thirteen percent of

the respondents were the *lais'sez faire'* type of farmers; most likely quite poor and had resigned to fate; with no suggestion to offer.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

This chapter covers the conclusions and recommendations of the study.

5.1 Conclusions

The study arrived at the following conclusions:

1 Participation of women in village organizations was very low. It is most likely because they are heavily occupied by domestic tasks. Consequently their influence in the village policy matters will be limited.

2 Females of all ages did all of the domestic work except collecting fuel wood which was done by males of all ages.

3 Males of all ages contributed slightly more labour to livestock husbandry tasks than females; which is contrary to observations in other societies. This might mean that the introduction of the livestock based development projects might mean more work load to males. However, livestock husbandry tasks are relatively of shorter duration.

4 There was no clear cut division of labour between gender in either cash or food crop production tasks. Men and women shared in all field activities with the exception of processing and storage (cash crop) which were mainly done by females, and fertilizer and

pesticides application and marketing which were done by males mainly. This is due to the matrilineal heritage of the Luguru.

5 Sources of income were gender dependent. More women than men drew supplimentary income from off-farm sources. This implies that agricultural production does not meet the family subsistence and thus, women being the buyers of food items had to get involved in off-farm income generating activities to make the ends meet. However, the domestic work burden is likely to be a constraint.

6 Custodian of family income was gender independent. Men and women had access to the family income.

7 Decision making was gender dependent. Decision on the production process and resource allocation were dominated by the consensus between spouses, followed by men alone and lastly by women alone. However decision on hire of labour was mostly done by men alone. Decision on income expenditure was divided according to the item in question. Purchase of furniture and clothes were dominated by consensus between men and women. Purchase of food items and kitchen utensils were dominated by women alone, while the purchase of luxurious items and house repairs were dominated by men alone. Thus men and women had different income expenditure patterns.

This meant that an increase in family income may not necessarily mean improvement in nutritional status. It should be accompanied by nutritional and health education.

8 There was no gender variation in the extension method preferred. It was surprising that women preferred VEO visits although they are all males. Most likely the Luguru culture of matrilineal heritage doesn't restrict the interaction of unrelated males and females. The most pressing extension problem was input availability (53 % of respondents). This is a result of increased awareness by farmers on the benefits of using fertilizers and pesticides. The second most pressing extension problem was accessibility of the VEO, this was most applicable to women and also to the village of Ng'ungulu which at the time of the research lacked a VEO.

9 It was observed that gender roles in this society differ from those observed in studies of partillineal societies.

On the whole it is fair to conclude that although the division of labour in food and cash crop production activities is fairly equal between men and women, it is the division of labour in the domestic work which makes the women's work load very heavy.

Both men and women are dependent on each other in the sense that none of them is able to achieve the same economic level without the labour of the other. The society in Mgeta has already made room for both men and women although there is still room for improvement.

Although gender roles in this society are different from those documented on patrilineal societies, literature reveals that even within patrilineal societies there is variation. This means that, gender roles reflect the social customs, norms and beliefs which govern and circumscribe individual behaviour in the particular society; and as a social construct responsive to changes.

5.2 Recommendations

This section covers the recommendations to the extension service, development projects and researchers; on the basis of the results of the study.

1 Females carry a larger burden of domestic work and off-farm small scale income sources. This should be addressed to by the projects and the VEOs. For example: gender sensitization programmes to encourage men and women to share in domestic tasks. This could take place in meetings; also inclusion of gender issues as a subject in primary schools curicullum. Fortunately, gender issues are already incoorporated in curricula of some colleges in the country.

Strategies to improve the agricultural extension service to include:

- Demonstration plots were found to be the most popular method therefore VEO should put more emphasis on demonstration plots on several individual farms. For example demonstration on recommended maize cultural practices like spacing and fertilizer application. Farmers must participate in these demonstrations so that they learn by doing and seeing.
- Regular VEO visits to farmers of both gender since they both participate in food and cash crop production and has been indicated as the second best extension method. In addition more women had indicated inaccessibilty of the VEO as their pressing problem. However these should be bearing new innovative messages which requires frequent seminars and refresher courses for the VEOs.
- Ensure adequate supply of inputs through Twikinde association and the primary cooperative society; where necessary they should be provided on credit. As indicated more than 50 percent of respondent complained that inputs were not available. This either meant that they were not physically available or farmers lacked funds for their purchase.

3 Effort should be made by the extension system and the development projects to encourage more participation of women in village organizations. Current membership and leadership has low women representation. Efforts may take the form of campaigns and incorporating subjects of interest to women like home economics, health education and house craft in to the organizations' programmes.

4 VEOs and the development projects should target men and women as individuals rather than the household since they have different off-farm income sources and income expenditure patterns. In addition, decision is made jointly and that each has access to family income.

5. Since gender roles in this society differ from those observed in patrilineal societies; such a study should be extended to other matrilineal societies in the country. This is to determine whether the pattern observed in Tchenzema is the common pattern in other matrilineal societies in Tanzania and elsewhere.

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APPENDIX 1

QUESTIONAIRE

Study Topic: Gender roles in the domestic and farming systems of Tchenzema ward in Morogoro District , Tanzania.

Village: .....

Name of farmer.....

Name of interviewer.....

Date of interview.....

A. Personal characteristics.

KEY: Please write tick (V) where appropriate.
Fill in all numbers.

1a. Sex: male.....1
female.....2

b. Age (years).....

2a. Number of children.....

b. Number of dependants.....

3a. Indicate the size of labour force in your household by filling the table below:

AGE		No full-time	No part-time	relationship
14-20	M	.....	.....	.....
	F	.....	.....	.....
21-30	M	.....	.....	.....
	F	.....	.....	.....
31-40	M	.....	.....	.....
	F	.....	.....	.....
41-50	M	.....	.....	.....
	F	.....	.....	... key:
51-60	M	.....	.....	... spouse 1
	F	.....	.....	... child 2
60+	M	.....	.....	... other 3

F .... (specify)

b. Involvement in communal work: yes.....1
no.....2

c. If yes, state sex of group?: males....1
females..2

4. Please indicate your level of formal education
   a. None.....1
   b. Adult literacy.....2
   c. Std i-iv.....3
   d. std v-vii/viii.....4
   e. post primary.....5

5. Indicate whether you are a member in the following and show any leadership position held by filling the following table. Key: v if you are a member. Indicate leadership position by:
   chairman 1; secretary 2;
   treasurer 3; committee member 4.

Institution	Membership	leadership position
1. CCM	.....	
2. UWT	.....	
3. WAWATA	.....	
4. Twikinde	.....	
5. Primary coop society.....		
6. village government.....		

6. If you are not a member of Twikinde please answer the following question; how have you benefited from Twikinde? .....
   .....

7. What do you expect Twikinde to do for you in order to increase your income?.....

8. Would you like to give any message to Twikinde

leadership?

.....

9. If you are not a member, please state the reasons on the table below:

Institution	reason
CCM	.....
UWT	.....
WAWATA	.....
Twikinde	.....
Primary coop society	.....

B. DOMESTIC ACTIVITIES.

10. Please indicate the roles of each household member by filling the table below:

KEY: Indicate whether the individual performs 1/4, 1/2, 3/4 or 1 (whole) of the task.

Daily activity	duration	responsible individual				
food preparation & cooking	hrs/day	AM	AF	CHM	CHFE	Others
house/compoundcleaning	.....					
washing dishes	.....					
fetching water	.....					
securing firewood	.....					
washing clothes	.....					
purchasing household items	.....					

NB: AM = adult male, AF = adult female
CHM = male child, CHFE = female child.

C. AGRICULTURAL ACTIVITIES.

11. How many plots does your family have? .....

12. Please list them by filling the table below:

Plot (location)	acreage (Acres)	crops grown in 1991 main rainy season	distance walking (hrs)
1.	.....	.....	.....
2.	.....	.....	.....
3.	.....	.....	.....
4.	.....	.....	.....
5.	.....	.....	.....

CHFE.....

Others.....

13. Total acreage ..... acres.

14. a. Cash crops grown.....

b. Food crops grown .....

15. Please indicate the activities in the production of 2 main cash crops by filling the table below:

KEY: Indicate whether individual does 1/4, 1/2, 3/4 or 1 (whole) of the task.

Symbols as in no 10 above.

A crop ..... pure/mixed cropping acres ...

Task:	pough	sow	weed	fert./pest.	harvest	process/ storage	sale
Duration							
Incharge.							
AM							
AFE							
CHFE							
CHMA							
OTHERS							

B. Crop ..... pure/mixed cropping acres.....

Task: plough sow weed fert./pest. harvest process/ sale storage

duration .....

incharge

AM .....

AFE .....

CHM .....

CHFE .....

OTHERS .....

16. Indicate activities involved in the production of two major food crops.

X. Crop ..... pure/mixed cropping acres.....

Task: plough sow weed fert./pest. harvest process/ sale storage

duration .....

Incharge

AM .....

AFE .....

CHM .....

CHFE .....

OTHERS .....

Crop .....pure/mixed cropping acres.....

Task: plough sow weed fert./pest. harvest process/ sale storage

duration .....

incharge

AM .....

AFE .....

CHMA .....

CHFE .....

OTHERS .....

D. Livestock production activities.

17. Outline the type of livestock on the table below:

Type	no.	purpose	owner
1.....			
2.....			
3.....			

8. Outline the activities involved in management of two types of livestock reared.

KEY: Indicate whether the individual do 1/4, 1/2, 3/4, or 1 (whole of the activity).
AM = adult male, AFE = adult female,
CHM = male child, CHFE = female child.

A.....no.....purpose.....

Task:	feed care	health	graze/ tether	milk	clean barn	pasture establish	sale
duration							
incharge							
AM							
AFE							
CHM							
CHFE							
Others							

B. .....no.....purpose

Task:	feed care	health	graze/ tether	milk	clean barn	pasture establish	sale
duration							
AM							
AFE							
CHM							
CHFE							
Others							

E. OTHER SOURCES OF INCOME.

19. Which of the following gives you income? Indicate the order of importance.

a. beer brewing.... ; b. petty business.....

c. crafts.....; d. hired labour.....

e. cash crop..... ; f. livestock/product...

g. others (specify).....

20. Please tick (V) the asset(s) you own individually

a. field...1; b. house....2; c. livestock...3

d. forest..4; e. others (specify).....5

21. Indicate the means of acquisition:

a. purchase.....1; b. construction.....2

c. inheritance...3; d. other (specify...4

G. Participation of men and women in decision making.

22. Please indicate who usually makes decision in the following:

KEY: myself = 1, my spouse = 2, both = 3,
others (specify) = 4.

a. Production decision:

Choice of cash crops grown.....

Choice of food crops grown.....

When to perform a particular task eg. ploughing sowing, weeding.....

Adoption of innovations e.g. hybrid seeds, fertilizer application.....

Operations on your own field.....

b. Decision related to resource allocation

Choice of a field for a particular crop...

Labour allocation.....

Hiring of labour.....

Purchase of another plot.....

Amount of excess food to be sold.....

Choice of market.....

c. Household income expenditure

Purchase of household items like furniture.....

Purchase of clothes eg like uniforms, bed sheets...

Purchase of household necessities eg salt, sugar...

Purchase of kitchen items eg saucepans, spoons.....

House repairs.....

Purchase of luxuries like radio, cassette.....

d. Custodian of family income

Who keeps the funds from:

Sale of cash crops.....

Sale of surplus food.....

Off-farm sources eg beer brewing, crafts.....

Sale of livestock.....

Sale from your own plot.....

23a. Would you like a bigger role in taking care of the family income?

Yes...1; No.....2

b. Please explain.....

24a. Would you like a bigger role in decision making?

Yes....1; No.....2

b. If yes, specify in which area.....

25a. Are you satisfied with your knowledge of agriculture?

Yes...1; No...2

b. If no, indicate the area of weakness

crop production...1; animal husbandry...2

house craft.....3.

c. Please indicate the extension method you prefer:

meetings.....1

extension officer visits.....2

training in institution.....3

visiting other farmers.....4

demonstration plots.....5

H. PERSONAL OPINION.

27. Give your opinion on how to improve the quality of extension service in you village.....

28. Do you have any problem in your agricultural/livestock production? Explain.....

29. Do you have easy access to your extension officer? Please explain.....

30. Do you have any message to your village extension officer?

.....

THANK YOU FOR YOUR COOPERATION.

Appendix 2

Chi-Square test for relationships between sources of income and gender.

Null hypothesis: Sources of income are independent of gender.

Alternative hypothesis: Sources of income are dependent on gender.

Activity	men	women	total
beer brewing	15	19	34
petty business	12	14	26
craft	21	2	23
hired labour	10	11	21
cash crop	95	96	191
livestock	67	60	127
Total	220	202	422

X^2 = 16.07** df = 5

Appendix 3

Chi-Square test for relationship between custodian of family income and gender.

Null hypothesis: Custodian of family income is gender independent.

Alternative hypothesis: Custodian of family income is gender dependant

Source	men	women	both	total
cash crop sale	35	75	83	193
surplus food sale	11	16	32	59
other sources	11	35	39	85
livestock	26	46	61	133
Total	83	172	215	470

X^2 = 5 ns df = 6

APPENDIX 4

Chi-Square test for relationship between production decisions and gender.

Null hypothesis: Production decisions are independent of gender.

Alternative hypothesis: Production decisions are gender dependent.

Decision on:	men	women	both	total
cash crop grown	47	9	139	195
food crop grown	19	14	162	195
time for a task	38	10	147	195
adopt innovation	84	8	100	192
processing method	4	5	79	88
Total	192	46	627	865

$X^2 = 86^{**}$ df = 8

APPENDIX 5

Chi-Square test for relationship between resource and disposal of produce allocation decisions and gender.

Null hypothesis: Resource allocation decisions are independent of gender.

Alternative hypothesis: Resource allocation decisions are gender dependent.

Item	men	women	both	total
field selection	53	7	125	185
job allocation	39	8	147	192
hire labour	81	7	79	167
purchase field	65	9	90	164
purchase livestock	64	6	115	185
sale surplus food	9	6	40	55
market choice	30	10	91	131
Total	341	53	685	1075

X^2 = 52** df = 12

APPENDIX 6

Chi-Square test for relationship between income expenditure decisions and gender.

Null hypothesis: Income expenditure decisions are independent of gender

Alternative hypothesis: Income expenditure decisions are gender dependent.

Expenditure on:	men	women	both	total
furniture	93	7	94	194
clothes	68	7	118	193
food items	30	110	53	193
utensils	30	103	60	193
house repairs	120	8	63	191
luxury items	107	3	74	184
Total	448	238	462	1148

X^2 = 475** df = 10