

**WOMEN'S FARMING GROUPS IN A SEMI-ARID REGION OF KENYA:
A CASE STUDY OF THARAKA DIVISION, MERU DISTRICT**



by

Katrina Brown, BSc., MSc.

Thesis submitted to the University of Nottingham for
the Degree of Doctor of Philosophy, October, 1990



IMAGING SERVICES NORTH

Boston Spa, Wetherby

West Yorkshire, LS23 7BQ

www.bl.uk

**CONTAINS
PULLOUTS**

TABLE OF CONTENTS

	Page
Abstract	v
List of Tables	vii
List of Figures	ix
List of Acronyms	x
Glossary of Swahili Terms	xi
Acknowledgements	xii
CHAPTER ONE INTRODUCTION	1
1.1 Background to the Study	1
1.2 Relevance of the Research	3
1.3 Geographical Focus	5
1.4 Scope of the Research	6
1.5 Research Methodology	8
1.6 Structure of the Thesis	9
CHAPTER TWO THEORETICAL CONTEXT	10
2.1 Rural Development: An Overview	11
2.2 Peasants, Agrarian Change and Rural Development Policies	14
2.3 Women and Rural Development: Conceptual Issues	17
2.4 Women and Agricultural Development	28
2.5 Effects of Developemnt Policies	30
2.6 Projects for Women?	40
2.7 Opportunities for Participation and Self Reliance	43
2.8 Summary	46
CHAPTER THREE KENYA: RURAL DEVELOPMENT AND WOMEN	49
3.1 Kenya: A Smallholder Economy	50
3.2 Poverty in Kenya	51
3.3 Agricultural and Rural Development	55
3.4 Local Initiatives and Harambee	64
3.5 Women in Kenya	67
3.6 Women's Organisations in Kenya	73
3.7 Summary	82

CHAPTER FOUR	GEOGRAPHICAL FOCUS: MERU DISTRICT	84
4.1	Physical and Ecological Characteristics	84
4.2	Population and Demography	88
4.3	Agricultural Production	92
4.4	Infrastructure and Service Provision	95
4.5	Social and Economic Characteristics	97
4.6	Tharaka Division	101
4.7	Summary	117
CHAPTER FIVE	METHODOLOGY	120
5.1	Formulation of Hypotheses and Research Questions	121
5.2	Methodology Rationale	125
5.3	Research Techniques	129
5.4	Summary	143
CHAPTER SIX	WOMEN'S SELF-HELP GROUPS IN MERU DISTRICT	145
6.1	Registered Women's Groups in Meru District	145
6.2	Goals and Activities of Women's Groups	151
6.3	Assistance	156
6.4	Women's Groups in Tharaka Division	163
6.5	Summary	168
CHAPTER SEVEN	WOMEN FARMERS IN THARAKA: ECONOMIC AND SOCIAL STATUS OF GROUP LEADERS, MEMBERS AND NON-PARTICIPANTS	171
7.1	Economic Status	172
7.2	Social Status	186
7.3	Other Factors	196
7.4	Benefits of Participation	200
7.5	Constraints to Participation	202
7.6	Summary	202
CHAPTER EIGHT	INNOVATION BY WOMEN FARMERS IN THARAKA	205
8.1	Innovation by Women Farmers	206
8.2	Extension Visits to Women Farmers in Tharaka	221
8.3	Needs Expressed by Respondents	222
8.4	Summary	226

CHAPTER NINE	WOMEN'S GROUPS IN THARAKA: ACCESS TO DEVELOPMENT RESOURCES	229
9.1	Assistance Received by the Groups	230
9.2	Effect of Agro-ecological Potential on Access to Resources	233
9.3	Effect of Physical Accessibility	238
9.4	Effect of Group Registration on Access to Resources	242
9.5	Effect of Group Activities on Access to Resources	244
9.6	Other Factors influencing Access to Resources	248
9.7	Expressed Needs of Surveyed Groups	255
9.8	Summary	256
CHAPTER TEN	CONCLUSIONS AND RECOMMENDATIONS	258
10.1	Summary of Findings	258
10.2	Implications of Findings	262
10.3	Women's Farming Groups and Self Reliance: Conclusions	267
10.4	Recommendations	270
10.5	Further Research	282
REFERENCES AND RESEARCH BIBLIOGRAPHY		285
APPENDICES		
1	WOMEN'S GROUPS SURVEYED IN THARAKA DIVISION	
2	QUESTIONNAIRE	
3	EXPLANATION OF AGRO-ECOLOGICAL CLASSIFICATION	
4	WOMEN'S GROUPS ACTIVITIES CLASSIFICATION	
5	SUPPLEMENTARY TABLES	

ABSTRACT

The thesis examines how far women's farming groups are able to foster self-reliance among peasant farmers in Tharaka Division, a semi-arid region of Kenya. This is a particularly impoverished, drought prone part of the country where population pressure is resulting in intensified land use. In the past development policies have increased the vulnerability of peasant farmers making local people increasingly dependent on cash cropping and off-farm sources of income. Many households are headed by women, and the majority of farms are managed by women.

Three aspects of women's farming groups were investigated: participation; extension and innovation; and access to development resources.

A comparison is made between the economic and social status of participants and non-participants in women's farming groups. If it is the case that poor women are excluded from these groups, then a policy of targeting agricultural services and inputs to women's groups actually discriminates against resource-poor farmers.

The study compares the number of extension visits received and innovations adopted by participants and non-participants. It questions whether the dissemination of information takes place through groups, and whether or not groups facilitate innovation.

It examines the distribution of services and inputs to groups by government and non-government development agencies, and identifies those factors determining which groups receive assistance.

The study concludes that women's farming groups have the potential to foster self-reliance amongst peasant farmers. However at present poorer women do not join groups because of severe time constraints created by competing labour demands. Any policy

supporting women's farming groups can only be consistent with a "people-centred", participatory approach to development when these constraints are overcome and poor women, particularly female heads of households, are able to participate.

Present policy is biased in favour of groups from more fertile areas. It is necessary to formulate policy appropriate to dryland areas where women's farming groups may provide a valuable mechanism for reducing vulnerability and ameliorating the effects of drought and famine.

LIST OF TABLES

	Page
2.1 Division of Rural Labour by Task, by Sex: All Africa	26
2.2 Farm Task Allocation among the Juluo	30
2.3 Annual Labour Times of Beti and Heya Farmers	35
3.1 Smallholder Production as % of Total marketed Output	50
3.2 Nutritional problems in Kenya, 1978	53
3.3 Provincial Ranking by Various Indicators	54
3.4 Percentage of Households Headed by Women by Province	70
3.5 Women in Women's Groups in Kenya	73
4.1 Meru District Rainfall Distribution	86
4.2 Agro-ecological Potential per Division	87
4.3 Estimated Total Population, Meru District, 1908-1993	88
4.4 Population per Division	90
4.5 Population Density per Division, 1979-1993	91
4.6 District Crop Production, 1987	93
4.7 Available Land per Division, 1979	94
4.8 Frequency Distribution of Total Household Income 1984	98
4.9 Composition of Total Household Income (%), 1984	99
4.10 Quality of Housing Conditions	100
4.11 Area per Farm of Food and Cash Crops by Sublocation	103
4.12 Probability of Crop Failure, Marimanti	103
4.13 Distribution of Lengths of Fallow	105
6.1 Women's Groups Registered per Division, 1980-May 1984	147
6.2 Registered Women's Groups and Population per Division	148
6.3 Membership of Women's Groups in Meru District	149
6.4 Women's Group Activities per Division, 1987	154
6.5 Home Economics Extension to Women, 1974-1980	158
6.6 Women's Group Registrations in Meru and Tharaka	163
6.7 Women's Groups per Sublocation in Tharaka	165
6.8 Women's Groups and Population in Tharaka	166
6.9 Women's Group Activities in Tharaka, 1980-1987	168
7.1 Income Sources	176
7.2 Self Sufficiency	178
7.3 Livestock Kept by Households	180
7.4 Type of Livestock Kept	181
7.5 Stock kept by Respondents	181
7.6 Labour Use on Respondents Farms	183
7.7 Source of Labour on Respondents Farms	185
7.8 Marital Status	190
7.9 Respondents Marital Status	192
7.10 Respondents Household Class	193
7.11 Respondents Class	195
7.12 Respondents whose Husbands Work Away from Home	195
7.13 Area Cultivated by Respondents	199
7.14 Benefits of Participating in Women's Groups	201

8.1	Trees Planted	210
8.2	Cash Crops Grown	214
8.3	Cash Crops Grown by Respondent	215
8.4	Respondents Expressed Needs	223
9.1	Group Visits	231
9.2	Inputs Received by Survey Groups	232
9.3	Organisation Providing Inputs	233
9.4	Agricultural Capability	235
9.5	Land Use and Vegetation	236
9.6	Survey Groups Activities	246
9.7	Group Plots	250
9.8	Women's Groups Visits per Sublocation	254
9.9	Expressed Needs of Groups	255

LIST OF FIGURES

	Following Page
4.1 Administrative Map of Kenya	84
4.2 Administrative Boundaries in Meru District	84
4.3 Rivers in Meru District	85
4.4 Agro-ecological Zones in Meru District	86
4.5 Roads in Meru District	95
4.6 Health Facilities in Meru District	97

LIST OF ACRONYMS

AEZ	Agro-ecological Zone
ASAL	Arid and Semi-arid Lands
CANSAVE	Canadian Save the Children Fund
CDA	Community Development Assistant
DC	District Commissioner
DDC	District Development Committee
DvDC	Division Development Committee
EMI	Embu-Meru-Isiolo Programme
FSR	Farming Systems Research
GDP	Gross Domestic Product
GNP	Gross National Product
HYV	High Yielding Variety
ILO	International Labour Office
ITK	Indigenous Technical Knowledge
KANU	Kenya African National Union
LDC	Location Development Committee
MOALD	Ministries of Agriculture and Livestock Development
NGO	Non-governmental Organisation
SDA	Social Development Assistant
SDO	Social Development Officer
SIDA	Swedish International Development Agency
SlDC	Sublocation Development Committee
TA	Technical Assistant
USAID	United States Agency for International Development

GLOSSARY OF SWAHILI TERMS

Baraza	Community Meeting
Harambee	Community Self-help / All pull together!
Jembe	Hoe
Jiko	Cooking place / stove
Mabati	Corrugated iron sheets
Matatu	Freelance mini-bus / pick-up
Mzee	Old man - respectful term
Panga	Machete
Posho Mill	Maize grinding mill
Shamba	Plot / garden
Shifta	Bandits / poachers
Sufuria	Aluminium cooking pot

ACKNOWLEDGEMENTS

I would like to thank all the people who helped me throughout the course of this study. I am extremely grateful to many people in Tharaka who kindly and generously welcomed me into their community and shared their stories and experiences with me. Many people helped me to learn. I would like to express my thanks to all the local administrators whose assistance made the field survey possible. Personnel at the Marimanti Goat and Sheep Project were gracious in their hospitality and generous with their advice and knowledge. Particular thanks are due to Ernest Njuguna Mbogo and Simon Peter Okore who welcomed me to their home, and Paul Ntharamba, and Rosemary and Ian Skea for allowing me to make the project in Marimanti my base. Peter Chege kindly provided technical support and enabled me to remain mobile despite mechanical breakdowns! Gerald Nthumbi worked inexhaustibly in introducing me to groups and officials throughout the Division. Muthoni M. John worked alongside me as a translator, advisor, and guide, and became a good friend. Above all, the women we spoke to deserve thanks for their kindness and patience, their generosity in taking time to speak to me, a stranger. In Meru Town Steve Njuguna and all staff at the Physical Planning Office were most helpful.

At the University of Nairobi, Zak Maleche, Elijah Ndegwa and staff at the Department of Urban and Rural Planning provided valuable advice on the formulation of my research proposal and questionnaire. Liza Burrell, and Sue and Alan Dixon were generous hosts when I stayed in Nairobi. Alister Dawson helped me in many different ways and taught and showed me much of Kenya.

I would also like to acknowledge the Office of the President for

granting me research clearance, and the Institute of Development Studies, University of Nairobi, where I was a Research Associate. Initial sponsorship for my studies was provided by the Economic and Social Research Council.

In UK I would like to thank staff and fellow students at the Institute of Planning Studies in Nottingham for their advice and friendship. Dr Keith Williams deserves gratitude for his patient and dedicated supervision. Maggie Foster has helped me immensely with great generosity. Anita Berlin's friendship has provided emotional and practical support. My brother and sister, Martin Brown and Hester Hardwick and their families have encouraged and sustained me.

Greatest thanks go to my parents, Jack and Mary Brown who have supported me in many different ways throughout my course of study.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The 1990s present many challenges to development theorists, policy makers and practitioners. The past decade saw the emergence of crises in many sub-Saharan African countries; declining per capita food production, massive debt and economic stagnation, environmental degradation and desertification. The 1980s also witnessed devastating drought and famine. Poverty has increased, and disparities between rich and poor have widened. These effects confirm the apparent failure, in many cases, of growth-orientated development strategies.

There is now a focus on drier parts of sub-Saharan Africa, not only because these are areas most prone to drought and where poverty and famine are most prevalent, but also because the limits of production have been reached in many wetter areas. Government and development agencies now search for ways of ensuring "sustainable" livelihoods for the poor in these areas, and emphasise a "people-centred" approach to development, involving the participation of proposed beneficiaries.

The importance of participation in achieving the desired redistribution of the benefits of development is now generally agreed upon, however, little unanimity exists on the actual nature and process of participation. Oakley and Marsden (1984) reviewed different interpretations of participation and were able to identify two broad schools of thought. The first maintains that basic development strategies are adequate, but that there is a need to build more participation into development projects, and as such views participation as another input into programmes. The

second school sees participation as a more basic, powerful and fundamental concept where it is necessary to involve people from the very onset of projects, so that they themselves can decide what needs to be done. This view of participation involves issues of people taking power in terms of access to, and control of, the resources necessary to protect their livelihoods. It is this interpretation of participation which is relevant to the present study, incorporating concepts of empowerment and self-reliance. Researchers (for example, Pala, 1988) have identified women as the single most disadvantaged group in rural society. Pala asserts that this is in part due to the dominant development ideology in which women continue to be seen as a social welfare problem, and not yet as a critical key to the solution of rural development problems. Some writers (for example, Loutfi, 1980. Mwaniki, 1986) have gone so far as to suggest that the failure to recognise and to support women's roles as subsistence food producers, and the concentration of assistance to men and cash crops, has led to a decline in agricultural production and food security, and increasing environmental degradation and vulnerability so evident in sub-Saharan Africa. That development policies have failed to reduce poverty may be blamed on the failure to allow the real participation of women in development planning implementation and evaluation. As Richard Jolly, the Director of UNICEF, declared at the 1985 UN Conference on Famine in Africa:

"It is the African farmer and her husband who plays the main role in African agriculture." Quoted in Allinson, 1985.

The UN Decade for Women, 1975-1985, did much to highlight the plight of poor women in developing countries, and three Decade Conferences drew together academics, planners and policy makers.

However, there is little evidence that the Decade has effected any real improvement in the condition and status of women. A UNICEF commissioned study of the effect of world recession on women and children (Jolly and Cornai, 1984) demonstrates that poor women are probably worse off than they were at the beginning of the Decade.

1.2 Relevance of the Research

Women are the major subsistence food producers in sub-Saharan Africa; they also provide labour and management for cash cropping, and are often crucial income earners for their families. Increasing numbers of households throughout the world are headed by women. Research (see Rogers, 1980) has shown that women's work may be the major factor influencing food production, and women's labour the biggest constraint to increasing production. Women's incomes are more likely to bring benefits to their children and are significant determinants of family welfare.

Agricultural policies aimed at reducing smallholder poverty and increasing food security in the Third World must be aimed at women if they are to meet their objectives. However, it has frequently been shown that women farmers are discriminated against in terms of access to resources, services and assistance.

International donor agencies have often found it expedient to target policy interventions aimed at assisting women - "integrating women" - to women's groups. A number of factors make it more convenient for development agencies to work with groups for delivery of training and other services and inputs. In terms of staff, transport, time and expense it is preferable to meet groups of women rather than individuals. Groups may enable women to better articulate their needs, increase confidence, allow informal learning, as well as achieve a certain amount of

corporate power. Working with groups also fits into objectives of increasing participation, especially when it is assumed that groups represent grassroots organisations.

How does the practice of concentrating assistance to groups affect the achievement of development aims? What of the women do not participate in groups, and are thus excluded? These questions as yet remain unanswered.

The present research goes further than previous studies on women's groups in that it compares participants and non-participants from the same area. This study examines the farming activities of groups, maintaining that this is their primary and most important function, especially in a low potential area. It compares the farming activities and adoption of innovations by group participants and non-participants. The study examines groups' access to a range of agricultural development resources - services and inputs - and attempts to identify which factors are most likely to influence whether a group receives assistance from development agencies. Such a systematic survey of the access of women's groups to development resources has not been undertaken before.

Most studies have examined women's groups from higher potential areas where opportunities for income generation are relatively diverse. However, at a time when drier areas of sub-Saharan Africa are receiving so much attention, it seems pertinent to focus in such an area. The role of women in the farming systems of such environments is less understood than in more fertile areas, and the role of women in famine relief is little known. Nearly all studies concerning drought vulnerability and alleviation have concentrated on men. The role of women in combatting environmental

degradation, alleviating hunger and ensuring food security, is believed to be crucial, and it is expected that women's farming groups play an important role, particularly in helping members overcome contingencies.

1.3 Geographical Focus

The strength and popularity of the Harambee movement makes Kenya an excellent site for studies of self-help groups. Kenya's Harambee movement and women's groups have long been central to the country's development plan implementation and have attracted great interest from the international community. The country hosted the UN Decade for Women end of Decade Conference, and the government has been supportive of policies aimed at integrating women in development. Women's groups are important vehicles for targeting rural development initiatives; they are explicitly referred to in many policy statements, including that of District Focus for Rural Development.

Although Kenya is considered a relatively rich country in Africa, poverty exists on a largescale, with small farmers in drier regions being particularly impoverished. Mbithi and Wisner have observed (1973) that the area of Kenya which shows greatest famine potential is the marginal agricultural zone in the east.

Meru District lies in the Eastern Province of the country and is part of the central highland region. Meru is one of the most ecologically diverse of Kenya's forty districts and as thus contains a very complex pattern of smallholder production. The questionnaire survey was undertaken in a semi-arid area of the District, Tharaka Division. This area is included in the ODA funded Embu-Meru-Isiolo Development Programme (EMI), part of the

Republic of Kenya's Arid and Semi-arid Lands Scheme. EMI's project appraisal document (BDDEA, nd) describes the social and environmental conditions thus:

"...people living in the project area, whose standard of living and per capita incomes are exceptionally low by Kenya standards, whose home environment is both harsh and fragile, and whose expectations of regular crop failure and consequent famine are high. In Tharaka Division of Meru District, by far the most populous area, annual population growth rate is estimated at 3.8%.....given the high rates of immigration, this area is facing ultimate catastrophe, or famine relief as an undesirable alternative." (BDDEA, nd:Annex 2, 18)

Hugh Gibbon's research (1987) concluded that more information is required on the dryland areas of Meru District so that a more balanced rural development policy can be initiated and food production improved.

1.4 Scope of the Research

The research aims to establish whether women's farming groups are able to foster self-reliance among peasant farmers in a semi-arid area of eastern Kenya. It hopes to examine whether participation in farming groups facilitates women farmers' adoption of agricultural innovations and access to development resources. To do this, it compares group leaders, members and non-participants, and also groups from different sites within the study area.

The research aims to assess the effectiveness of groups in three different areas. First in terms of participation, particularly whether poorer women are able to participate in farming groups; secondly, in terms of dissemination, innovation and extension through groups; thirdly, in terms of access to agricultural development resources.

There are three central research hypotheses:

1. Poor women are excluded from participation in women's farming groups.

2. The dissemination of information and innovations takes place through women's farming groups such that:

i. Participants in groups are more likely to adopt innovations on their own farms;

ii. Participants receive more extension visits and are better informed about innovations than non-participants;

iii. Group plots may be used as informal experimental or demonstration plots.

3. Certain characteristics of groups are likely to favour their access to development resources and assistance, such that:

i. Groups in areas of high agro-ecological potential receive more assistance;

ii. Groups in more easily accessible areas receive more assistance;

iii. Groups registered with the Department of Social Services receive more assistance;

iv. Groups involved in income generating activities will receive more assistance.

The research also aims to answer the following research questions generated by the hypotheses:

1. What are the main constraints to participation: are these likely to affect poorer women more acutely?

2. What are the main benefits of participation in groups and are these perceived differently by participants and non-participants?

3. Are benefits likely to be appropriate or useful for poor farmers, particularly female heads of households?

4. What do women identify as being the most useful form of assistance or greatest need, on their own farms, in Tharaka generally, and for their groups?
5. Are these forms of assistance available to women in the area?
6. Which groups receive assistance; can they be perceived as most privileged or advantaged in any way? Are they made up of richer women, or are they concentrated in certain areas?
7. Does the distribution of assistance depend on any particular attributes of the group?
8. In which ways can assistance targeted to women's groups be made more effective and more likely to reach poorest households?

1.5 Research Methodology

The research took the form of a comparative study; first comparing women's group leaders, members, and non-participants, and secondly comparing groups from different sites within the study area.

Three techniques were used to collect data for the research: a complete survey and review of material and records available at the Meru District Department of Social Services was undertaken; a questionnaire survey of women's farming groups and women's farming activities was carried out in Tharaka Division; structured and unstructured interviews with government and non-government personnel concerned with women's groups were used to provide additional information. The techniques enabled quantitative and qualitative comparable data to be obtained. Data from the questionnaire survey were coded and submitted to the SPSSx package for processing.

1.6 Structure of the Thesis

This thesis is arranged into ten chapters. Chapter Two reviews the literature concerning women and rural development. Chapter Three focuses on Kenya and discusses the extent and distribution of poverty, the status of women, and experience of women's groups. Chapter Four describes the research site, Tharaka Division in Meru District.

Methodology and research techniques are described in Chapter Five. Chapters Six to Nine present research findings. Chapter Six sets out data on the women's groups registered in Meru District. Chapter Seven presents findings on the social and economic status of group leaders and members, and non-participants. The adoption of agricultural innovations and extension visits received by the three sets of respondents are discussed in Chapter Eight. Chapter Nine concerns the types of assistance received by women's groups in Tharaka, and factors influencing their access to agricultural development resources.

Finally, Chapter Ten presents a summary of the research findings, and the conclusions of the study. A number of recommendations for rural development policy and for further research are proposed.

CHAPTER TWO

THEORETICAL CONTEXT

This study embraces a number of issues which are currently of concern to rural development researchers and practitioners in trying to come to terms with the disappointing effects of development policies which, particularly in Sub-Saharan Africa, have failed to bring any tangible benefits to the majority of the rural poor. Per capita food production is falling in many countries (see Roberts, 1986), and it is clear that economic growth achieved in the 1960s and early 1970s did little to improve the way of life of the majority of the population; the small farmer. The outlook is bleak: the continent now faces a barrage of problems including global economic recession and crippling debt, environmental degradation, and population pressure in both rural and urban areas. Absolute numbers of the chronically hungry and those at risk from famine increased between 1974 and 1984, when twenty African countries required emergency food aid (Wisner 1988).

Within the context of rapid economic transformation, so called development has further marginalised the poor in developing societies. Development policies have in many cases exacerbated inequalities. Benefits have been concentrated in areas of high agro-ecological potential where farmers have been able to intensify cropping and expand production of cash and export crops. Among those marginalised are women farmers, particularly those women who are heads of household, peasant farmers, share croppers and the landless, pastoralists or agro-pastoralists living in fragile arid and semi-arid environments which make up most of the continent.

Some writers, including Loutfi (1980), and Mwaniki (1986), maintain that the current crisis in agricultural production and food security in sub-Saharan Africa is at least in part a result of the failure to recognise the key role played by women in agriculture, particularly in subsistence food production. This chapter examines some of the reasons for this omission, and introduces key concepts in the analysis of women and development issues, highlighting gender divisions of labour in agriculture. Also reviewed are some of the effects of past development policies on women, and approaches to the integration of women into development planning, and the opportunities for increasing participation by women.

First, in order to place the discussion within its context, rural development policies are introduced. A discussion of approaches to peasant agriculture and agrarian change is outlined as a means of providing background to this study of women farmers in a peasant community.

2.1 Rural Development: An Overview

In the past, raising productivity was perceived as the means of modernising agriculture and limiting poverty in rural areas of developing countries. Problems were generally seen as technical, rather than economic or political. Remedies to low productivity, "backward" traditional agriculture, were believed to require the transfer of technology, plus in many cases skills and knowledge, from the First World to the Third; from the scientists to the farmers. Such an approach is exemplified by the Green Revolution in the 1960s-70s, which has now been shown to have not only enforced, but exacerbated inequalities between the rich and poor

in many cases (see Palmer, 1977, Pearse, 1980, Farmer, 1977).

In response to the unequal effects of agricultural development programmes, "Rural Development" emerged during the 1970s as a distinct field of policy and practice. In 1975 the World Bank defined Rural Development as:

"...a strategy designed to improve the economic and social life of a specific group of people - the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small-scale farmers, tenants and the landless" (World Bank 1975, quoted in Chambers, 1983:147).

Characterised by its concern with equity objectives, Rural Development confronts issues of poverty and inequality. Wisner describes Rural Development as being a possible way of putting a human face on increased agricultural production, "production-first with a human face" (1988:198). This approach is still from the top down; outsiders design the programmes and nothing is mentioned about power structures. Chambers (1983) offers a complimentary definition:

"Rural development is a strategy to enable a specific group of people, poor rural women and men, gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of development. The group includes small-scale farmers, tenants and the landless." (Chambers 1983:147)

Here, initiative starts with the outsiders, but the aim is to transfer more and more power and control to the poor. Chambers definition also explicitly includes women, thus acknowledging gender issues.

But who are the rural poor, the supposed beneficiaries of Rural Development initiatives? Oakley and Marsden (1984:12) highlight some of the difficulties associated with identifying the poor as a group:

"When we talk of the rural poor... it is impossible to conceptualise them as a static, homogenous group which can be readily identified and moulded. They are a dynamic and fragmented population and one of the aims of isolating them is to increase their awareness of a whole series of common interests which might give them the strength and the opportunity to organise. It is increasingly important to understand the existence of discrete common interest groups and the complex relationships between them. Their increased participation is essential for the elaboration of the new order because on their participation rests the future of all development initiatives."

Oakley and Marsden find that the poor are characterised by the following problems which limit their chances of improving their livelihoods: lack of access to resources for development; lack of viable organisations to represent their interests; the dominant power of local money lenders and traders; the dependent and marginalised nature of their lives; the air of despondency and despair which characterise their lives.

Chambers (1983) refers to "integrated rural poverty", describing how poor households may be characterised by "clusters of disadvantage"; poverty, physical weakness, vulnerability, isolation and powerlessness. These clusters interlock to form the "deprivation trap", a vicious circle of poverty.

This observation implies that the poor lack more than just material possessions or wealth. Lack of power is an important characteristic of the poorest of the poor, as is vulnerability, which puts the poor at the mercy of local and other elites. Moreover, these factors make the poor very difficult to reach through conventional development programmes. Chambers (1983) also describes how the poor are hidden from view by a series of biases and misconceptions which keep them in the background. Chambers advocates a series of reversals; in how poverty and the poor are perceived, in professional values and learning, as well as in management, to ensure that the poor are seen, and are able to

participate in and partake of benefits from development projects. Oakley and Marsden (1984) identify obstacles to reaching the poor, and highlight problems associated with focusing policy toward "target groups". These groups operate in a complex environment in which relationships are rapidly changing. They refer to such measures as "hitting an invisible target". Development projects aiming to alleviate poverty in one section of society, one target group, will never be sustainable, nor have lasting benefits, when the very structures which have created poverty still exist within society. Some impact in terms of relief of a temporary nature may be achieved, but without major changes, the problems remain largely unaddressed.

2.2 Peasants, Agrarian Change and Rural Development Policies

This section outlines some characteristics of peasant production systems, and how development policies have affected them. Peasants have often been targetted by Rural Development programmes. Peasants make up a large proportion of the world's poor, and the women in this study are part of a peasant community. In many ways the effects of policies - particularly those aiming to increase agricultural production - have had similar effects on women as on peasants in terms of further impoverishing and marginalising them. Peasants are in essence small farmers, some of the poorest people in the world occupying the margins of the global economy. With one foot in the market and the other in subsistence they are neither fully integrated into the economy nor wholly insulated from its pressures. Peasant livelihoods are precarious, and they are marginalised economically and often physically and socially. In this way they may exhibit many of those characteristics, including

vulnerability, described as Chambers' deprivation trap.

Ellis (1988.12) provides an economic definition of peasants:

"farm households, with access to their means of livelihood in land, utilising mainly family labour in farm production, always located in a larger economic system, but fundamentally characterised by partial engagements in markets which tend to function with a high degree of imperfection".

An important feature of peasants worldwide is the significance of non-market criteria in the allocation of land. In peasant societies land is more than just another factor of production which has its price: it is the long term security of the family against the hazards of life, and it is part of the social status of the family within the village or community. Peasant farming is characterised by being low input (except for labour), low risk, diverse and adapted to the environment. Peasants have been described in terms of their subordination within society, implying inferior social and cultural status as well as economic exploitation. They are often thought of as "backward", and their way of life as "traditional".

In criticising Rural Development policies, Harriss (1982a) contends that in dominating theories of Rural Development peasants represent a problem, and that a central aim of Rural Development policies is to eradicate the peasant class. Discussing the effects of such policies on peasants, Harriss reviews three broad approaches to the analysis of agrarian change which correspond to the major paradigms of social science research; the Systems approach, Decision-making models, and Structural/Historical approaches. Harriss maintains that the Structural/Historic approach, which places ownership and control of resources at the centre of analysis, is most appropriate to studies related to Rural Development (both as policy and as process) because it is

inherently inter-disciplinary, and is the approach most concerned with issues of distribution and with poverty. Within this perspective, the theme of commoditisation of production and the incorporation of smallscale producers into markets, linking rural household producers with capitalist production is the dominant process of change.

Wisner (1988) goes further in arguing that the state employs three mechanisms which ensure that peasant labour and production are incorporated into capitalist markets. Wisner maintains that peasants remain a problem for modernists because, despite their partial involvement in the labour market, they own (or at least have some conventionally sanctioned access to) their own means of production (especially land, but also water and animals). Peasant labour could make profits for the state if it were "freed" from the land. Wisner demonstrates how states have employed privatisation, commoditisation, and marginalisation to "free" peasant labour from the land and to direct family labour toward production for the market. Wisner argues that these processes lead to a growing polarisation between winners and losers within the same system.

Privatisation is introduced to establish individual rights to resources. In many instances this has involved the adjudication of land, so that land previously under clan systems of control is transformed to private ownership. This is accompanied by restriction of rights of access to commons, for example wood and "bush" foods, so that family reproduction needs previously satisfied by resort to commonly held resources have to be filled by purchases from the market.

Commoditisation involves the transformation of previously free or

bartered need satisfiers into commodities obtainable only in exchange for money. For example, local production like soap making and shoemaking have been taken over by large, often transnational companies, and education and health care, traditionally provided by family members or community experts, have been commoditised. New food, clothing and furnishings have been encouraged. More and more of the family's needs consequently require cash.

Marginalisation is the process by which the productivity of family land actually falls relative to needs. This occurs as a result of population increases and land divisions which cut back the amount of land available, or when families are forced to sell land or other assets for cash needs. The family may then fall into a spiral of intensified use and shorter fallows leading to decline in fertility. Families may migrate to less productive areas (as illustrated in studies by O'Keefe and Juma, 1982, O'Leary, 1980)). Peasants may not become landless, but will have to get cash from other sources, for example by family members migrating in search of paid employment, or by a greater reliance on cash crops. In this way, a degree of dependence on production for the market has actually become essential for the maintenance and reproduction of the peasant household.

These processes have particular implications for women farmers, and are relevant to what is happening in the study area. They are referred to throughout this thesis.

2.3 Women and Rural Development: Conceptual Issues

Most studies of peasant systems have concentrated on households; few have gone within the household or family unit to look at individuals and their different roles. The present study concerns women farmers who are part of a peasant community. In peasant

societies women are responsible for the majority of agricultural production; most authors put the figure at some 70-80% of production in sub-Saharan Africa (Boserup 1970 and others). However on a world scale, women own only 1% of the world's property, and earn only 10% of its income (George 1984).

Women are the "invisible" agricultural producers in peasant society. It is only relatively recently that the role of women has been placed on the agenda of analysis and research into farm production. Until very recently, a number of methodological and conceptual biases ensured that women's contributions remained underestimated. Most research into peasant farm production has concentrated on the household as the principal unit of analysis. However, economists, anthropologists and sociologists are increasingly questioning their understanding of rural households. Burfisher and Horenstein (1983), Beneria (1981) and Harris (1982) highlight problems of using the household as a basic unit of measurement. These authors maintain that the distribution of labour and benefits, and decision making within the household unit are of special concern when considering the role of rural women. (See also Evans, 1989 with reference to the new Home Economics, Jones, 1986 concerning resource allocation in polygynous households). Anthropological evidence from sub-Saharan Africa casts doubt on the traditional view of a household, consisting of related members sleeping under the same roof and eating from the same pot, revealing that households are often shifting, flexible structures.

Aggregated national statistics are often used as the basis for policy making and planning decisions. National accounting procedures rarely take account of women's productive activities in

subsistence farming systems, and these problems are compounded by the use of GNP and GDP as welfare measures (see Newland 1980, and cf UNICEF 1984 for the use of Basic Indicators as welfare measures, UNESCO 1976 on the use of socio-economic indicators for development planning).

Whilst women's economic work is under-reported, women's "non-economic" activities usually disappear completely from national statistics. They are unpaid and therefore unvalued by statisticians and planners of a modernising economy. Although micro-level studies have done much to highlight the role of women in subsistence economies, official statistics still tend to obscure the importance of that role. This inconsistency has been highlighted by the ILO Mission to Kenya, cited in Rogers (1980:62), which reports:

"..the sharp distinction between time spent on "economic" activities and on work for the family (fetching water, preparing food, teaching children and dealing with their ailments and so on) is ultimately arbitrary; many of the services just listed do more to increase family welfare than services formally counted as economic...Although these problems have long been recognised in the literature on national accounts, they require a new a more pervasive significance when one begins to concentrate on the poor in predominantly rural countries."

Specific problems of data collection arise in the study of rural women. Not only are women metaphorically hidden from official statistics, they may also literally be hidden from outsiders (for example, Abdulla and Zeiderstein (1978). Some problems of using time allocation and decision making analysis as methods to measure women's contribution to agriculture are discussed by White, 1984, and Dixon-Mueller, 1985.

Two conceptual issues which are important in the assessment of women's role in agricultural and rural development, and which are

of special significance to the present study are the definition and measurement of women's status, and gender divisions of labour.

i. Women's Status and Female Heads of Household

Difficulties arise in measuring women's status. Status is difficult to define, and it is important to recognise that women are not a homogenous group; indeed, the concept of status has often been used as an alternative to, or in deliberate avoidance of, the concept of class. The objections to a concept of women having a single, definable status apply also to the idea of women as a class. Loutfi (ILO 1980) defines status in terms of:

"the degree of women's access to and control over material resources, including food, income, land and other forms of wealth, within the family, in the community, and in society at large. It is measured de facto rather than de jure, both in absolute terms and relative to men."

Status may be measured in terms of distribution of resources and power as well as in terms of roles. Bastor (1981) provides a useful framework for the measurement of women's participation in development, where status and roles are defined in terms of rights and responsibilities. Economic status includes the concept of security of livelihood, which would include both family and individual income and assets, but the emphasis is put on women's individual status in terms of occupation and command over income and resources. Social status is considered primarily in terms of position and influence in the family, and political status in terms of position and influence in the community and in national affairs.

One of the most significant concepts with regard to women's status is that of female heads of household. Recent studies have shown that the number of women-headed households is increasing in many parts of the world, and that this is strongly associated with with

low economic status, unemployment and poverty. Many authors (for example, Moore, 1988, Wisner, 1988) state that these households represent the poorest in the world. The prevailing view is that in rural areas in Africa, the high incidence of female headed households is caused primarily by male labour migration (there is evidence that more women are choosing to live in these households, but this appears to be a more urban phenomenon, see Nelson 1978, Jiggins 1986). There is also the suggestion, that increasing socio-economic differentiation in rural areas is producing a group of female headed households (Moore 1988); changes in kinship systems and the organisation of agricultural production have meant that many poor women have lost the security provided by former kin networks and relationships. Whilst it is true that many female headed households are very poor, as Peters (1983) points out, it is dangerous to fall into the trap that concludes: lack of males = female headed = marginal = poor. Although the situation is more complex, it may be fair to conclude that female headed households in rural areas are disadvantaged in a number of ways, including lack of access to land and other productive resources, have high dependency ratios, reduced access to diverse income sources and off-farm income, and may be subject to greater labour constraints. Ahmad and Loutfi (1983) highlight some of the difficulties of measuring the number of female headed households, and there may be confusions in identifying de facto as well as de jure female headed households. Certainly, authors differ in their definitions: Barnes for example distinguishes between households headed by married men, married women, and unmarried women. Hudgens (1988) describes how Farming Systems Research and Extension team in Zambia overlooked farm households headed by women. Hansen (1988)

maintains that most surveys will only give an estimation of female headed households at any one time; a static view, and proposes that many women may be household heads at certain times in their life, implying that household composition is flexible.

ii. Gender Divisions of Labour

Many authors have used the gender division of labour within farming households as a starting point in the analysis of the role of women in agriculture and rural societies.

Boserup's typography (1970) of subsistence cultivation has been most influential, and first highlighted the importance of women in agriculture and development. Boserup distinguishes between male and female farming systems, relating them to population density, technology and type of cultivation. Female farming systems, most prevalent in Africa, are characterised by abundant land, low population density and the use of the hoe as the main implement for cultivation. Apart from tasks like the clearing of land for cultivation, food production is primarily the responsibility of women.

According to Boserup, women in this system have a high degree of mobility, the ability to market surplus which enables them to acquire their own cash, and are responsible for supporting themselves and their children with varying degrees of assistance from their male spouse. Polygyny - which enables men to expand the amount of labour available for work on their land - is prevalent, as is the paying of brideprice which, Boserup asserts, reflects the economic value of women.

Goody (1976) takes a structural/historic approach and relates women's contribution to agriculture with kinship systems and modes of transmitting property. He found that female predominance in hoe

agriculture in Africa is accompanied by homogeneous inheritance (property is transmitted to members of one's own clan or lineage of the same sex), polygyny and bridewealth. This is compared with the systems of plough agriculture, associated with male farming, bilateral inheritance (property goes to children of both sexes), monogamy and dowry payments as found in Eurasia. The approach has been widely criticised for trying to explain differences in kinship patterns between very broadly defined areas, and for trying to understand kinship and systems of production solely in terms of property rights.

Decision making models normally employed by agricultural economists fail to provide analytical frameworks defining the gender division of labour. Evans (1988) and Ellis (1988) offer some analysis, in the form of the New Home Economics. In the New Home Economics, the division of labour is explained by static comparative advantage in the maximisation of household welfare. This means that individual household members specialise in those tasks at which they are relatively more efficient compared to other members. For example, if men and women are equally efficient at household chores, but men receive higher wages than women in the market, then men go out to work and women stay in the home. Allan Low (1986) uses this idea of comparative advantage to explain off-farm wage work by men, and the stagnation in farm output in Southern Africa. Although comparative advantage may go some way towards explaining the division of labour and resources in the home, it does so in accordance with rules that ignore the social relations of the household (see Evans, 1988).

Despite criticisms of Boserup's typography (for example Palmer, 1977 considers that it underestimates the contribution of women's

labour in so-called male farming systems, women still seem to do most of the work, and by Beneria and Sen (1981) who maintain that in ignoring the role of women in reproduction, it fails to address the basis of women's subordination), after twenty years it is still accepted by many as the basis of analysis. However, all the models described above still assume a household with a male head. Cloud (1985) recognises the complexity of traditional agricultural systems, and identifies five common patterns of women's agricultural responsibilities, which make explicit the significance of households headed by women. The five patterns outlined by Cloud are:

1. Separate Crops: Men and women are responsible for the production and disposal of different crops within the household production system.
2. Separate fields: Women produce the same crops as those controlled by men but in different fields. Such crops are usually for household consumption, but some may be marketed.
3. Separate tasks: Some or all of the tasks within a single cycle are assigned by gender. Common task assignments include: men prepare the ground, women plant or transplant the crop.
4. Shared tasks: Women and men undertake the same tasks on the same crops. This may overlap with other patterns to varying degrees. Some systems are marked by jointness in most tasks, in others only labour intensive tasks such as weeding and harvesting are shared.
5. Women managed farms: There are two types, de facto and de jure. In de facto systems, men work away from the farms for days, weeks or even years, leaving women to manage them in their absence. Women are in many cases effective farm managers, and although many

of these farms may command significant resources, women lack the authority to sign credit agreements and commit resources. De jure women headed households consist of those women who are widowed, divorced, abandoned or never married, and who will have responsibility for all farm tasks. They tend to be amongst the poorest rural households, underresourced and suffering serious labour constraints.

In patterns of separate crops and separate fields, women are likely to be responsible for management, labour and disposal of production. Production is primarily for household consumption, but there may be significant surplus for sale. Labour exchange is common in these systems, but paid labour less so. In patterns of separate tasks and shared tasks, women's labour may be either unpaid family labour or paid wage labour. On family farms, management of this labour is likely to be a shared household responsibility. Control of proceeds is variable and usually complex. For women managed production systems, women are more likely to control proceeds and usually provide most of labour, although they may also hire labour or supervise the labour of younger household members. Most agricultural households display mixed patterns of responsibility and control, combining production cycles for which one sex is primarily responsible with those where responsibility is shared. Sources of variability may include the participation of children in various tasks, seasonal shifts, and may depend on class or socio-economic status.

Whitehead (1984) makes a distinction between "gender-specific" and "gender-sequential" farm work. In gender-specific systems, women work their own plots, separate from men, and carry out all seasonal activities from sowing to harvesting. In gender-

sequential work, women and men work the same land, but there is a seasonal or task-specific division of labour.

Empirical evidence from the host of studies that exist would indicate that in much of sub-Saharan Africa, a combination of these systems exist. In many cases, women may be responsible for the marketing of smaller amounts, particularly surplus food crops and be free to dispose of any income, whilst men market cash crops, regardless of whether women have contributed most or all of labour inputs. Table 2.1 shows the division of rural labour by tasks for all Africa, illustrating the generalised pattern.

TABLE 2.1 DIVISION OF RURAL LABOUR BY TASK, BY SEX: ALL AFRICA

	% OF TOTAL LABOUR HOURS	
	MEN	WOMEN
Cuts down forest, stakes out fields	95	5
Turns the soil	70	30
Plants seeds and cuttings	50	50
Hoes and Weeds	30	70
Harvests	40	60
Transports crops from the fields	20	80
Stores crops	20	80
Processes the food crops	10	90
Markets the excess	40	60
Carries water and fuel	10	90
Cares for domestic animals	50	50
Hunts	90	10
Feeds and cares for the family	5	95

Source: FAO, 1984

FAO (1984) identify five factors which influence women's roles in agriculture; seasonality, stage in the family life cycle, socio-economic status, and penetration of market economy.

Seasonal variation in the agricultural timetable and in domestic water supplies poses special problems for rural women. The seasonal peak for women's work in agriculture, weeding and

harvesting, coincides with the wet season, when family food stocks are at their lowest and specific illnesses, for example malaria, occur more frequently. Janice Jiggins (1986) shows how poorer women are particularly prone to seasonal uncertainties and calamity. The degree to which male and female tasks are switched in response to seasonal bottlenecks is variable, although Palmer (1981) observes that children's labour, especially daughters', is usually more significant than men's in easing work bottlenecks. Some studies indicate that women's labour during such periods, particularly weeding, may be the main factor determining level of production, or major constraint to increasing productivity. Detailed studies of the effects of seasonality are provided by Chambers, Longhurst and Pacey, 1981, and in IDS Bulletin 17.3, 1986.

Women's activities in production and marketing are strongly influenced by the stage of the family life cycle. The presence of small children inhibits women's labour availability and mobility unless they are part of extended or multi-generational households, such that crop mix and net household income may be affected. Households at a later stage in the family life cycle have fewer dependent children and more labour available for both agriculture and off-farm income generation, and these households may have accumulated greater assets.

As noted earlier, the percentage of households headed by women is increasing in developing countries; according to Buvinic and Youssef (1978), the incidence of de jure female headed households is approximately 22% in sub-Saharan Africa (corresponding figures are 20% in the Caribbean, 16% in the near East and 15% in Latin America). The proportion of de facto female headed households is

larger, up to 63% in Southern African states with a high rate of male labour migration. Female heads of households are more likely to work for wages in agriculture than are other women, whatever their socio-economic status, and extension, cooperative and credit support are less available to women household heads than for men. Involvement of women in agriculture, both waged and unwaged is greater for poorer families (Ellis, 1988); women's share of work in agriculture is greatest for small farmers. In poorer households women's access to independent sources of income is particularly important for family welfare, for example, improvements in childhood nutrition are more strongly associated with increases in mothers' incomes than they are with increases in aggregate income (see for example IRRI 1985).

Introduction of cash crops changes the pattern of household labour allocation by diverting labour from subsistence crops. At the same time, penetration of the market economy creates new cash needs for school fees, medicines and purchase of supplementary foods. Where women are expected to provide labour for cash crops, they have less time available for subsistence agriculture. The income from cash crops often comes under the control of men. These factors are further examined in the following sections.

2.4 Women and Agricultural Development

In 1970, Boserup identified a decline in women's status with agricultural development. She makes an explicitly evolutionary argument which identifies population pressure as the engine which propels agricultural intensification and technological change. The unfolding of this scenario removes women from control of land and other productive resources, thus marginalising them, and constraining their productivity:

"As agriculture becomes less dependent on human muscular power, differences in productivity between the sexes might be expected to fall. In actual fact, this is far from the case. Men monopolise the use of new equipment and modern methods...In all developing countries, and most industrialised countries, women perform simple manual tasks in agriculture while more efficient types of equipment, operated by animal or mechanical power, are used primarily by men. Often men apply modern scientific methods of cultivation to cash crops while wives continue to cultivate food crops by traditional methods. Thus, in the course of agricultural development, men's labour productivity tends to increase while women's remains more or less static...The tendency toward a widening gap is exacerbated by the fact that it is cash crops men are taught to cultivate." (1970:126)

Ben Wisner (1988) examines how commodisation, privatisation and marginalisation have affected women. As more money is needed to satisfy the family's needs, the crops grown are less capable of filling the money gap every year as the terms of trade deteriorate. Wisner describes these effects as a "reproductive squeeze". Women feel this pinch disproportionately, through their subsistence food production activities, responsibility for water and fuel provision, and the commoditisation of goods and services such as gathering of wild foods and medicinal herbs performed by them. Wisner examines these effects with special reference to the availability of, and access to fuelwood in contemporary Kenya.

Pala (1983) observes a series of changes since Independence in the division of labour by sex in a study conducted in Western Kenya. Women are doing more of the tasks formally known to be men's tasks. The opposite trend is not obvious. Tasks now done by women include clearing of bush, ploughing, and even constructing granaries. Table 2.2 shows farm task allocation, highlighting the increased workload of women.

TABLE 2.2 FARM TASK ALLOCATION AMONG THE JULUO

TASK	SELF	HUSBAND	SELF & HUSBAND	HIRED & SELF	CHILDREN	SELF & CHILDREN
CLEARING BUSH	28.15	37.04	10.37	14.81	3.70	4.44
PLOUGHING	2.96	31.85	4.44	51.85	4.44	2.22
HAND DIGGING	62.22	2.22	25.93	5.19	1.48	2.96
PLANTING	60.00	-	24.44	9.63	-	5.93
WEEDING	54.81	-	18.52	18.52	1.48	6.67
HARVESTING	61.48	5.93	11.11	8.89	1.48	7.41
BUILDING GRANARY	6.67	55.56	3.70	21.48	2.96	3.70

Source: Pala (1983:80)

Pala observes a growing differentiation among households between those who have cash to hire labour as opposed to those who need cash and must sell their own labour. It appears that the labour is hired by and large to enable women to accomplish subsistence tasks. Women hire male labourers to do "male type" jobs - ploughing, using donkeys for transport - and women for "female type" jobs - weeding and digging. Households also exchange labour in the form of mutual aid based on friendship and kinship. Pala notes differentials in the patterns of monetarisation of farm tasks in such a way that tasks like ploughing (a men's job) are better remunerated than tasks such as weeding, which are the responsibility of women. The next section examines in more detail the effects of specific development policies.

2.5 Effects of Development Policies

How the processes of privatisation, commoditisation and marginalisation undermine women's roles and status is illustrated by numerous case studies. Some examples of the effects of certain development policies relevant to the present study are briefly reviewed in this section.

i. Land Reform

Of all the resources necessary for subsistence (other than one's own labour), by far the most important is land. Although evidence is far from complete, it seems generally true that in pre-colonial societies women controlled important areas of land; they decided on its use, either alone or in consultation with men, and they controlled the distribution and use of products grown on the land in question. Changes since Colonial times have eroded these rights and alienated women from land, undermining access and control of its use, and disposal of products. Land adjudication and privatisation policies have frequently resulted in men being given title deeds.

Achola Pala (1980) suggests that in pre-colonial pastoral or agricultural economies, women were usually well protected economically because of their usufructuary rights to land and cattle. These rights were not only well defined, but actually more effective than individual ownership. The normative emphasis on usufruct extended also to other resources such as fish, game, salt licks, water, herbs, fruits and vegetables, fuel clay and thatch. This favoured the individual rights of all kinds of people, and since productive labour held precedence over formal ownership, the system guaranteed control over the products of land and other resources to all those who were working.

In a study of changes in land tenure systems among the Juluo of Western Kenya, Pala (1983) shows how transfer of land rights to individual lineage members - usually men - affects women's relationships to land; this has implications for the agricultural work done by women, their control over produce and access to development resources. Allinson (1985) maintains that land

privatisation - linked to the disintegration of extended family systems - is a factor contributing to the growth in landless female heads of household, and the concentration of these units in least productive land spaces. As both a cause and effect of increased differentiation in rural areas (see also Barnes 1983), state policy, privatisation, the rise in individualism and increased impoverishment have all reinforced the tendency toward smaller, less extended households at the cost of reduced diversification of production within the household and diminished sources of farm and non-farm income.

In a semi arid area of Kenya, Graham (1989) links increased privatisation not only with detrimental effects on women, but also with environmental degradation and increasing poverty. Caplan (1981) demonstrates how land reform - land registration - policies, resettlement and villagisation have deprived women of all the beneficial elements they previously enjoyed under traditional systems of land tenure in Mafia Island, Tanzania. The study shows how a complex network of social, cultural and, in an Islamic Community, religious, factors interacted to provide a stable beneficial system for all members of the community. The assumptions of production and consumption units based on households headed by men was alien to the culture, to the extent that no word existed for a family consisting of a nuclear unit of man, wife and their children. Rogers (1980) blames the western ideology of private ownership and patrilineage influencing land reform programmes:

"In many cases...women lose their rights to land because these are not recognised within simplistic male ideology of outright ownership" (1980:126).

Registration of land, and giving title deeds to men may also

result in women losing access to credit and other inputs, or membership of cooperatives and producer organisations.

Settlement schemes and irrigation projects have also been severely criticised for depriving women of traditional control and access to land. At Mwea Rice Settlement Scheme in Eastern Kenya, Hanger and Moris (1973) found that women were highly dissatisfied with life on the scheme. The women complained of hunger amidst abundant rice crops, growing difficulties in finding either time or money to provide the family with fuel and water, and to work on their husbands rice plots. Rogers (1980:183-4) proposes these problems arose as a result of the scheme planners making a series of erroneous assumptions. First, the scheme authorities treat the male head of household as the principal labourer and decision maker. Secondly, the exclusive social goal was seen as raising tenants' income; it was assumed that raising income would automatically improve physical and social welfare by creating a market demand for services. Thirdly, it assumed scheme families would eat rice, and they were allocated no other land for any other crops. Fourthly, it was assumed that families would buy other foods with the money earned from rice sales. Together these assumptions produced an impossible situation for women. Similar problems have been reported on other settlement and irrigation schemes (see Dey 1981, Jones 1983, IRRI 1985).

Programmes involving changes in rights to land are shown to not only strip women of their access and control over land as a productive resource, but also to initiate a whole range of effects which are detrimental to women. Changes in the gender division of labour may increase women's workload or deprive women of rights to dispose of products and subsequent remuneration. Some policies

have been shown to have a detrimental effect on child nutrition and welfare (for example by Wisner 1988, and IRRI 1985, but disputed by Kennedy and Cogill, 1988). Other effects include the loss of women's income generating activities, or limiting women's access to wood, water, and other previously free goods.

ii. Cash Cropping

Kate Crehan (1984) describes some of the effects of commoditisation on women in Zambia. Commercial maize cultivation was initiated on men's farms, extension officers contacted men who had access to a whole range of inputs; improved seed, fertilisers, use of tractors. New techniques were adopted by the men on their fields, including planting in rows, grain was stored in sacks and sold to the marketing board at a fixed national price. Women were still responsible for subsistence maize production in their own fields, and any surplus that they had was sold locally. All inputs and services were targeted to men. Crehan describes how the whole local economy changed as it became increasingly commoditised. Reciprocal obligations, which traditionally involved the transfer of surpluses, began to break down, and concepts of waged labour and hiring of services were introduced. Men entered more readily into the cash economy, leaving women with fewer opportunities for income generation, and women's status compared to men declined.

Henn's study of women farmers (1983) compares the extensive farming system of the Beti people of Southern Cameroon with the intensive farming system of the Haya in Northwestern Tanzania. In both systems the introduction of cash crops was found to increase women's work burdens. Men grew cash crops (cocoa in Cameroon, and coffee in Tanzania), and women concentrated on subsistence production. However, whilst men ceased to help on food crops,

concentrating their labour on cash crops, women were expected to help out on men's crops. Table 2.3 shows the annual labour times for men and women.

TABLE 2.3 ANNUAL LABOUR TIMES OF BETI AND HAYA FARMERS

CATEGORY OF WORK	HAYA		BETI	
	MEN	WOMEN	MEN	WOMEN
AGRICULTURAL WORK (HOURS)	920	1100	760	1300
FOOD CROPS	(450)	(1040)	(220)	(1240)
EXPORT CROPS	(470)	(60)	(540)	(60)
OTHER WORK (HOURS)	1050	1500	1060	1350
TOTAL WORK PER YEAR (HOURS)	1970	2600	1820	2650
LABOUR HOURS PER DAY AT				
250 WORK DAYS PER YEAR	7.8	10.4	7.3	10.6
CASH EARNINGS 1964/65 \$	75	5	132	38

Source: Henn (1983:1046)

Women do not receive any share of the income from cash crops as they have no rights to the land on which they are grown. Henn observes that according to economic theory, men are making rational economic decisions in shifting their labour from subsistence to cash crops, which provide higher returns to labour; women are not. Anthropologists have shown that African women's range of economic choice is drastically curtailed by custom and patriarchal power. Henn asks whether this could be why economists so frequently ignore women's role in food production; if women really do not have any choice about how they conduct their economic activities, then they do not fit well into economic models. Henn's more recent research in Southern Cameroon (1988) exposes further disparities in economic returns between women and men producing marketed food crops and cocoa. Women are working for lower returns to labour, but don't have an effective choice because of their responsibility for subsistence production.

iii. Technological Innovations

Development planners have often assumed technological solutions to problems of low productivity and poverty in rural areas of developing countries. Early technological interventions involved the transfer of western technologies and, in agriculture, attempted largescale mechanisation. Studies now abound concerning the relationship between women and technology (for example, Dauber and Cain 1981). Authors (see Rogers 1980) comment that men's agricultural tasks appear to be more easily mechanised than women's. Experience has shown that many technological innovations, for example mechanised ploughing, especially if combined with the use of fertilisers, necessitate more weeding, thus increase women's work load. In many cases, technologies have been developed for, and disseminated to men, in the belief that rural women are unimaginative, highly conservative and generally backward (Safai, 1984). Other problems arise when improved technologies are used by women, men take control of them. Such technological innovations are often linked to other changes in agricultural systems; to cash crops, cultivation practices such as monocropping, use of purchased inputs and high yielding varieties (HYVs). These types of innovations are often capital intensive, lumpy investments, which makes them unaffordable to the poor and to women (as reported by Henn 1983). Sinha (1983) describes the technological marginalisation of women, where the transfer of western style technology has resulted in an increasing productivity gap between men and women which has been linked to a decline in women's status.

Once again, the experiences of the Green Revolution highlighted many of the pitfalls of introducing new technology. Sinha (1983)

and Dixon (1978) show how the agricultural advances of the Green Revolution have increased the work requirements of women in rural Asia. In India it was found that, in terms of casual labour, HYVs increase the need for women's labour from 53 days to 63, while that of men fell slightly from 19 to 18 (Rogers 1980:171). In North India the Green Revolution not only expanded women's work in cultivation, but since there was no longer any grazing land left fallow, the women also had to carry green fodder daily to cattle from the fields. It is only recently that planners have become aware that improved pre-harvest techniques can result in severe bottlenecks if the women are left to cope with processing the increased output with tools inadequate for the task.

iv. Extension and Dissemination

Kathleen Staudt (1974, 76,78) has carried out extensive research on the effects of Government agricultural policy and extension service on women farmers in Kakamega in Western Kenya. Her work highlights the unequal delivery of services, in terms of visits by extension staff, training through the use of demonstration plots, attendance of training courses and loan acquisition, between male and female farmers. Her research proves that the omission of women from these services is not necessarily because they are not "progressive" farmers; Staudt's findings indicate that women farmers are just as likely to be early adopters of innovations as men (in fact they may be more likely to innovate), and female managed farmers are not significantly poorer than male or jointly managed farms. Staudt concludes that whilst biases against women increase with intensity as the value of the services increase, it makes little difference whether women have high economic status, large farms, or have shown a willingness to adopt agricultural

innovations. Despite these inequalities, female managers appear to be as productive and as adoptive as male farmers.

Moock's analysis (1976) of the efficiency of women farm managers in Western Kenya found that women farmers produced similar yields as men, although they used significantly lower levels of purchased inputs (chemicals and seeds). Labour inputs were slightly higher for women, but the analysis shows that women make better use of labour - have higher yield returns to labour - than men in maize production. Moock also found that women did not seem to benefit (in terms of yield) from extension contact, although men did. Moock comments that this may be due to marked male orientation of the Ministry of Agriculture service. The conclusion of the research was that women are more technically efficient maize farmers than men.

Chipande (1987) and Spring (1988) provide studies of the extension service in Malawi, where approximately 28% of rural households are headed by women. Spring found that men receive more services than women, and that wives of male household heads receive more services than female household heads. Very few wives received agricultural information from their husbands: the presumed transfer of technology from men to women did not take place. This was especially true for crops or tasks which are gender-specific. Weidermann (1988) has pointed out that not only do women have very limited access to agricultural extension programmes, but often those who do receive extension are taught home economics and other subjects unrelated to their agricultural roles.

There are a number of reasons for the almost universal discrimination against women farmers in the delivery of extension and other agricultural services. First, the underestimation of the

true numbers of women households head, and the reliance on the household as a conceptual unit for production, research and targeting of services. Secondly, the often mistaken belief that women farmers are not innovative; that they are backward and conservative (this may be related to women's lower levels of formal education). Thirdly, the fact that some households headed by women are poorer; they may have smaller areas of land, less available labour, and less capital, and studies (for example Leonard 1977) have shown that extension services may discriminate against poorer farmers. Fourthly, the advice and inputs provided by the extension service may in fact be inappropriate for women and poorer farmers. Advice often concerns cash and export crops ("men's crops" in many places), and may be linked to the use of purchased inputs and "packages" which are expensive, or advocate cultivation practices which may increase women's work burdens and other labour inputs (see for example, Hunt, 1984). Some authors (for example Lele, 1975) have blamed the lack of extension delivery to women farmers on cultural mores which make it socially unacceptable, or at least difficult, for male extension agents to visit women alone on their farms. Lack of female extension agents is therefore a problem, and a remedy is to employ more women as extension agents. However, Carloni (1987) reports that AID found that female extension workers do not appear to be a major factor in reaching women farmers; both male and female extension workers tended to focus on male farmers. One reason for this was the prevailing emphasis on commercial farming and cash crops. Extension workers had few incentives to spend time with subsistence farmers. It was difficult for women farmers to travel to extension centres, and direct contact by agents of either sex

with village women was often restricted by inadequate transport. Spring (1988) also argues that the recruitment and training of women extension workers is not a remedy; men as well as women agricultural researchers and extensionists have to target farmers of both genders. Spring discusses mechanisms within the framework of Farming Systems Research and Extension by which male staff can work with women.

Many writers see the use of women's groups as just one such mechanism. However, as Munroe (1988) points out, whether working through household units, with groups, contact farmers, or village leaders, as long as women find it difficult to articulate their needs in mixed gender groups, or are not spoken for, or simply not noticed, innovations will continue to bypass the rural poor. Developing extension strategies more appropriate to women farmers is now receiving more attention (for example, Spens, 1986, and Weidermann, 1987), including the possibilities of using Farming Systems Research and Extension.

2.6 Projects for Women?

Section 2.5 showed how policies aimed at increasing rural incomes, "modernising" agriculture and increasing production have frequently benefitted men and not women. Development policies have eroded women's access and control over productive resources such as land, increased their already heavy work burdens, limited opportunities for shift in power relationships between men and women, denied access to goods and services, and created women headed households. How can the detrimental effects of development policies be overcome? Should projects designed specifically for women be introduced, or should measures be taken to integrate

women into mainstream programmes?

Bryson (1981) maintains that women's role in agriculture supported past development, but that the failure to recognise and enhance their activities is contributing to current problems with the food supply which can be overcome most effectively by working with, rather than against the women. This view implies that issues relating to productivity caused initial interest in women and Rural Development and ideas of "integrating women into development". Empirical evidence emerged identifying women's labour as the major constraint to increased production, for example the ILO Mission to Zambia (reported in Rogers 1980:160) observes:

"The general conclusion which emerges from surveys and interviews is that women are in general overworked in rural areas, that women's labour is one of the factors which determine how much land can be cultivated and how well, and that the pressure on women's time is an important constraint on raising agricultural production and rural living standards."

The view is reiterated in an AID Women and Development Policy paper (U.S.AID,1982:3):

"There is equal proof that women are often farming without benefit of the improved inputs and services required for a more productive and remunerative agriculture. The paradox is most obvious in the African setting, where it is estimated females do 60-80% of all agricultural work. Yet these same females are rarely systematically targeted for training, extension, research, technology, or improved inputs. It is predictable, then, that efforts to improve access to resources and thereby to increase productivity in the agricultural sector will need to be better directed to the female population, if goals of growth are to be achieved."

The support of women's projects is therefore defended on the premise of increased productivity, the emphasis is still on growth.

Deniz Kandiyoti (1988) claims that policies interventions aimed at rural women are justified by the following assumptions:

1. Women are de facto food producers and active participants in the agrarian sectors of the Third World.
2. Some of the main constraints on women's productivity are related to the labour time involved in their daily household maintenance tasks.
3. A reduction or freeing of labour time from household tasks implies its possible diversion to income generating activities.
4. Women's access to income is more likely to pay welfare dividends for the community at large (especially for children) than men's incomes.
5. Women's productivity and potential for income may be raised with minimal capital outlay.

Carlioni (1987) analysed data from ninety-eight randomly selected USAID projects, in order to evaluate how AID has interpreted its women in development mandate and how its policy of integrating women into development planning has been implemented. Carlioni reviews the success of women-only projects, projects with women's components, and mainstream projects that attempt to "integrate" women into their activities. It was found that women-only projects tend to be very small in scope, and disproportionately costly in terms of staff time. The chances of success can be enhanced by locating them in major (ie: mainstream) institutions, rather than in women's bureaus or local voluntary organisations. Such projects are best suited to delivering training rather than increasing production or income generation.

Women's components in larger projects can be an effective way of benefitting women if the components are well integrated into the whole range of project activities. Alternatively, if they focus only on women's domestic roles, they can lead to tokenism and

distract attention from important gender issues in the overall project.

Integrated projects require gender-sensitive design in order to be successful in achieving project purposes and benefitting women. Of the three project types, gender-sensitive "integrated" (or mainstream) projects are the most effective in promoting and utilising women's contributions to socio-economic development.

Corloni's findings show that project investments based on gender analysis can have higher returns and provide benefits to women. The returns could be greater if institutional barriers to women's participation and benefits were better understood, and projects were adapted to overcome the barriers. Women-only projects and women's components of projects may be useful in specific contexts, however, gender-specific adaptation of mainstream projects will most effectively include women in the development process and also provide a higher return to project investments. Carloni concludes that projects which recognise gender differences, adapt delivery services accordingly, and ensure substantial female participation, are more efficient and more likely to achieve their purposes. They are also more likely to achieve broader socio-economic goals. This holds true for mainstream direct-service projects in all sectors; agriculture, education, employment/income generation, energy/natural resource conservation, and water supply and sanitation.

2.7 Opportunities for Participation and Self Reliance

Many writers point to women's groups as a valuable force for the advancement of women, and as convenient vehicles by which assistance can be brought to women. It may be easier to direct

extension and training services to already established groups, for example, and the dissemination of information about technologies has been shown to occur through groups (Muzaale and Leonard, 1985, Barrett and Brown, 1989). Staudt (1978a) found that the diffusion of agricultural innovations occurred among female networks, particularly among the numerous women's communal agricultural and mutual aid associations. Staudt concludes that in the short term this strategy may be effective, but that in the long run women's associational activities may not be able to compensate for the increasingly valuable services being provided for farmers.

Ahmad and Loutfi (1983) stress the need for an organisational base if the conditions of rural women are to improve. This would act as a link between women and bureaucratic agencies, and would help to make women aware of the available services, and at the same time pressure authorities to provide facilities and resources, and attempt to ensure that these cater for women's actual needs. These organisations cannot be imposed from above if they are to be successful.

As Elizabeth O'Kelly (1982) points out, women's organisations already exist in both urban and rural areas in nearly all developing countries and these can be used by development agencies to channel resources to women, thus overcoming many of the problems associated with trying to contact individual women. FAO (1982) documents the success of women's groups in the areas of transport, credit and agriculture cooperatives, and notes the growth of national and international associations of women.

Caplan and Bujra's book, "Women United, Women Divided" (1978) provides a series of interesting case studies. In the introductory chapter, Janet Bujra argues that all women cannot be classified

together as a sociological category; within any society women are often divided against each other by class and status hierarchies as well as age and kinship affiliations, and there is a need to resolve the analytical confusion that conflates women as an immutable biological category, with "women" as a social category. She discusses the role of women's organisations, as solidarity movements, or as mechanisms which further strengthen the divisions between women and thus their social subordination. Many case studies indicate that women's groups do not represent feminist solidarity, but rather serve to promote the interests of one particular section of women, often in competition with other women within the same society.

Sociologists and social anthropologists have developed the study of networks (Nelson, 1978 provides a definition), which may be important informal support mechanisms for women. Hyden (1983) illustrates the complex support network usage by female household heads in Kenya (in this instance, in the context of Hyden's economy of affection). Nelson (1978) describes effective personal networks utilised by women in Mathare Valley in Kenya.

Jiggins (1986) notes the existence of an apparently growing phenomenon in the formation of multi-generational, multi-locational networks of households headed by women. Jiggins observes that these appear to be an emergent form of social organisation designed to spread risk and optimise seasonal management strategies in areas of high gender-specific migration, marked seasonality, and marked gender-specific livelihood opportunities. One strategy in areas where there is a developed labour market is for women from poor households to associate in specialist labour gangs to take advantage of seasonal cropping

patterns. Another mechanism is to develop semi-formalised women's groups based on existing forms and principles of female association.

Wisner (1988) discusses the limitation of policy initiatives of targeting individuals or using existing women's groups and organisations; in both cases, poorer women often miss out. Wisner comments that with only a small minority of African women effectively involved in women in development activities over the last decade, it is not surprising that the overall situation of rural women seems to have worsened. If top-down women's groups sponsored by government and the integration of women into conventional institutions such as cooperatives, long associated with male-dominated rural development, have left so many women untouched, what kind of alternative framework is possible? It is not just a matter of "reaching" the poorest women, but of sparking a process of self-organisation and self-assertion among the poorest rural dwellers in sub-Saharan Africa.

Whether aimed at individuals or groups, it may be valid to apply the same argument to targeting women as Oakley and Marsden (1984) discussed with reference to "the poor". Many "women's projects" treat the symptoms, not the disease, and fail to address the underlying structural problems of women's subordination, and specifically their limited access and control over resources. Effects of such interventions can thus never be sustained, and will not spill over to other women in the same society.

2.8 Summary

This chapter has illustrated how peasants - subsistence-based small farmers - are affected by agrarian change, and how development policies employ the processes of commoditisation,

privatisation and marginalisation to force peasants into the monetaried economy. These processes often make peasant livelihoods more precarious and vulnerable. It has been argued that these processes adversely effect women within peasant communities to a greater extent than men.

It has been shown that women are responsible for the majority of labour and food production in rural areas of sub-Saharan Africa, and that women's labour may be the biggest constraint to increased productivity. Women in poorer households, and those who are heads of households bear a particularly heavy burden. However, past development policies, particularly those aimed at increasing agricultural productivity, have often had a detrimental effect on women. Some such policies have been discussed, and related to the processes identified in earlier sections.

Development agencies have attempted to overcome these problems by "integrating" women into development, and by implementing women's projects. However, most projects are merely palliative measures, in that they attempt to treat only the symptoms, not the underlying cause of the problems. Similar observations made of projects targeting the poor; that they are "hitting an invisible target", can be made of the stop-gap attempts of women's projects. Much has been made of the possibilities of using women's organisations as instruments to aid the integration of women into development. However, whether such group represent grassroots, solidarity movements, or if they are elitist and deny access to the poor is still a subject of debate. It may be that women's groups are effective in helping women overcome contingencies and lessen the effects of commoditisation, privatisation and marginalisation. There exist many practical reasons why the

targeting of projects and inputs to groups of women rather than individuals is expedient for development agencies.

The next chapter, Chapter Three, examines some of these issues within the context of Kenya. The extent of rural poverty, and some of the policies initiatives which attempt to alleviate it are outlined. The role of Harambee, self-help groups and women's groups is discussed, and the experiences of groups in the country highlighted in order to explore some of the issues raised from this review of literature.

CHAPTER THREE

KENYA: RURAL DEVELOPMENT AND WOMEN

Although Kenya, along with Cote d'Ivoire, has often been considered a "miracle" of economic development in Africa, many writers, including Hunt, 1984, and Wisner, 1988 are suggesting an "impending crisis". Favourable economic growth during the 1960s and early 1970s has failed to bring benefits to the majority of Kenya's population, and concerns about increasing disparities in income and poverty, declining per capita agricultural production, increasing unemployment, population pressure, and environmental degradation have been voiced.

The preceeding chapter has shown how poor farmers in rural areas of sub-Saharan Africa - who may be peasants or smallholders - have often been left disadvantaged by development policies. Women within these societies are doubly disadvantaged. This chapter looks in more detail at the effects of policies in Kenya; the first part examines the small farm sector, and later sections deal specifically with women in rural areas of Kenya.

At a time when many theorists and practitioners are advocating a bottom-up approach to development as the means of resolving problems of poverty, to enhance food security and attain basic needs, this chapter examines whether such opportunities exist in Kenya. The tradition of Harambee, or community self help, has long been espoused as a participatory, grassroots movement encouraging local initiative; how effective are such strategies, which include women's groups, in fostering greater self-reliance among the rural poor, and are these supported by national policy? How does the government's policy of decentralised planning through the introduction of the District Focus for Rural Development support

local initiatives, and are the rural poor, of whom a significant proportion may be female heads of household, able to benefit from these developments?

3.1 Kenya: A Smallholder Economy

Some 85% (most authors, though Singer and Reynolds, 1976 state 90%) of Kenya's population (estimated at 20.2 millions by World Bank, 1989) live in rural areas, and the majority, some 80% of total population, are dependent on small farms (up to 15 hectares, but averaging 2 hectares in size). Coffee and tea are the main export crops; maize, livestock and dairy products are the most important foodstuffs. Smallholder cultivation of total marketed agricultural output is expanding due to increasing monetarisation of the economy. If only to a limited extent, the vast majority of farmers are integrated into the monetary system, and it now seems likely that the value of monetarised agriculture exceeds that of subsistence production (House and Killick 1983). Apart from a limited number of nomadic pastoralists in remoter regions of the country, there are few subsistence farmers in the sense of farmers who do not market any crops. Table 3.1 shows estimates of the share of smallholder cultivation in the total marketed agricultural output (averages for the periods shown).

TABLE 3.1 SMALLHOLDER PRODUCTION AS % OF TOTAL MARKETED OUTPUT

YEARS	SMALLHOLDER %	YEARS	SMALLHOLDER %
1954-59	29.2	1970-74	51.6
1960-64	37.7	1975-78	53.3
1965-69	48.3		

Source: House and Killick (1983:32)

The figures underestimate the full contribution of smallholders, because they exclude subsistence production, and because some areas officially classified as large farms have in fact been subdivided and are cultivated on a smallholder basis. Genuinely large farms are still very important however, especially in the cultivation of coffee, tea, sisal and wheat, and in ranching.

However, as cash demands increase, the low incomes attained by smallholders able to sell surplus food crops or limited amounts of cash crops are often not enough to keep their families. The next section describes how smallholders are particularly prone to poverty, and how the "rural squeeze" is exacerbating these problems.

3.2 Poverty in Kenya

Although a relatively rich country for Africa, many people in Kenya live in poverty. House and Killick (1983) describe Kenya as having a highly skewed distribution of income, with many of the benefits of post-independence economic growth having been "siphoned off by a small, but politically powerful elite" (1983:34). In 1969, it was estimated that the poorest 40% of Kenya's population received only 10% of the total income; the richest 10% received 56%; and the top 5% received 44%. Researchers have found large urban-rural (eg: Singer and Reynolds, 1976, Livingston, 1981), and inter-regional (House and Killick, 1983) inequalities.

As House and Killick (1983) point out, inequality has been built into Kenya's rural economy by the forces of nature. The country encompasses a remarkable variety of topographical and climatic conditions, of soil types and therefore of vegetation. Only a small part of the country's total land surface can be regarded as

good agricultural land, with more than 80% classified as having low potential or unsuitable for agriculture. Only 17% of the land is regarded as being of high or medium potential, most of this occurring in the southwestern part of the country.

In drawing a profile of poverty in rural Kenya, House and Killick note that special problems are faced by three relatively disadvantaged groups; women, the landless and pastoralists. The rural working poor or poor small farmer (subsistence farmers who also sell their family's labour or a high value cash crop to make ends meet) numbered over 600000 households in 1976; nearly one quarter of Kenya's 2.8 million households (Ghai et al, 1979). Many of these households are headed by women. A further 237000, representing 12% of households were found to be landless in 1976. 77% of the landless were in Rift Valley, Central and Eastern Provinces. Such landlessness is caused by the process of marginalisation which forces the poor to sell land to finance school fees, repay loans or buy food. It is suggested by House and Killick that access to non-farm income sources may be most important factor determining smallholder poverty and differentiation among rural society, so that women headed households are disadvantaged in having access to less diverse income sources.

Inequalities exist in terms of land and asset ownership. Njonjo (1981) illustrates the concentration of land ownership by analysing the distribution of land in Nakuru (formerly part of the White Highlands). 5% of owners control 79% of the land; 2% own 69% of the land. Njonjo notes that this is one of the most concentrated patterns of land ownership existing in the world today.

The highest single category of the rural poor are smallholder households whose farms are either too small or on land of too poor quality to enable them to achieve the basic needs level of income (Hunt 1984). Crawford and Thorbecke (1978) analysed data from the Integrated Rural Survey and calculated that in the mid-1970s approximately 570000 smallholder households (3.4 million people) were living in poverty. The remaining rural poor were to be found among pastoralists, squatter and landless households.

Research has shown that smallholder households are most likely to suffer from malnutrition. Table 3.2 shows those sectors of the population in Kenya most at risk from nutrition problems.

TABLE 3.2 NUTRITIONAL PROBLEMS IN KENYA, 1978

GROUP	NUTRITION PROBLEM	CAUSE	ESTIMATED NUMBER ('000)
1. SMALLHOLDERS:			
a)FOOD CROP PRODUCERS WITH INCOME<1000KSh. VIRTUALLY NO SALES	PEM	INSUFFICIENT FOOD PRODUCTION	2200
b)LANDLESS POOR	PEM	LOW REAL INCOME	410
c)CASH CROP PRODUCERS WITH INCOME AROUND 2500KSh.	Periodic PEM	LOW INCOMES WITH POOR DISTRIBUTION THROUGHOUT THE YEAR	1090
2. URBAN UNEMPLOYED AND UNDEREMPLOYED			
	PEM	LOW REAL INCOME	250
3. PASTORALISTS			
	Periodic PEM	VULNERABILITY TO WEATHER, LACK OF FOOD SECURITY	670

PEM = Protein energy malnutrition
Source: Wisner (1988:173)

Nationwide, 28% of pre-school children are stunted, and the risks of malnutrition are highest among smallholders owning less than 1.5 hectares of land (Wisner, 1988). Another review (Ghai et al, 1979) finds 37% of Kenyans malnourished.

Ghai et al (1979) present a different view of the distribution of poverty by analysing deficiencies in the satisfaction of basic needs. They examined the levels of nutrition, housing standards, health, education, water, amenity and service indicators. Table 3.3 shows the provincial ranking by various indicators. Data analysed was collected during Integrated Rural Survey I and II, and the Central Bureau of Statistics Nutrition Survey.

TABLE 3.3 PROVINCIAL RANKING BY VARIOUS INDICATORS

	amenity and service indicators	incidence of smallholder poverty	incidence of landlessness	incidence of malnutrition
CENTRAL	1	1	5	5
NYANZA	2=	6	2	1=
WESTERN	2=	5	1	3
EASTERN	4	3	4	6
RIFT VALLEY	5	2	6	4
COAST	6	4	3	1=

1="Best", 6="worst" ranking
Source: Ghai et al (1979:41)

The above table shows Eastern and Rift Valley Provinces being most deficient in the satisfaction of basic needs according to these indicators. Although the 1979-1983 Development Plan argued that "poverty is not easily identified on a regional basis", House and Killick's analysis (1983) shows that Nyanza, Western and Eastern Provinces contain 78% of all poor Kenyan households. While no area is free of poverty, its incidence is demonstrably concentrated in these regions.

3.3 Agriculture and Rural Development

It has been argued (by MacKenzie, 1986, and also Leys, 1975) that colonial policies, traced back to the alienation of millions of hectares of land from 1897 onwards, rules of employment which allowed the procurement of African labour by European settlers, and laws banning Africans from cultivating and marketing export crops such as tea and coffee, laid the basis not only of the highly skewed distribution of land between the small and large farm sector, but also for a bifurcated agricultural policy. Prior to the 1950s, policy directed to African smallholders promoted conditions to facilitate the growth of European agriculture. The impact of policies on a growing population confined to a curtailed land base, together with the imposition of hut and poll taxes, meant that the export of labour became essential for survival. As MacKenzie points out, the spatial division of labour that migration entailed resulted in women becoming increasingly solely responsible for agricultural production, and at the same time, men's integration into the cash economy provided the basis for increasingly asymmetrical gender relations.

New agricultural policies were introduced in 1954 in the "Swynnerton Plan" - "A Plan to Intensify the Development of African Agriculture in Kenya". The Plan had three main components: a major programme of land reform; increased availability of credit; a re-orientation of research, extension and marketing bodies. This strategy remained the basis for colonial policy until Independence in 1963, and for some years afterwards. There were some changes after Independence; many white owned farms were transferred to African ownership, often for smallholder cultivation, and the government initiated livestock and water

development programmes. However, the share of government spending on agriculture declined, symptomatic of a national development policy with a pronounced urban orientation. At the same time, it became clear that within agriculture, policies were creating an indigenous capitalist rural economy (Kitching, 1980). The strategy had numerous biases in favour of "the energetic or rich African" build into it: research and extension services were strongly biased in this direction, the marketing system was more efficient for export crops and served large-scale farmers better than small, and credit policies contained similar distortions (House and Killick, 1983). Implicit in this was acceptance of a "trickle-down" view of development; an assumption that, in reasonable measure, all would share the benefits of increased production without any special need for state intervention. Kitching (1980) summarises the impact of efforts prior to 1970: a group of smallholders - roughly two-thirds of the total were "left out in the cold" by an "agrarian revolution" that from the mid-1950s opened new cash crop markets to Africans, consolidated and privatised land ownership, and introduced yield-increasing technologies.

Wisner (1988) criticises the "production-first" strategy applied to Kenya, maintaining that the marginalisation of smallholders has been accelerated by development policies (see Hunt, 1984), driving small farmers to greater reliance upon cash crops, and that this has important implications in terms of food security.

More recently, Sessional Paper no 1 of 1986, "Economic Management for Renewed Growth" (Republic of Kenya, 1986a) represents a major policy statement in response to a series of economic crises faced by the country - the oil price rises of the 1970s, the decline in

Kenya's terms of trade, domestic inflation of the early 1980s, the world recession of the same period, and the devastating drought of 1984. The document recognises that economic growth in Kenya has slowed to the point where average incomes have barely risen since the late 1970s, the need for job creation and provision of basic needs, and the importance of the agricultural sector. However the strategy is still growth orientated, stressing the need to sustain growth through raising productivity and incomes of small farmers, herdsmen and workers in the informal (ie: very smallscale) sector - occupations which employ over 70% of the entire workforce, and include virtually all workers from low income families.

Three policies are of significance to the present study; the agricultural extension service, the Arid and Semi-Arid Land Development Programme, and the District Focus Rural Development Planning Policy.

i. Agricultural Extension

The State provides a range of economic services intended to contribute to the development of the agricultural sector. These include research and extension, the provision of credit, the distribution of inputs, and the provision of statutory corporations of output marketing facilities. All of these are important and are able to influence the distribution of incomes and poverty in rural areas, however, the agricultural extension service acts as a linchpin, being the mechanism by which innovations and services are brought to small farmers in rural areas.

The Government has chosen to concentrate a large amount of investment into the agricultural extension service. David K. Leonard (1977) has produced a comprehensive study of the

agricultural extension service, stressing its importance as a "linkage" mechanism for agricultural development, linking research to farmers, transmitting new technologies to farmers and increasingly, linking the cultivator with supplies, credit and markets. Leonard studied the problems within the organisation of the extension service, and Schonherr and Mbugua (1976) discuss techniques for managing agricultural extension staff. Also of note is work by Chambers (1974), Lele (1975) and Hunt (1974, 84). Staudt's work (1974,76,78), already reviewed in Chapter Two has demonstrated how extension services discriminate against women farm managers.

The present extension system was initiated in 1983. Before then, the extension system worked by design mostly with men farmers. After a pilot undertaken in Nandi and Kericho Districts in 1982-83, the Government decided to establish a stronger national service of extension based on the "Training and Visit" system (see Benor and Harrison, 1977). Under T&V extension agents regularly visit selected "contact farmers" on their own land. They provide technical messages which contact farmers can put into practice. T&V aims to select about one-tenth of farmers to be contact farmers. The selection is made either by extension agents or by local communities or leaders. Contact farmers are expected to adopt extension messages and persuade others to adopt them also. Several "follower farmers" are supposed to join the visits, so that the message spreads to the community.

The T&V system is established to some degree in Kenya's 30 High Potential Districts. There is still evidence that T&V is biased in favour of richer farmers (World Bank, 1989).

ii. Arid and Semi Arid Lands Programme

One of the principal emphases of the 1979-83 Development Plan for Kenya was the development of the arid and semi-arid lands (ASAL). Nearly 25% of Kenya's population reside in these areas, which cover 80% of the country's land area. In the past, government has concentrated on developing higher potential areas. Campbell (1981) identifies four factors which have contributed to increased interest in the development of the ASAL:

1. The planned and spontaneous migration and settlement in the ASAL as a result of pressure on land in high potential areas.
2. Continued concern with problems of famine and overgrazing in the ASAL and the growing demands for cattle products have led to a desire to improve the rangeland economy and to implement range management plans to conserve the environmental and wildlife resources of ASAL.
3. Security concerns encourage efforts to gain administrative control over nomadic peoples, preferably through sedentarisation.
4. Efforts to control the spread of desertification.

A common theme of these development strategies is the encouragement of cultivation at the wetter margins of the ASAL. These areas, according to Campbell, represent an "interface" between the sedentary farming of the higher potential lands and the pastoral and wildlife economies of the semi-arid rangelands. The interface is a zone of competition over the control of resources available at the wetter margins of the rangelands. Such competition is, in most cases, a relatively recent phenomenon, being a consequence of the migration of farmers from over-populated areas of high potential to lower potential areas, which has taken place over the past twenty to thirty years.

USAID funded a comprehensive study of Kenya's marginal lands which was published in 1978. It was followed by an official Government of Kenya policy paper (Republic of Kenya, 1979) on ASAL, defined as those areas with between 200-850mm of rainfall per year on average. The ASAL policy declares its strategy to be the improvement of the welfare of the populace by:

- a. developing productive potential;
- b. creating income-earning opportunities;
- c. providing basic needs.

Activities are implemented by relevant line ministries, and are sponsored on an area basis by multilateral and bilateral aid agencies including the World Bank, EEC, ODA, NORAD, USAID (Wiggins, 1985). There are great differences in the various programmes, in terms of scale, activities and implementation. More details of the programme operating in the study area, the Embu-Meru-Isiolo Programme will be discussed in subsequent chapters.

iii. Decentralisation and District Focus for Rural Development

Assessing the problems of rural development in Kenya in the post-Independence era, the Working Party on Government Expenditures (1982) chaired by Philip Ndegwa, focused on problems associated with a top-down strategy of rural development, and in particular on administrative and managerial aspects. The report highlighted weaknesses in the system of administration at provincial and district levels, specifically:

1. An excessive growth in numbers of government officers, particularly at the level of provincial headquarters;
2. The rapid growth of the provincial administration, when many activities could more appropriately be carried out at district level;

3. The overspecification of staff and the correlated lack of coordination between staff of different ministries;
4. The lack of devolution and uneven devolution of decision making power from Nairobi;
5. "Multiple administration" and the duplication of efforts between ministries and different administrative levels.

The analysis indicated that the most serious result of this top-down strategy to the administration of rural development is not the wastage associated with inefficient administration, but rather the "unrealised development opportunities" of the rural population. The report states that:

"There is too much emphasis on the provision of services and too little emphasis on involving people and their resources in the development process. Yet, because officers in the field identify more with their superiors in Nairobi than with the people of the district, even the provision of services is carried out negligently and without dedication to, or respect for the people being served. Distance precludes the adequate enforcement of discipline and accountability. Family, farm and national development all suffer as a result" (1982:52-53).

The Working Party suggests that the problems identified could be overcome without a radical overhaul of administrative structure. In this context, they proposed the district as the unit for administrative accountability and the central point for the management and implementation of rural development. The District Focus Strategy developed from the recommendations of the Ndegwa report, and was elaborated in the District Focus for Rural Development (Republic of Kenya, 1983b), and its principles are contained in the Development Plan 1984-88.

District Focus was launched by the Kenyan Government in 1983. The new measures were introduced in order to achieve greater coordination of development activities, to remove bottlenecks in

plan implementation, and to provide an institutional framework for the coordinated management of rural development planning. The District Focus policy involves a transfer of responsibility for the implementation of local (District-specific) projects from Ministerial headquarters in Nairobi to field officers. This responsibility includes the authority to spend money allocated to local projects without having to refer back to headquarters for approval, and for field officers to implement projects for which funds have been allocated without further consultation. District Tender Boards' powers are also enhanced, allowing them to make final decisions on the procurement of supplies and services. It is hoped that most of the inputs would be supplied locally to encourage development of the local economy. In this way, the District Development Committees (DDCs) have been given a greater focus to coordinate development activities. The Executive Committee of the DDC has a small planning unit responsible for the day to day coordination of planning and implementation. At the sub-District level, Divisional Development Committees have responsibility for "assembling initial project ideas, sorting them according to local priorities, and forwarding them to the DDC for more formal review and assessment" (Republic of Kenya 1983a). Under the District Focus Policy, the Government has noted (Republic of Kenya 1983b) that "...all projects of every local authority are subject to DDC decisions". In order to ensure sound financial management, local authorities are required to produce forward budgets and 5 year Development Plans similar to Central Government.

A major objective of the District Focus strategy is to increase communication between the local community and government officers

working in the districts. The revised document (1987:8) states;

"it is the responsibility of the DC and DDC to ensure that these mechanisms are effective in promoting increased community level inputs into the formation of District Development Plans and annual Annexes".

The concept of local participation revolves around the involvement of self help groups; selected members of local self help groups and other non-government organisations may be invited to sit on the DDC on an ad hoc basis. District Focus stipulates that women's organisations should be "adequately represented" in the DDC, Divisional Development Committees (DvDC), Location Committees (LDCs) and Sublocation Committees (SLDCs). The DDC has a coordination role:

"The District Focus strategy is intended to facilitate local initiative by creating opportunities for coordination with ministry efforts. Self help contributions of money, labour, and materials can be substantial in the overall context of district-specific rural development. DDCs should coordinate their use so that these local resources are efficiently and effectively used to compliment other resources" (Republic of Kenya:1987:14).

Can District Focus be regarded as a move towards a more bottom-up, "people centred" approach to development, and can it support efforts for increased self-reliance by the rural poor, and specifically women? The original rhetoric of the Ndegwa report would suggest this, but how does the policy work in practice; has it made any difference to the initiation and implementation of development projects at a local level, and how effective is the DDC as a mechanism for bringing about a more participatory, locally controlled policy and decision making?

MacKenzie and Taylor (1987) assess the role of District Focus as an interface between local and national development. They argue that although the District Focus strategy has theoretical potential to alter basic relationships in a positive way, this is

unlikely to occur for a number of reasons. First, the limited nature of local, and particularly non-elite, participation in the DDC. Secondly, lack of an effective mechanism to link or integrate existing local organisational forms with the DDC. Thirdly, the lack of a mandate to foster local organisation. Fourthly, the fact that final control over a significant portion of budgetary resources is not held at district level. The DDC is therefore unlikely to prove to be a catalyst or "animating force" for "wilful community action". According to Oakley and Marsden's definitions of participation (1984), the District Focus strategy therefore appears to have limited possibilities for fostering local level organisations for empowerment, but may be a mechanism for procuring and coordinating local inputs into development projects.

The next section discusses local level development initiatives undertaken by the Harambee or self help movement in Kenya.

3.4 Local Initiatives and Harambee

Mbithi and Rasmusson (1977) carried out an extensive study of the self help, or Harambee movement in Kenya. They argue that the concept of Harambee is indigenous to Kenya; it was applied to the activities of a village or a neighbourhood, in the activities of age and sex groupings, and was supported by the value of mutual assistance. The concept became a national slogan, a motto on the national crest, and a rally cry on Madaraka Day in June 1963. Since then, Harambee is used to denote collective effort, community self-reliance, cooperative enterprise and all forms of collective self-help. Nationally, Harambee development effort is distinct from other development activities, and its economic significance crucial. Between 1967 and 1973 Harambee contributed

11.4% of overall national development expenditure, and over 40% of the national expenditure on education, and controlled over 62% of all secondary schools in the country. Some 43% of enrolled students in Kenya's secondary schools attended non-government, Harambee schools. Harambee contributions in the field of community development, such as community centres and recreation, exceeded government investment in most years during 1965-1972. Mbithi and Rasmusson's survey found that the most popular projects undertaken by Harambee groups were primary schools which constituted 23.5% of their sample. Nurseries made up 16.4%, cattle dips and crushes 12.9%, and secondary schools 9%. Socially orientated projects were found to constitute 70% of all projects, whether measured in frequency or investment volume, while economic projects (roads, agricultural projects, and water supply) constituted the rest.

Harambee has been interpreted in two distinct, but in part complimentary ways. First, the concept of Harambee as a solidarity movement (see Mbithi and Rasmusson 1977), and secondly, Harambee as a centre-periphery relationship. Barkan et al (1980) maintain that Harambee is a mechanism by which the periphery is able to enter into a bargaining position with the centre. Frank Holmquist (1972,79) has developed this theme; he argues that the self help movement is primarily one of the petty bourgeoisie who act as intermediaries between the government and rural people. Many writers note the position of local MPs and politicians in the self help movement and the importance Harambee carries in the political arena.

Barbara Thomas (1979,1980) investigates Harambee as a means of fostering local level initiative, self-reliance and organisational capacity, and whether it acts as a redistributive mechanism.

Thomas found that contributions in all the locations studied were higher among more affluent socio-economic groups, while benefits were enjoyed across socio-economic strata. She also observes that Harambee is an important means of directing urban wealth back to rural areas but that this process, operating as it does through a decentralised organisational structure and through strong patron-client links, contributes to increasing disparities between geographical areas. Thomas draws a number of conclusions; as projects undertaken by Harambee groups become more diverse and more complex, the percentage of contributors benefiting personally from the project is likely to decrease. There is a trend towards more capital intensive projects. Internal politics have a major effect on the level and performance of projects, as does the relationship with important leaders or patrons, and the nature of local level leadership. The projects are heavily dependent on local leadership, although the committee structure does provide some organisational experience for the rural population to develop some management skills, at present these experiences are being enjoyed primarily by the more affluent, male members of society. Mbithi and Rasmusson's study (1977) provides some information on the role of women in the Harambee Movement. First, women are very poorly represented in leadership roles; about 8% of formal initiators were found to be women, and about 8% of committee members, and women were very rarely work group leaders. Most women initiators were found for water projects, nurseries and schools. The authors give three reasons for the very few women formal leaders; first, among Islamic communities women do not normally play conspicuous leadership roles, especially in mixed groups (female leadership was particularly low in Coast Province).

Secondly, for all ethnic groups there is a prevalence of indigenous male-female relationships where women use men as nominal leaders and spokesmen for mixed groups, committees, Barazas (community meeting) and all formal activities. Thirdly, when local leadership is made up of Assistant Chief, Community Development Assistant (CDA) or Headman, women do not occupy these positions.

In terms of contributions, cash has increased in importance as part of total contributions over time, labour input has remained fairly stable (25-33%), and material inputs have declined. In their sample Mbithi and Rasmusson observe that women comprise 41% of consumers/contributors. However, female participation is not uniform across projects and areas; female participation is especially high for health projects. Other studies indicate that women make up the largest proportion of unskilled labour on self help projects. Pala (1975) observes that women show more sustained efforts on Harambee projects than do men, and postulates that their interest and determination stems from the fact that men own most of the land and other assets so self help projects are one of the few ways in which women, as a marginalised group, are able to join together to raise money.

The following sections of this chapter are concerned with women in Kenya. Their status and involvement in self-help activities and women's groups is highlighted.

3.5 Women in Kenya

Women make up 50.6% (a total of 7719948 in the 1979 census) of the Kenyan population. The vast majority of women, some 90% of this total, reside in rural areas where they make a major

contribution to the rural economy. Some 70% of rural women aged 15 years and above are illiterate; this is roughly twice as many as men of the same age, and in each age cohort a higher proportion of females have not attended school. Male/female differentials are not only confined to areas of education and employment. In a nutritional survey undertaken by the Central Bureau of Statistics to measure the incidence of Protein-Energy Malnutrition among Kenyan children aged between 1-4 years, male children were shown to enjoy a healthier nutritional status than their female counterparts.

By the age of 24, the vast majority of women are married; their mean age at first marriage is just under 20 years, compared with 26 for men, and by 24 most women have borne at least one child. The total fertility rate, the approximate magnitude of "completed" family size (ie: the total number of children an average woman will bear in her lifetime assuming no mortalities) was 8.22 in 1980; the highest in the world. The infant mortality rate was 80 per 1000 live births in 1982, and the population growth rate (1970-1982) 4.0% (UNICEF 1984). Many women spend much of their lives in a continuous cycle of pregnancy, childbirth, and child dependency. Repeated pregnancies and prolonged lactation often leave women in a physically weakened state. Maternal mortality rate was 203.9 per 100000 live births in 1970, and 48% of pregnant women suffer from nutritional aenemia (New Internationalist 1985). The high birthrate results in high dependency ratios, which is particularly heavy for the adult female population who have to provide constant care for the very young as well as undertaking much of the agricultural work to feed the family.

3.5.1 Status and Female Household Heads

Women's status may be reflected in their position in terms of the law and their ownership of resources. Of particular importance and of relevance to this study is the status of women with respect to their ownership and access to land. Achola O. Pala's work (1975,80,83) discussed in Chapter Two has shown how women have lost their traditional, usufructuary rights to land when registration has been introduced through land reform policies, and these programmes may lead to increased numbers of landless women (particularly widows) according to Caroline Allison (1985). Evidence also suggests that associated with these changes is a trend toward smaller, less extended household units, with reduced diversification of production within the household and diminished sources of farm and non-farm income. These tenure changes have also meant that women have reduced access to certain agricultural services and inputs; for example, credit may only be extended to farmers holding title deeds as collateral, and deeds are often a requirement of membership of crop marketing cooperatives.

Some protection is provided under the law by the 1970 Married Woman's Property Act, which applies to all marriage systems, entitling a woman to legal control over her property and the right to sue to protect it; however, this applies only to court actions against someone other than her husband, unless he has broken a contract. The Act grants the right to benefit from the assets a husband lists in an insurance policy, and a husband also has this right regarding a wife. Despite this provision, studies in areas as diverse as Nyanza and Murang'a show no more than 4-5% women owning land. Most of these women were widows (World Bank, 1989). Today many women in Kenya live on their own. In traditional

societies, custom usually ensured that few women were on their own; for example, widows were often expected to remarry within their clans. Colonialism and more recent pressures forcing migration, have changed this situation. Today women are undoubtedly more independent, but in some ways they may be less economically secure. Although definitions of female heads of household vary, it seems likely that about 40% of rural households in Kenya are headed by women on a de facto basis, this figure being considerably higher than 30 years ago (World Bank, 1989).

Table 3.4 shows the percentage of households headed by women by Province. The figures were collated from the Government of Kenya's Integrated Rural Surveys 1976-79, and Census 1979 and Kenya Contraceptive Prevalence Survey of 1984. Such figures are confirmed by studies in Kenya (for example, Staudt, 1985a, Barnes, 1984).

TABLE 3.4 PERCENTAGE OF HOUSEHOLDS HEADED BY WOMEN BY PROVINCE

	COAST	EASTERN	CENTRAL	RIFT	NYANZA	WESTERN	NATIONAL
1976-79	12.2	22.9	31.1	21.1	32.6	32.8	27.3
1979	23	37	36	29	36	36	33
1984a	44.4	51.3	58.4	43.1	43.8	54.8	n.a.
1984b	29.0	35.7	33.5	25.0	34.2	36.4	n.a.

a - never married + married in past + married, husband away

b - married, husband away + married in past

Source: World Bank (1989:10)

The World Bank review also shows how female headed households may be poorer and more vulnerable; research found that these households were more likely to have only one income, and that the level of household income was lower. Households headed by women were less likely to have access to off-farm income. These

households were also shown to have less land and fewer livestock, and were less involved in cash cropping.

3.5.2 Women and Work in Agriculture

Kitching (1980) describes the "ideal type" of pre colonial division of labour:

"In the more sedentary societies in which pastoralism was combined with shifting cultivation, men were responsible for the initial clearing of the forest or bush (which, since cultivation was shifting, was a regularly occurring task), and for the initial turning of the earth so cleared. Groups of men usually built houses and other buildings. Married women planted, weeded and harvested the food crops on which everyone depended, and were assisted in this by their unmarried daughters. Small boys herded the cows, sheep and goats which were kept near the homestead, and both adult men and women milked them. Unmarried youths were generally engaged in hunting, stock raiding and in inter- or intra-tribal fighting and were directed in these activities by older unmarried men and younger married men (generally all men up until their late thirties). Domestic work was invariably the preserve of married women assisted by their daughters; in pre-colonial Africa, much work probably consisted mainly of the preparation, storage and cooking of food". (1980:8/9)

Kitching describes that both men and women were engaged in trade, the women were normally restricted to those kinds which could be practised near to the homestead, the barter of foodstuffs and of home-made beer being most common. Men monopolised long distance trade in both livestock and food crops.

Stichter (1976) reviews women in the labour force in Kenya during the colonial period, and Smock (1981) traces women's economic roles from pre-colonial times to the present. What emerges from these studies is a continuity between the economic roles assumed by women in precolonial times and the roles women perform in contemporary Kenya. Women still contribute most of the labour required for the cultivation of food crops and they also account for much of the labour invested on small and medium sized holdings in the production of cash crops. As men have migrated to urban

centres, sought waged employment within the modern sector and pursued other income generating activities, farming the family holding has become an increasingly female occupation. Nevertheless, despite the predominantly rural character of Kenyan society, and the importance of agricultural production for the economy, women's economic contribution tends to be underestimated. The prestige associated with waged employment, modern sector activities and high incomes to which men have greater access, has affected the societal valuation of men's and women's economic roles.

A number of changes have meant that women are taking greater responsibility for agricultural tasks. The widespread adoption of cash cropping by smallholders resulted in women being left solely responsible for subsistence production, whilst men took control of cash crops. With more recent male migration, the division of labour has evolved further. While women maintained their traditional responsibilities for fuelwood, water and household work, they now work in a wider range of crops and livestock activities. Analysis of Integrated Rural Surveys 1976-79 data, show a higher proportion of women than men engaged in nearly all phases of agriculture, including cash crops. The exceptions, where women's participation equalled or was less than men, occurred only in planting tea, marketing cotton and grazing cattle. Time use studies are rare but available evidence suggests that women spend 13-14 hours a day working - about one third carrying out food preparation and childcare, and the remainder in gathering household water and fuelwood, hygiene, farming and other tasks (World Bank, 1989).

3.6 Women's Organisations in Kenya

Stamp (1986:29) has described women's groups in Kenya as representing the "... source of the most radical consciousness to be found in the countryside". Stamp maintains that women's organisations are vital in terms of "resistence against exploitation". Whilst this view may be evident, for example in Nelson's study of women beer brewers in Mathare Valley (1978), groups may also be products of indigenous social hierarchies and conventions. In Kenya such groups are formalised through their statutory registration with the Ministry of Culture and Social Services. Feldman (1984) reviews data from a Women's Bureau Survey of 1978 which indicates that 11.1% of women above the age of 20 (excluding Nairobi) are members of women's groups. At that time there were over 8000 women's groups in the country, with a total membership of over 300000. The number of groups registered in the country is now in excess of 16000 (World Bank). Table 3.5 shows the distribution of women's groups according to the Women's Bureau 1978 estimates.

TABLE 3.5 WOMEN IN WOMEN'S GROUPS IN KENYA

PROVINCE	POP. WOMEN >20 ('000s)	GROUPS	AVERAGE MEMBERS	ESTIMATED MEMBERSHIP	MEMBERSHIP AS % POP
CENTRAL	487.6	2900	46	134100	27.5
COAST	283.6	330	55	18150	6.4
EASTERN	550.8	2840	30	105200	19.1
WESTERN	385.7	450	30	13500	3.5
NYANZA	664.9	770	30	24600	3.7
RIFT VALLEY	515.9	855	35	29925	5.8
NORTH EASTERN	64.3	30	30	900	1.4
TOTAL KENYA (Excuding Nairobi)	2940.3	8225	40	326375	11.1

Source: Adapted from Feldman (1984:78)

The table demonstrates that although nationally some 11.1% of women are members of women's groups, distribution is uneven throughout the country, with 27.5% of women over the age of 20 years in Central Province, and 19.1% in Eastern Province being members of groups. All other Provinces have less than 10% of adult women involved in groups, with only 1.4% in Northeastern Province. Feldman does not offer any explanations for these different rates of participation; in more remote, less densely populated areas, or where semi-nomadic pastoralism survives (for example in parts of Northeastern Province), it might be expected that few groups will exist. It may also be true that there are traditions of women's organisations among the peoples of Central and Eastern Provinces.

3.6.1 Historical View

Stamp (1976) discusses the social and economic activities of groups of rural women, and the effects of modernisation. She examines traditional women's organisations and modern post-independence groups. Traditionally, women agriculturalists engaged in cooperative ventures for the more efficient cultivation and harvesting of their crops, and this also served wider political and social functions, providing women with organisational and affiliative bases for non-agricultural pursuits. Modern groups are involved in a variety of projects, drawing on traditional patterns of activities. Small cultivating groups have provided the basis for a large-scale organisation which brings women into the modern sector of the economy in a way that few could manage as individuals. The control over resources achieved brings women certain benefits; bargaining power, acquisition of skills and experience of management, production and deposition of goods, and subjective experience such as increased confidence. Stamp observes

the aims of the new groups is to extend the old cooperative patterns for new social and economic goals, and although a number of women characterised the new and old groups as quite different, there exists a broad strand of continuity.

Audrey Wipper (1976) examines the origins and developemnt of the Maendeleo ya Wanawake Movement. Maendeleo ya Wanawake is the largest women's organisation in Kenya, with a membership of some 44,444, and a network of clubs, mainly rural based, extended throughout the country, through which rural self help projects, home industries, training in health, hygiene, child care, nutrition and improved farming methods have been promoted. As a national umbrella organisation, it has been able to provide assistance to women's groups (for example to the Mraru Women's Group Bus Service, see Kneerim, 1980), and provides a powerful lobby for women's rights, is able to speak for affiliated members and compete for scarce government and non-government resources. Maendeleo ya Wanawake has now been merged with the ruling party, KANU.

3.6.2 Activities

Given the role played by women in agricultural production, we might expect that in rural areas, women's groups are primarily involed with farming. Studies of groups in many regions of Kenya would appear to confirm this supposition. For example, the groups featured in the Kenyan National Council for Social Services projects (1985) illustrate the predominantly agricultural base of rural groups.

Most groups tend to have multiple activities, as well as multiple aims, and of course the activities change over time. Numerous case

studies demonstrate the complexity of groups' activities. Groups may start with farming activities, or communal labour on farms, in order to raise money for home improvements, or as investments to fund income generating projects. MacKenzie (1987) shows how agricultural activities form the basis for income generation and land acquisition by groups in Murang'a. In the last ten years, groups have shifted emphasis from home improvement ("mabati groups") to income generating projects. Opondo (1980) contends that groups initiate self-help activities, and then move on to income generation. However, in drier, low potential areas, opportunities for income generation are scarce and more groups may be orientated towards self-help activities. Maas' study (1986) highlights the importance of land, and charts the attempts of a woman's group in Kiambu to secure access and rights to farm land. Different levels of commercialisation are achieved. Watchel (1976) describes the activities of groups in and around Nakuru, emphasising the rural orientation of groups enterprises. Large organisation of market women from Nakuru town formed a cooperative and were able to buy a large farm which is commercially farmed. Other groups started raising funds by forming work gangs contracted out to farms surrounding the town. From these case studies, Watchel illustrates the fundamentally rural, farming nature of the activities and describes these urban groups as being based on traditional rural organisations, and that they are economically and ideologically conservative in nature. Watchel maintains that these groups display a form of "indigenous feminist solidarity", which cut across class and ethnic divisions. This was also observed by Nelson (1978) in Mathare Valley in Nairobi, and may be a feature which makes urban groups different from rural

ones, which tend to be more strictly drawn along clan, family, locality and shared goal lines.

3.6.3 Participation

Early evaluation of women's groups, carried out by Pala et al (1975) in the Women's Programme of the Special Rural Development Programme suggested disproportionate representation of the rural elite in women's groups. Research by Thomas in 1982 (cited in MacKenzie, 1987) in Murang'a contradicts this, indicating that women from poorest income groups were well represented in groups, particularly in resource poor areas. Feldman (1984) observes that poorer women are excluded from participating in groups, and postulates that this is caused by greater labour demands on poorer women and therefore time constraints, and because of membership fees and contributions demanded by groups. Feldman also claims that young, unmarried women are excluded from groups. Feldman's observations have been criticised (eg: Wisner, 1988) as being founded on sparse data and biased observations.

Mwaniki (1986) also notes the absence of young, unmarried women from groups. In Mbeere, Mwaniki found that groups were generally organised on a geographical basis, being made up of women from a particular locality or neighbourhood. Groups were seldom organised on clan, or common descent lines, and few groups were formed strictly along religious lines (this contrasts with Brown's findings in Western Province, 1989).

Evidence from Muzaale and Leonard's study (1985) suggests that groups are not all uniform in their socio-economic character and that, within the same area, different groups probably cater for different types of clientele. Although women of a particular type may be more prone to join groups, the social form is successful

for, and available to, all strata of rural society. However, Muzaale and Leonard found that participation in women's groups represents a form of long term investment, and that women operating within small resource margins in a harsh environment are not likely to be able to undertake this form of investment on a continuing basis. Thus, if the groups' policies continue to demand contributions well into periods of environmental stress, poor women will be excluded. Muzaale and Leonard suggest that women's groups may be either "alternative" or "elite" organisations and comment that although the former type need greater encouragement the potential is there in the social form.

3.6.4 Extension to Groups

Muzaale and Leonard (1985) analyse the factors that determine the effectiveness of women's groups as vehicles of agricultural extension. The results of their study are generally encouraging; the main benefits of extension activity were increased knowledge and a higher level of nutritional awareness and the women reached through the groups were fairly representative of the general female population, although the authors found that in times of environmental stress, poorer women may have to drop out of group activities when the costs of participation prove too high (there is an important seasonal dimension). the authors conclude that the practice of using women's groups as vehicles of extension deserves wider replication throughout Africa.

In Kathleen Staudt's research (1974, 1975) in Western Kenya, the diffusion of agricultural innovations was found to occur among female networks, particularly among the numerous women's communal agricultural and mutual aid associations. Staudt concludes that in

the short term this strategy may be effective, but that in the long run women's associational activities may not be able to compensate for the increasingly valuable services being provided for farmers.

Leonard (1982) maintains that group extension is less vulnerable to local elite monopolisation of their benefits than extension to individual farmers. Leonard observes that extension services which have developed strong symbiotic relations with well-to-do progressive farmers in the promotion of export agriculture have real difficulty in creating new networks orientated towards less-advantaged, subsistence production.

Extension delivered to women's groups has many advantages, as highlighted by the World Bank (1989). Extension agents may prefer to work with women's groups as a "composite" contact farmer. There may be economies of scale, as well as less travel time and lower transport costs. Innovation diffusion theory suggests that groups may learn more efficiently than individuals, not just because of scale economies, but also because "group spirit" provides reinforcement and encouragement. It was found that organised groups of 15-20 women willingly meet regularly on one farm with an extension agent, while such large groups of men farmers are apparently less willing.

3.6.5 Development Assistance

The Kenyan Government has been committed since 1966 to a "Women's Group Programme", although which government sponsored programmes for women can be traced back to the colonial period. In 1976 the Government of Kenya created the Woman's Bureau as a division within the Ministry of Culture and Social Services, to "uplift the status of women and to increase their involvement in the national

development process". The Women's Bureau is empowered to:

- a) formulate broad policies that affect women's programmes;
- b) coordinate women's activities performed by other Government ministries and voluntary organisations;
- c) collect and analyse data and information on women and monitor and evaluate women's projects;
- d) plan some women's projects.

The Bureau is composed of eleven structural units spanning a wide variety of activities, but it has very limited resources and is meant to rely on line ministries to carry out basic service programmes. In the field, the Bureau relies on Ministry staff as far as the district level. At divisional and locational levels, the Bureau uses Community Social Development Assistants who are hired by the local authorities, but who perform the function of registering and coordinating the flow of services to women's groups, in addition to their other responsibilities. At these administrative district, division and lower grassroots levels, there are no officers assigned specifically to women's programmes. At the grassroots level, programmes of the Bureau are geared primarily toward income generating activities. The Bureau also provides special services to women's groups, such as training through its Leadership Training Programmes (see Kayongo-Male, 1983), and financial assistance.

A whole host of Kenyan and overseas non government organisations (NGOs) exist which assist and support women's groups in a variety of ways. For example, the National Council of Women has created an active, rapid growing and relatively successful tree planting programme, initiated in 1977. The programme has two major components, the Green Belt Movement (Maathai 1986, Thrupp 1984),

and tree nursery development. Both are carried out through local women's groups and overseen by the central Nairobi office. Local groups send in application forms for tree seedlings and the necessary tools, and the central office responds to applications, coordinates the distribution and collection of seedlings, maintains central seed nurseries and keeps records of applications and follow up reports (Carr 1984).

These national organisations are able to provide useful and much needed assistance to affiliated women's groups. Registration with the Department of Social Services theoretically enables groups to gain access to advisory, training, and input provision services from government through the various Ministries.

At the same time, NGOs are concentrating on women's organisations. Major overseas charities, such as Oxfam, Action Aid, IPPF, as well as Kenyan organisations, for example Partnership for Productivity, and the National Christian Council of Kenya, have found working with women, and improving the conditions of women will benefit the whole family. For example, Action Aid have found that in order to improve child welfare, aid can be targeted to women, and have assisted women's groups in water projects and market gardening ventures. Jiggins (1985b) reviews some of the approaches used by these various organisations. The examination of case studies of Kenyan women's organisations shows that many are involved in complex, multiple activities, often with the aim of income generation or to raise funds for community projects, and that they contact and receive assistance, in various forms, from a variety of different government and non-government organisations.

3.7 Summary

Kenya's development depends considerably on the productivity of women farmers. At least 40% of Kenyan smallholdings are managed by women. Kenya's fifth Development Plan (1984) and Sessional Paper No 1 of 1986 stress agricultural growth as the key to national economic development. Agriculture must grow by 5% annually until the year 2000 to meet targets for per capita incomes, employment, food security and exports. The emphasis will be on increasing the productivity of smallholders, the majority of the population, but also the majority of the poor. Again we see women farmers, particularly those heads of household as disadvantaged and impoverished. Mwaniki (1986) describes a differentiation process in which women emerge as a deprived group, trapped in a vicious circle of subsistence farming and poverty. Women's productivity remains constrained in a number of ways, not least limited access to information and productive resources such as land and labour. The Kenya Government's attempts to integrate women into mainstream development programmes, justified on the grounds of increasing productivity, has been based on targeting information and inputs to women's groups. There are advantages to delivering services, for example agricultural extension, to women's groups, including cost and time savings. However, this policy has been criticised as it excludes women who are not members of groups. Feldman (1984:68) comments that:

"..women's groups have come to be seen as the chief, if not the only, means of improving the position of rural women in Kenya."

In concentrating assistance to women's groups, nearly 90% of women are immediately excluded. Although many writers have observed that groups are made up of elite women, no systematic

research has been carried out comparing participants and non-participants and in examining the usefulness of assistance targeted to groups.

Within Kenya, Eastern Province has been identified as an area where smallholder poverty is particularly prevalent, and where women's groups are very active. Within the region, ODA sponsors the Embu Meru Isiolo Programme as part of the Arid and Semi Arid Lands Programme. The next chapter, Chapter Four describes the study area, Meru District in Eastern Province.

CHAPTER FOUR

GEOGRAPHICAL FOCUS: MERU DISTRICT

Meru District lies in the centre of Eastern Province. Figure 4.1 shows its position. The District provides a good research site as it contains a range of physical, agro-economic and social conditions, as described by Elspeth Huxley in 1960:

"If I were asked to pick the district of Kenya which excels above all others in beauty, variety and generosity of soil and climate, I think I might choose Meru, which runs from the high cedar forests of Mount Kenya, lost in mist and pinched with frost in the sharp starlit hours before dawn, down to the dry baking plains of the Northern Frontier". (cited in Bernard, 1972:15)

The District headquarters is located in Meru Town, approximately 200Kms north east of Nairobi. The District is divided into nine administrative divisions: Nithi, South Imenti, Tharaka, Central Imenti, North Imenti, Timau, Ntonyiri, Igembe and Tigania. These, together with principle towns are shown in Figure 4.2. These Divisions are further divided into Locations, and Sublocations. This chapter describes Meru District as the geographical focus of the present study. The first part outlines the District and the latter sections describe in more detail the location of the sample survey, Tharaka Division which lies in the southeastern part of the District.

4.1 Physical and Ecological Characteristics

The District falls within the Eastern Highlands zone of the country. The most striking physical features in the District are the two massifs of Mount Kenya in the west and the Nyambene Range in the northeast. Altitudes range from 5199m at Batian Point on Mount Kenya in the west, to 300m at the Tana River in the southeast. The District covers some 9922 square Km, of which

FIGURE 4.1 ADMINISTRATIVE MAP OF KENYA



Figure 4.2
ADMINISTRATIVE BOUNDARIES IN
MERU DISTRICT, KENYA :

- KEY
- DIVISIONAL BOUNDARIES
 - SUBLOCATION BOUNDARIES
 - FOREST AREAS
 - △ MAIN CENTRES

^ NORTH

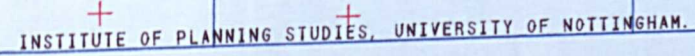


agricultural land represents some 5331 square Km or 53.73% of the area, forest reserves cover approximately 1579 square Km (15.91%), and the two National Parks, Meru National Park and Mount Kenya National Park, represent 1708 square Km (17.22%).

The drainage pattern is essentially determined by three major factors; the slopes of Mount Kenya; the northeastern and southwestern watershed of the Nyambene range; and the structure of the basement rocks. The main rivers are shown in Figure 4.3. Drainage is in a typically radial pattern from Mount Kenya, with two major systems receiving run-off from the mountain slopes. North of Mitunguu, the Kathita and Thingithu rivers drain eastwards, and to the south, the Mutonga, Ruguti, Nithi and Thuchi rivers drain the area. These rivers have carved deep incisions into the mountain's igneous bedrock, producing deep, steep-sided valleys. Streams from the Nyambene Hills flow at right angles to the direction of the range. The Thanantuu river carries most of the run-off from the southern slopes, while the Ura and Rojeweru rivers carries it from the eastern slopes, and later join the Tana river, the southern boundary of the District. Most of the streams northwest of the range are intermittent in character, they often carry large volumes of water for some months of the year. None of them flows completely across the northern lowlands, and in the wet months extensive swamps are formed.

Climatic changes correspond to topographical features; temperatures range from below freezing on the glaciers of Mount Kenya, to averages above 30 degrees centigrade in Tharaka near the Tana River. Likewise, rainfall varies, with the southeastern slopes of Mount Kenya receiving as much as 2500mm of rain annually, and lowland areas in the east and north receiving less

RIVERS IN MERU DISTRICT, KENYA.



than 1000mm, and as little as 380mm rainfall annually. Rainfall is characterised by a bimodal system, with two rainy seasons, the first between March and May (the "long rains"), and the second from October to December (the "short rains"). Table 4.1 shows average annual rainfall of selected areas of the District. In addition to total rainfall, rainfall reliability is particularly important, especially in the drier areas. According to Jaetzold and Schmidt (1983), in the lower part of Meru the first rains are relatively reliable, but the second rains show great irregularity, and dry spells are frequent. Water availability is likely to be the major constraint to cropping, especially in the drier zones.

TABLE 4.1 MERU DISTRICT RAINFALL DISTRIBUTION (mm)

STATION	ANNUAL AVERAGE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TIMAU	884	41	31	93	152	75	18	25	22	16	130	180	101
MERU	1403	57	48	136	316	157	11	13	10	15	184	310	144
LARE	2640	69	94	207	653	340	30	75	30	35	361	498	245
CHUKA	1500	43	32	134	369	177	20	30	32	25	184	332	123
NKUBU	1765	49	31	141	470	174	12	19	22	23	251	425	142
MITUNGUU	1401	21	24	149	305	142	9	7	10	9	231	374	137
CHOGORIA	1979	61	41	163	482	229	55	82	71	37	315	350	91
MARIMANTI	879	19	33	79	268	97	10	2	1	3	88	225	54

Note: Marimanti figures are high because of unusually wet years
Source: Jaetzold and Schmidt (1983:81)

The diverse pattern of topography and climate, combined with that of soils (for details see Jaetzold and Schmidt, 1983) gives rise to a variety of ecological conditions throughout the District. Figure 4.4 shows a simplified map of agro-ecological zones, adapted from Jaetzold and Schmidt's classification. The District contains practically all the agro-ecological zones found in Kenya. A brief explanation of this classification is presented below, a more detailed description can be found in Appendix 3.

Figure 4.4

AGRO-ECOLOGICAL ZONES IN MERU DISTRICT, KENYA

(From JAETZOLD, R. & SCHMIDT, H., 1983:

FARM MANAGEMENT HANDBOOK OF KENYA, Vol. 2C. Min. of Ag.)

KEY

— DIVISIONAL BOUNDARIES

— FOREST AREAS

AGRO-ECOLOGICAL ZONES

— MAIN ZONES

— SUB-ZONES

△ MAIN CENTRES

LEGEND

- TA 0 Rocks & Glaciers
- TA 1 Cattle & Sheep
- TA 2 Sheep
- UH 0 Forest
- UH 1 Sheep & Dairy
- UH 2 Pyrethrum-Wheat
- UH 3 Upper Wheat-Barley
- UH 4 Upper Highland Ranching
- LH 1 Tea-Dairy
- LH 2 Wheat (Maize) Pyrethrum
- LH 3 Wheat (Maize) Barley
- LH 4 Cattle-Sheep Barley
- LH 5 Lower Highland Ranching
- UN 1 Coffee-Tea
- UN 2 Main Coffee
- UN 3 Marginal Coffee
- UN 4 Sunflower-Maize
- UN 5 Livestock-Sorghum
- UN 6 Upper Midland Ranching
- LN 3 Cotton
- LN 4 Marginal Cotton
- LN 5 Lower Midland Livestock-Millet
- LN 6 Lower Midland Ranching
- IL 5 Inner Lower Lowland Livestock-Millet
- IL 6 Inner Lowland Ranching

0 Km 10 Km.

TAI	Tropical Alpine Zone	Upper slopes Mount Kenya
UHO	Forest	SE slopes Mount Kenya
UM1	Coffee-Tea Zone	E slopes Mount Kenya
UM2	Main Coffeese Zone	E Mount Kenya and Nyambenes
UM3	Marginal Coffee Zone	Central uplands from E Mount Kenya to Nyambenes
LM3	Cotton Zone	Central strip, SE of Nyambenes
LM4	Marginal Cotton Zone	Strip SE of cotton zone
LM5	Livestock-Millet Zone	SW Tharaka, N of Nyambenes
IL5	Lowland Livestock-Millet Zone	Tharaka
IL6	Lowland Ranching	E Tharaka
LM6	Lower Midland Ranching Zone	N of Nyambenes, Northern Grazing Area

The diversity of conditions prevailing throughout the District cannot be over-emphasised. These differing agro-ecological zones result in different patterns of land use. Table 4.2 below shows the agro-ecological potential of land per division, and land use and agricultural production is outlined in Section 4.3.

TABLE 4.2 AGRO-ECOLOGICAL POTENTIAL PER DIVISION

DIVISION	AREA POTENTIAL SQ.KM		
	HIGH	MEDIUM	LOW
NORTH IMENTI	632	744	-
SOUTH IMENTI	52	273	-
NITHI	20	476	2
TIGANIA	9	352	-
THARAKA	-	364	896
IGEMBE	6	1344	57
TOTAL	710	3531	955

Note: Pre-1986 Divisions

Source: IPS, (1986:11)

The table highlights the uneven distribution of good quality land between the Divisions. 68% of the land available for agriculture in the District is classified as medium potential: however, 88% of the high potential land is in North Imenti, and 94% of low potential land is in Tharaka. 71% of the area of Tharaka is classified as low potential.

4.2 Population and Demography

With an estimated population of approximately 1.2 million people, Meru is one of the most populous districts in Kenya. The rate of natural population increase is fairly representative of the country and was estimated to be 3.7% per annum in 1987 (Republic of Kenya, 1988). Table 4.3 shows estimated and projected population for the District, illustrating a more than seven-fold rise in under 100 years.

TABLE 4.3 ESTIMATED TOTAL POPULATION MERU DISTRICT, 1908-1993

YEAR	POPULATION
1908	200000
1950	400000
1969	600000
1979	830000
1983	999000
1988	1215000
1990	1289059
1993	1433377

Source: Estimates, Sterkenburg et al (1986:19)
Projections, Republic of Kenya, 1988:15, assuming
decline in annual population growth rate from 3.7% in
1987 to 3.5% in 1992.

Historically there are eight different peoples in the area corresponding to the present District: the Chuka, Tharaka, Muthambi, Igoji, Mwimbi, Imenti, Tigania and Igembe. These are assumed to be relatively recent migrants who moved up from the Tana basin in the last two hundred years, and it seems likely that the aboriginal people who are thought to have lived in the forests of Mount Kenya are now extinct (Matthiessen, 1972). However, there is much uncertainty about the origins and relationships between these Meru subgroups. All, except the Chuka, possess an elaborate set of myths to explain their origins and migrations to Mount Kenya. The most common theme is an exodus from

an original home, Mbwa, near a large body of water. This is assumed to be near Lamu on the Indian Ocean coast. Migration is said to have taken place along a river, probably the Tana. However, there is little archeological or linguistic evidence to support the myth (Bernard, 1972:34, and Republic of Kenya, 1986b:7), and linguistically the Meru people are part of a common language family with the Kamba, Kikuyu and Embu people, apparently unrelated to coastal people. There is evidence of close links between the Tharakan people and the Kamba, which Bernard maintains may have been instrumental in the spread of maize into the area. There are also supposed links between the Tigania and the Maasai. The migration myth is particularly prevalent among the Tharakan people, who claim to have different origins to other Meru people. Local informants describe how missionary influences this century have caused the myth to be re-interpreted that the Tharakans originated by the Red Sea, and followed the Nile. Tharakan oral history relates the arrival of three brothers - Tharaka, Igembe and Chuka - into the region, who then went on to colonise the areas now carrying their names.

Given the high rate of natural population growth, a large proportion of the population is young. Data from the 1979 census indicate that 48.7% of the District's population were aged under 15. The proportion is expected to rise to over 50% by 1993. Age dependency ratio is therefore high, and is calculated to be 115% from 1979 census data. Women outnumber men in the District, with a male/female ratio of 97%. Exceptions occur only in North Imenti, probably because of more male residents in the Municipality, and in Timau, where remaining large ranches and farms employ male labour.

The distribution of the population throughout the Divisions, including present estimates and projections is shown in Table 4.4.

TABLE 4.4 POPULATION PER DIVISION

DIVISION	CENSUS	ESTIMATES	PROJECTIONS	
	1979	1988	1990	1993
NITHI	142228	205290	220937	245673
SOUTH IMENTI	103543	149608	160776	178778
THARAKA	50548	72644	78068	86809
CENTRAL IMENTI	91038	131539	141359	157185
NORTH IMENTI	107396	155174	166759	185428
TIMAU	23389	33795	36316	40383
NTONYARI	80790	116732	125447	139491
IGEMBE	90807	131205	141000	156786
TIGANIA	140651	203224	218396	242846
TOTAL	830179	1199511	1289059	1433377

Note: North Imenti includes Meru Municipality.

The previous District Development Plan had projected district population of 1214950, assuming an annual growth rate of 3.91%, but this has been revised. The above figures assume decline in growth rate from 3.7% pa in 1987 to 3.5% pa in 1992.
Source: Republic of Kenya (1988:15-16)

The District Development Plan (1989-93) states that there has been no major migrations in or out of the District in recent years. However, there is a certain amount of movement within the District. First, there is migration into the urban settlements which include the District headquarters, Meru Town, and the urban centres of Nkubu, Chogoria, Maua and Chuka. In 1979, Meru Municipality had a population of 72049, and the four other urban centres 6536. Assuming a population growth rate of 8% for these four centres, which is likely to be an underestimate, population in the four centres is expected to increase to over 19000 by 1993. Secondly, there are movements of people from densely populated, high potential tea and coffee areas to lower potential, lowland areas. The District Development Plan, 1989-93 (Republic of Kenya,

1988:21) identifies this migration towards Timau, Nithi, Tharaka, and parts of South Imenti in search of land. This movement is the reverse of that reported by Bernard in 1972, when the main rural-rural movements were from low potential to higher potential areas. Gibbon (1987) identifies areas in lower Meru where there appears to be movements out of the far eastern areas of Tharaka on the one hand, accompanied a marked increase in population and cultivation in the eastern and lower regions of Nithi, South Imenti, North Imenti, Tigania, and Igembe Divisions, the northern area of Tharaka, and to the south and southwest of Meru National Park. The implications of these increases in population will be discussed in later sections of this Chapter with reference to Tharaka. Even after these recent movements, the majority of the District's population still lives in the highlands. Table 4.5 shows the population density for each division.

TABLE 4.5 POPULATION DENSITY PER DIVISION: 1988-93

DIVISION	AREA (sq.km)	POPULATION DENSITY (persons/sq.km)		
		1979	1988	1993
NITHI	640	222	321	384
SOUTH IMENTI	392	264	382	456
THARAKA	1496	34	49	58
CENTRAL IMENTI	458	199	287	343
NORTH IMENTI	460	233	337	403
TIMAU	790	30	43	51
NTONYIRI	1167	69	100	120
IGEMBE	535	170	245	293
TIGANIA	652	216	312	372
TOTAL	6590	126	182	218

Note: excludes all non-residential land

Source: Republic of Kenya, 1988:17

An estimated 70% of the District population lives in the ecologically more favourable areas, with population densities of over 400 persons per sq.km in coffee areas. Densities are slightly lower on the tea growing areas, with some 250-300 per sq.km, and in the transitional zones between the highlands and lowlands, and the slopes of the Nyambenes, densities range from 125-175 persons per sq.km. In the dry lowlands, densities range from 25-75 per sq.km (Sterkenburg et al, 1986).

4.3 Agricultural Production

The diversity of landscape and ecological potential results in a wide variety of crops and farming systems. In the highly fertile areas in the west and north of the District, crops include tea, coffee, miraa, wheat, potatoes and maize. In the less fertile and more marginal agricultural areas further east the common crops are cotton, sunflower, tobacco, sorghum and millet. Most production is by smallholders, with farm size varying between areas of different potential, such that median farm size is inversely related to agroecological potential.

Table 4.6 shows the production of the major cash and food crops in the District in 1987. In the upper zones there is a marked reliance on export crops, especially coffee and tea; the area under cash crops continues to increase in accordance with Government policy. The area under coffee is exceeded only by that under maize. Maize and beans are the main staple subsistence crops and are probably grown by all farmers. In the lower zones farmers are turning to cash cropping for income generation. Cotton and sunflower are most popular, but still marginal in the drier zones.

TABLE 4.6 DISTRICT CROP PRODUCTION, 1987

CROPS	Ha	Tons
CASH CROPS		
COFFEE	34502	73823
TEA	7021	32235
COTTON	8278	5700
PYRETHRUM	292	67
TOBACCO	1214	1321
SUNFLOWER	10500	6510
FOOD CROPS		
MAIZE	72296	60801
WHEAT	6500	10395
SORGHUM/MILLET	13225	11691
BEANS	32700	10193
COW PEAS	4948	4927
GREEN GRAMS	4080	3771
PIGEON PEAS	2825	2754
IRISH POTATOES	10120	65140
BANANAS	15242	132710

Source: Republic of Kenya 1988:65

The upland areas especially are undergoing rapid intensification of land use, with increasing amounts of purchased inputs used, and plot sizes decreasing due to subdivision through inheritance and sales. Pressures are also being exerted in the low potential areas, and although the table below may indicate that there is a generous amount of land available in Tharaka Division particularly, it must be remembered that this land is of very poor quality, has a low carrying capacity, and requires extended fallow periods for sustained cultivation. These issues are explored more fully in subsequent sections of this chapter.

Table 4.7 shows the amount of available agricultural land in each division and illustrates the small areas of land available per household and per person.

TABLE 4.7 AVAILABLE LAND PER DIVISION, 1979

DIVISION	AREA ('000Ha)	AGRIC.LAND ('000Ha)	NO OF HOUSEHOLDS	PERSONS PER HH	AGRIC.LAND(Ha) PER HH	PP
TIMAU	790	713	5467	4.28	13.04	3.05
N.IMENTI	460	389	20165	5.33	1.93	0.36
C.IMENTI	458	387	15687	5.80	2.47	0.43
S.IMENTI	392	327	18567	5.58	1.76	0.32
NITHI	640	500	24572	5.79	2.03	0.35
TIGANIA	652	459	26157	5.38	1.75	0.33
THARAKA	1496	1268	9463	5.31	13.40	2.52
IGEMBE	535	436	16915	5.37	2.58	0.48
NTONYIRI	1167	951	13674	5.91	6.95	1.18
AVERAGE	-	-	-	5.51	3.61	0.65
TOTAL	6590	1160	150662			

Notes: Area excludes National Parks and Forest Reserves
 Agricultural area excludes unsuitable steep slopes, lakes,
 swamps, roads, homesteads and rivers
 Population from 1979 Census

Source: Republic of Kenya, 1988:9

Livestock play an important role in farming systems in Meru. In higher potential upland areas, grade cattle do well, and their numbers have increased in recent years due to artificial insemination programmes. In the upland zones there are good markets and distribution services for milk through the dairy cooperative societies. In the rest of the District local Zebu cattle predominate. In all there is estimated to be over 70000 cattle in the District. Sheep and goats are more numerous, with approximately 600000 in 1987. Other livestock kept include poultry and donkeys.

Three different forms of land holdings exist in Meru District; clan land, private ownership of small farms, and large farms. There are a number of areas in the District - in Igembe, Ntonyiri, Tigania and Tharaka Divisions - where land has not been gazetted as adjudication areas. The present District Development Plan

reports that the adjudication process is progressing, despite local protest in these areas. In many of these areas, the ownership of the land is vested in the clan, and the clan distributes land to its individual male members. Overall, the number of smallholdings has increased considerably from an estimated 98178 in 1976 to 114243 in 1982.

4.4 Infrastructure and Service Provision

In the followins sections the distribution of basic infrastructure and services are briefly outlined in order to highlight areas of need.

i. Roads and Transport

Most of the roads in Meru District converge on Meru Town. The network of major routes is shown in Figure 4.5. The classified roads form an estimated network of 2060 km, of which 230 km are bitumen standard, 900 km gravel standard, 601 km earth roads and 320 km rural access roads. The classified roads are concentrated in North and South Imenti divisions. The District Development Plan 1989-93 describes many of the gravel and earth roads as being of unsatisfactory standard due to heavy use and erosion. Particularly problems arise in the rainy season, and in the number of temporary, poor quality and uncompleted bridges and culverts. Tharaka Division has only a skeletal road network compared to its size.

The density and quality of the road system strongly influences the public transport network. This network is served by buses and privately owned buses and taxis known as "matatus". Regular bus and matatu services link Meru Town with major urban centres and important towns outside the District. Matatus reach all service

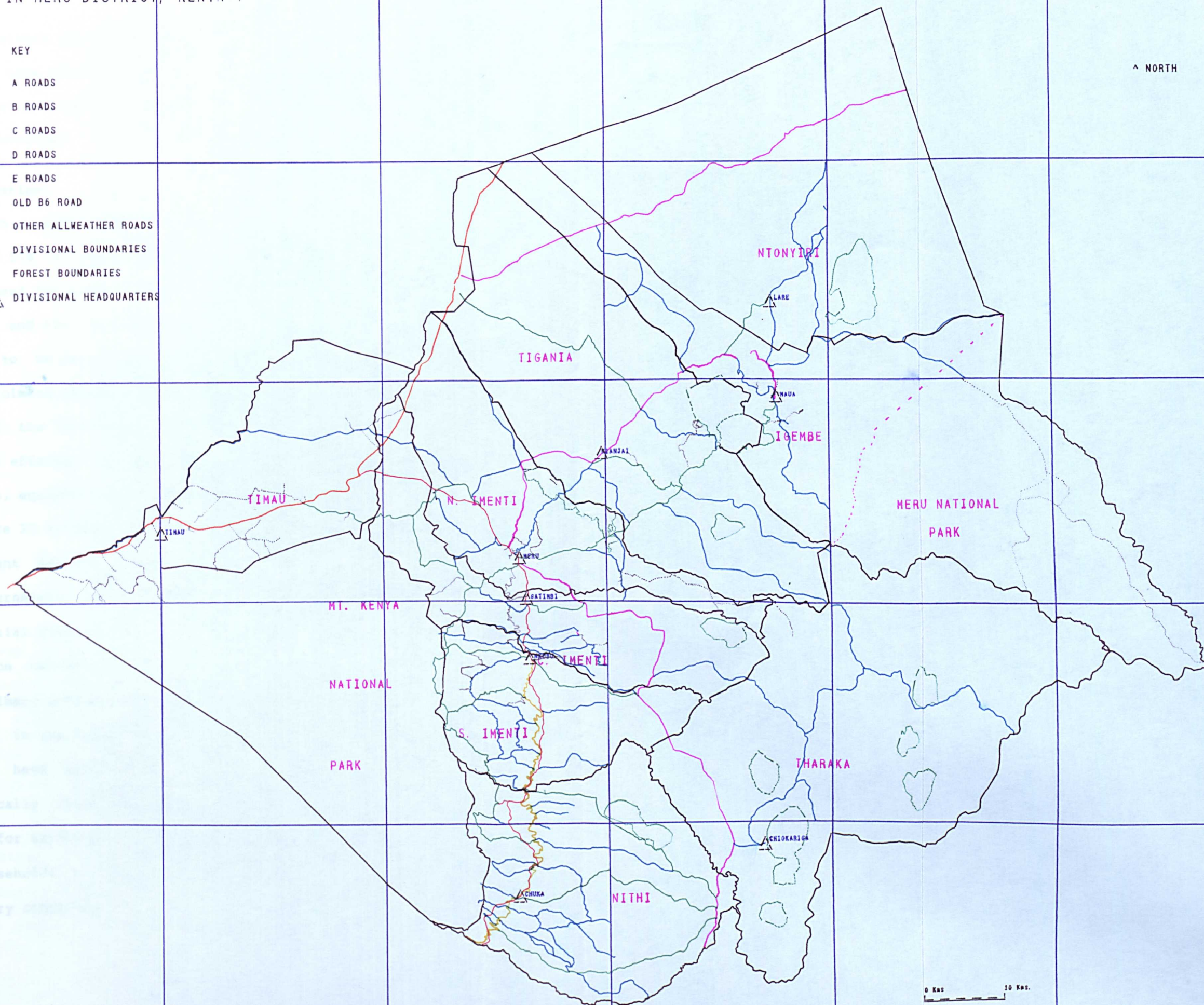
Figure 4.5

ROADS IN MERU DISTRICT, KENYA :

KEY

- A ROADS
- B ROADS
- C ROADS
- D ROADS
- E ROADS
- OLD B6 ROAD
- - - OTHER ALLWEATHER ROADS
- DIVISIONAL BOUNDARIES
- FOREST BOUNDARIES
- △ DIVISIONAL HEADQUARTERS

^ NORTH



centres within the District usually at least once a day, although in the more densely populated and economically more important areas services are more frequent. Intra-District bus services are poorly developed.

ii. Education

With such a large proportion of the population being of school age (nearly 50% of population are under 15 years old), there is a great need for schools in Meru. Meru has a total of 822 primary schools and 131 secondary schools. Nithi and Tigania Divisions appear to be particularly well endowed and have correspondingly high enrolment rates, whereas Tharaka and Timau fare more badly. Many of the schools in the District have been established by Harambee efforts, but many are plagued with shortages of trained teachers, equipment and in some cases, buildings and classrooms. There are 20 village polytechnics in the District, of which 12 are government assisted (teachers salaries and some equipment paid by the government). Some of the others are assisted by NGOs. The spatial distribution of education facilities indicates little variation between Divisions in terms of the number of inhabitants per primary school. It is worth noting however, that secondary schools in the District's poorer areas, especially in Tharaka, usually have many students who originate from other, more economically developed parts of Meru. This is due to the high demand for secondary school education in Kenya, and the inability of households in poorer areas to pay for their children's secondary schooling.

iii. Health Facilities

Figure 4.6 shows the distribution of health facilities in the District. The curative and preventative health care system in Meru is dominated by non-government organisations. The facilities are provided through hospitals, health centres, dispensaries and mobile clinics. With the exception of health centres, most are managed by NGOs. Mobile clinics are health centres without permanent availability of staff or services; they are usually visited by a doctor or nurse on a regular basis, for instance monthly or fortnightly. People from the surrounding area visit the clinic on that day, usually for immunisation services only. Dispensaries are equipped with permanent staff, they treat only out patients and provide drugs and immunisations. Health centres provide a wider range of out patient services and limited in-patient services. However, many of these facilities, especially those in the government sector, suffer from chronic lack of staff and drugs, so the distribution of facilities may look better than it is in practice.

4.5 Social and Economic Characteristics

Predominantly an agricultural economy, less than 10% of the working population is employed outside agriculture. These are mainly in the government, trade and service sectors. Most smallholders strive to achieve subsistence, with sale of any surplus, as well as production of cash crops. However, households increasingly have access to non-farm income sources. Table 4.8 shows the distribution of total household income in 1984 in various regions of the District.

Figure 4.6
HEALTH FACILITIES IN MERU DISTRICT.



TABLE 4.8 FREQUENCY DISTRIBUTION OF TOTAL HOUSEHOLD INCOME, 1984

INCOME CATEGORY (Ksh)	% OF HOUSEHOLDS IN SELECTED AREAS				
	MT KENYA TEA AREA	MT KENYA COFFEE	MIRAA AREA	COTTON SETTLEMENT	DRYLAND AREA
LESS THAN 1000	0.0	2.2	2.2	4.4	2.9
1001 - 2500	0.0	2.2	15.6	4.4	42.8
2501 - 5000	2.2	4.4	28.9	15.6	34.3
5001 - 10000	2.2	24.4	24.4	37.8	17.1
10001 - 15000	2.2	24.4	8.9	15.6	2.9
15001 - 30000	11.1	33.5	15.6	17.8	0.0
30001 - 50000	28.9	6.7	0.0	4.4	0.0
MORE THAN 50000	53.4	2.2	4.4	0.0	0.0
MEAN TOTAL INCOME	58310	15850	10810	10260	3820
MEDIAN TOTAL INCOME	50930	12800	5290	7500	2800

Note: includes monetarised subsistence

Source: Sterkenburg et al (1986:79) from Meru District Housing Survey

The table highlights the disparities between the high potential, fertile areas, represented by the Mount Kenya tea and coffee zones, and the dryland areas. In the dryland area, Tharaka, 80% of households have a total yearly income of 500Ksh or less, compared with only 2.2% of households in the tea area, and 8.8% of those in the coffee area. Total average income ranges from 58310Ksh in the tea area, to only 3820Ksh in the dryland area.

Table 4.9 shows that not only do incomes differ in magnitude, sources vary in different areas. Non-farm sources are especially important in less fertile areas. Crops are less important sources in the dryland areas, and livestock more important.

TABLE 4.9 COMPOSITION OF AVERAGE TOTAL HOUSEHOLD INCOME (%), 1984

	MT.KENYA TEA AREA	MT.KENYA COFFEE	MIRAA AREA	COTTON SETTLEMENT	DRYLAND AREA
net income from crops	83.5	64.8	18.7	40.9	24.5
net income from livestock	8.3	15.0	18.2	28.2	29.2
subtotal farm income	91.8	79.8	36.9	69.1	53.7
net off-farm income	7.8	19.0	57.6	29.3	45.1
remittances	0.4	1.2	5.5	1.6	1.2
total (%)	100.0	100.0	100.0	100.0	100.0
total average (Ksh)	58310	15850	10810	10260	3820

Note: includes monetarised subsistence production

Source: Sterkenburg et al (1986:78) from Meru District Housing Survey

The Meru District Housing Survey also provides an analysis of housing conditions in the District. The quality of housing conditions was assessed by weighting a variety of characteristics; physical features and building materials, access to and quality of water sources, sanitation, and quality of kitchen facilities (see Sterkenburg et al, 1986:165-168). The results of this assessment show that a considerable proportion of houses in Meru are designated as sub-standard. Again, there are substantial differences in conditions between sub-areas, as illustrated in Table 4.10. Those areas with higher incomes, such as the tea and coffee zones, show better overall housing conditions. However, in the dryland zone, housing conditions are very poor, with 94.3% of households living in conditions assessed to be bad or very bad. Sterkenberg et al comment that if account is taken of the pattern of new building activities, the differences are likely to become even wider in the future. The assessment found that only 2.9% of

houses in the dryland area have concrete floors, compared with 48.9% in tea area. 78.0% of houses in the dryland area are made from mud and wattle, compared with 34.8% in tea area. The mean size of house, space per person inside and outside, and number of structures was lowest in the dryland zone. Median total building costs were 70Ksh in the dryland area, compared to 6500Ksh in the tea area and 4990Ksh in the coffee area.

TABLE 4.10 QUALITY OF HOUSING CONDITIONS (% OF HOUSEHOLDS)

QUALITY	MT. KENYA TEA AREA	MT.KENYA COFFEE	COTTON SETTLEMENT	DRYLAND AREA	DISTRICT AVERAGE
VERY BAD	0.0	0.0	4.4	34.3	7.9
BAD	4.4	4.4	20.0	60.0	29.6
SATISFACTORY	33.4	44.5	57.8	5.7	36.3
GOOD	44.4	35.5	13.4	0.0	18.5
VERY GOOD	17.8	15.6	4.4	0.0	7.7

Source: Sterkenberg et al (1986:125) Meru Housing Survey, 1984/85

Access to different water sources was also considered. Water is collected almost exclusively by women. It was found that in the dryland area, 80.0% of households are more than one Km from water source in the wet season (91.4% in dry season), compared to none in tea area, and 4.4% in coffee area. In the dryland area, no respondents had access to a private tap, compared with 73.3% (wet season), and 64.4% (dry season) in the tea area. The report comments:

"Quite unfavourable is the situation in the research area in the dryland zone; here 40% of the households have to walk more than 2000m during the wet season to reach their water source ie: mountain wells, the communal tap of Chiakariga Market, or Mutonga River. The latter becomes the main source during the dry season, forcing 80% of the households in this sub-area to walk from 4 up to 10 Km to fetch water and bring it back to their homesteads." (Sterkenberg et al, 1986:123-124)

4.6 Tharaka Division

The preceding sections of this Chapter have demonstrated how Tharaka Division is the most impoverished part of Meru District. Tharaka has a generally semi arid environment where water availability, unreliable rainfall and frequent drought present severe constraints to crop production. The Division is also disadvantaged in terms of infrastructure and service provision. Although ostensibly sparsely populated, the poor quality of land means that land shortages are becoming increasingly apparent. These problems are exacerbated by migration from higher potential areas, and privatisation of land, which limits access to traditional communal grazing areas and water sources, and forces abandonment of fallow periods.

Data presented on incomes revealed that Tharakan income levels are considerably lower than those in other parts of the District. The area is undoubtedly very poor, but this is often obscured when data are aggregated on a District level. For example, infant mortality levels for the District are claimed to be in the region 88.4 per 1000 in 1988 (decreased from 105.3 in 1980, and compared to national figure of 77.3, Republic of Kenya, 1988). However, local informants (local medical personnel) estimate that infant mortality rates in Tharaka are likely to be in excess of 200 per 1000, possibly as high as 250 per 1000. We therefore see a massive regional disparity in not only ecological and agricultural conditions, but also in social and economic conditions within the District, with Tharaka highlighted as a particularly impoverished and neglected case. Even as long ago as 1904 Tate explored the area and referred to the Tharaka as the "poorest" tribe he had ever seen (reported in Bernard, 1972:67).

4.6.1 The Farming System in Tharaka

The farming system in Tharaka is characterised by the need to provide subsistence for the farm household; in this way it corresponds to a peasant system as outlined in Chapter Two. According to Abella et al (1984), four major objectives govern the basic system:

1. Provision of food for the family;
2. Safeguarding the future;
3. Maintaining social obligations;
4. Maintaining status and wealth symbols.

Abella et al's survey in 1984 found that 83% of the cultivated area was under food crops, predominantly millet, sorghum, green grams, and cow peas, and 17% under cash crops, cotton and sunflower. Livestock were owned by 85% of farmers. The authors comment that the farming system in Tharaka is characterised by non-optimal management of resources, overstocking leading to severe overgrazing and erosion, and that measures are needed to improve the use of existing resources.

The cropping calendar consists of millet, sorghum, green grams and cow peas grown both seasons. Katumani maize is only grown during the first rains. Cotton is normally planted in October and harvested twice. Sunflower is grown in both seasons.

Abella et al (1984) found average size of farm 5.2 acres, however, 20% of farmers cultivate less than 2.5 acres. Table 4.11 shows the results of their survey in Kathangachini, Marimanti and Chiakariga Sub-locations. It highlights that some differences exist within the Division, with the drier, more remote area of Kathangachini having generally larger farms, growing less cash crops. Overall, 50% of farmers grew cash crops, although they covered only 17% of

the cultivated area.

TABLE 4.11 AREA PER FARM OF FOOD AND CASH CROPS BY SUB-LOCATION

SUB-LOCATION	FOOD CROPS	CASH CROPS	TOTAL (ACRES)
KATHANGACHINI	6.1	0.5	6.6
MARIMANTI	6.6	1.7	5.3
CHIAKARIGA	3.1	0.7	3.9
AVERAGE	4.3	0.9	5.2

Source: Abella et al (1984:16)

The main constraint to crop production is water availability, which leads to high probability of crop failure. Table 4.12 shows the probability of crop failure for major crops at Marimanti.

TABLE 4.12 PROBABILITY OF CROP FAILURE: MARIMANTI

CROP	PROBABILITY OF FAILURE %
MILLET	40
SORGHUM	40
COW PEAS	45
GREEN GRAM	40
MAIZE	65
COTTON	50
SUNFLOWER	50

Note: the probabilities of crop failure are calculated by determining the proportion of 34 cropping seasons (1967-83) in which theoretical moisture requirement of different crops were met.

Source: Abella et al (1984:11)

Low rainfall, and high levels of rainfall intensities causing high rates of run off and soil erosion, mean that a positive water balance may be limited to only a few weeks each year. Although a number of perennial rivers are superficially promising for irrigation, there are three main problems. First, the scope for

irrigation in the upper Tana is possibly reduced by the water rights allocated to lower Tana Irrigation Schemes. Secondly, there exist apparently little cash benefits for irrigation to justify investment. Thirdly, there is no low cost system of irrigation yet for the area. In consequence attention has been turned to other water sources, ground water (boreholes by SIDA), and water harvesting (EMI).

Land tenure is traditionally communal, under the informal control of the clans. Under such a system, three types of land exist (Abella et al, 1984)): First, land traditionally cultivated by the family; secondly, abandoned land still under the control of the family; thirdly, communal land available for livestock of anyone of the clan. Little detailed information is available on the operation of this land tenure system in Tharaka, but Brokensha and Glazier's study (1973) on land tenure and land reform in Mbeere provides insight into a very similar system. Brokensha and Glazier describe clan relationships and functions, and the operations of the clan with respect to the allocation of land and in settling land disputes through traditional moots. The clans are strongly patrilineal in ideology and in terms of marriage and inheritance. Within the extended household land is allocated to different household members by the senior male, with gardens outside the homestead within the larger parcel of land claimed by the common descent group. Only 25% of farming households in Brokensha and Glazier's study farmed only one garden or plot (in areas where privatisation is complete and where pressure greater, this figure is higher, for example World Bank, 1989, reports 36% of households in Murang'a farm only one plot). Households utilised scattered plots in different ecological areas, thus being able to adopt

different types of farming, take advantage of different conditions and spread risk. In essence, the traditional system was marked by flexibility, with a whole range of different rights and access to land. Land "sales" were characterised by being redeemable; money was rarely exchanged, but rather a set of gifts such as livestock and food, which when returned, guaranteed the return of the land. For example, access to trees can be sold or retained independently of land. The process of land reform (including adjudication or determination of titles, consolidation where land was fragmented, and registration of titles) has caused a number of boundary disputes, and problems occur due to shifting cultivation, grazing, beekeeping, firewood and holding of dispersed gardens. There is likely to be an increase in landlessness, and there is already evidence of people from higher potential areas moving in and buying land.

Land use may be classified according to the intensity of fallow. Land is predominantly cultivated under a bush fallow system with fallow lengths mainly of 2-5 years, although there are farmers practising both shifting and permanent cultivation. Table 4.13 shows the distribution of lengths of fallow.

TABLE 4.13 DISTRIBUTION OF LENGTHS OF FALLOW PERIOD

FALLOW PERIOD	% OF FARMERS REPORTING
LONG REST (5 - 20 YEARS)	23
MEDIUM REST (2 - 5 YEARS)	56
SHORT REST (1 - 2 YEARS)	12
NO FALLOW	9
TOTAL	100

Source: Abella et al (1984:24) from survey covering Chiakariga, Marimanti and Kathangachini sub-locations.

Farmers further spread risk by cultivating a number of different plots, often with different ecological features. Abella et al found that 45% of farmers cultivate one plot, with 36% cultivating two plots.

Intercropping is another means by which Tharakan farmers minimise risk. Abella et al (1984) found 65% of farmers intercropped all crops; only 15% of farms were all sole cropping. 28% intercropped millet, sorghum and cow peas, and 26% millet and sorghum. Millet and sorghum may compliment each other when grown in this way. Most farmers planted seeds in same hole, in a random pattern. Green gram is usually planted as a sole crop. Tools are usually rudimentary, with the use of digging sticks, or jembes. Inputs are rare; 97% of farmers used their own seeds. 70% of farmers replant when crop fails.

Most farmers have to buy food at some time of the year. Maize and beans are usually bought as they do not grow well in Tharaka. Abella et al found 70% of farmers bought food, and at the time of their survey in January 1984, only 15% of farmers had a sufficient harvest to feed their families for more than a few weeks. However, the survey also found that 71% of farmers sold food crops; 38% for small domestic needs, 15% in preference for purchasing livestock instead of storing food. 15% reported selling food crops because of problems of storage. As with livestock sales, food is often sold when prices are low, then bought back when prices are high. Other water-saving and risk-reducing methods of cultivation were traditionally employed including ridging and several plantings ("false start" planting). However, these methods are labour using, and the increase work burden falls on women, often at times when labour bottlenecks are likely to occur (planting and weeding).

In the 1984 study 85% of farmers owned livestock, with 60% owning cattle, sheep and goats. An average herd of 12 cattle, 28 goats and 11 sheep is suggested. However, wide variations exist, as 25% of farmers own 60% of livestock, and 25% own 6%. The basis of subsistence in Tharaka is livestock rearing. There are probably over 50000 Zebu cattle and large flocks of unimproved goats and sheep; estimated to number more than 200000. Livestock are left to graze on common land and on rough pasture. They receive little attention and modern management practices are infrequently used. As a result, herds and flocks produce little meat or milk. However, they are well adapted to surviving in Tharaka, and thus represent a dependable source of income through sales. By selling livestock, the Tharakans manage to survive when crops fail. As crops are rarely sufficient to provide year round food, a certain number of animals are sold each year, especially during the hungry months of July to December.

Goats and sheep are valued for their meat above all else. Their milk is little used, although some may be taken for children. Sheep are rarely sold; they are kept mainly for eating on ceremonial occasions - births, marriages and deaths. Although their meat is considered less tasty than goat meat, for some ceremonies eating mutton is the rule.

Goats are disposed of in three ways: at home, where they may be slaughtered for special occasions; as gifts, and most commonly as bridewealth which would include a minimum of 48 goats; in local markets. In general, goats are sold to provide cash to cover occasional and critical needs. The two main cash needs are to pay secondary school fees, and to buy food in times of hunger. The first need occurs up to three times a year. The second depends on

the rains, but normally in Tharaka at least half of harvests are insufficient and food has to be brought in the dry season. Other cash needs include purchase of clothes, payment of fines, hosting ceremonies. It is inherent in the causes of goat sales that markets should be flooded at certain times. There will be small peaks at the three times when school fees are due, and a major peak a few months after crop failure, from July to December. As a result, seasonal fluctuations in prices may be as much as 200-400%.

Smallstock are thus a vital element in the rural economy of these semi-arid lands. Goats are wealth, a savings bank for farmers. It has been described how goats are sold to raise cash for various needs. Similarly, following a good harvest, some bags of food may be sold and the money reinvested in goats. Goats are social security; in times of hunger and sickness they perform a vital role. Goats are also social status, and can be used to climb the social ladder; by making gifts, by hosting festivities, by enabling marriage to a particular woman. Paradoxically, despite the obvious importance of the flocks, the effort put into their management is minimal. This may be one thing that makes them so attractive to farmers, as well as their ability to graze on land that would not support other animals. Smallstock are the dependable basis of subsistence in the Tharaka economy. They can survive droughts when crops fail, and the local species rarely succumb to disease. In these semi-arid lands, crop farming is the risky business, smallstock the insurance.

Labour inputs are predominantly provided by the family, with children playing an important role in herding smallstock and bird-scaring. Abella et al (1984) found that only 45% of farmers hired

labour, but most was casual, at weeding time. Labour was paid in cash, or in food or beer.

The farming system in Tharaka is thus characterised by being low input, low productivity, and low risk, but being flexible and adapted to local environment. The system displays characteristics of peasant systems, and we may classify the majority of smallholders as peasants, whose main concern is providing subsistence, but who are increasingly being incorporated into the market economy. The next section discusses traditional responses to drought in Tharaka, and how development policies have made the population more at risk from drought, and more vulnerable.

4.6.2 Drought and Vulnerability

Drought is a major feature of life in Tharaka. Much of the traditional farming system has evolved to minimise the risk and effects of drought; shifting cultivation, cultivation of scattered plots, ridging and replanting, and dependence on smallstock. Whilst localised drought is a common occurrence, the incidence of widespread famine, the accumulative effect of a number of poor seasons, may occur less often. It seems probable that a major drought occurs approximately once every ten years (examining records from Tharaka, Kitui, Isiolo and Samburu, see O'Leary, 1980, and Sperling, 1987).

Traditional responses to drought include obtaining food in exchange for livestock and labour from less affected neighbouring districts. Bernard (1972) describes traditional trade strategies in Tharaka, where trade across the Tana river and to Mombasa probably pre-dates Arab trade. Some trade, of baskets for example, took place with upland areas. Additional sources of food included gathering of wild fruits, plants and game. Although bush foods are

still exploited (for example the fruits of Baobab and Tamarind, various herbs, see Brokensha and Riley, 1980) there are no longer reserves of game (this is relatively recent as local informants described wild animals as plentiful in the area 20 years ago).

Since colonial times, local responses to famine have changed, initiated by colonial efforts to settle the population and provide food as famine relief. As the local economy has become increasingly monetarised, cash is needed to overcome hunger in times of famine.

O'Leary's study in Kitui (1980) demonstrates how access to off-farm employment may be the best way to "beat" famine. It was also found that those households with access to off-farm income may be able to take advantage of famine, and buy up livestock. For the most part, drought only diminishes the capacity of households of labour migrants to save. Those who suffer most acutely are non-wage earners who own few or no livestock. O'Leary concludes that the traditional economy, although capable of coping with localised drought, was an easy victim of widespread drought; it is estimated that half of the population died during a famine in 1898-99. The initial resistance to labour migration during the colonial period changed dramatically after a drought in 1935. Now, labour migration is an essential source of livelihood for many households, a means of investing in agriculture, and providing safeguards against famine. It also funds many local development plans, including the construction of local schools and health facilities. Instead of residents having to emigrate in search of food during drought, food has now become available to them in local stores. What they need is the cash to buy the food. However, as population increases, the effectiveness of this strategy

diminishes; Kitui people cope with problems through labour migration, but this is causing increasing differentiation between those who have access to a steady flow of cash and those who have not. Hogg (1986) notes increasing wealth differentiation in Isiolo as a result of market integration and national incorporation. Many writers show how farmers diversify sources of income in response to pressures (O'Leary, 1984, Hogg, 1986).

Traditional mechanisms which diminish the effect of drought - especially seasonal localised shortages - have been eroded, partly as a result of development policies. For example, Wisner (1977) describes how traditional transhumance - the herding of livestock to distant dry-season pastures - has been denied in Tharaka because of the cotton settlement schemes established on western boundaries, and the demarkation of the Ura River as the National Park boundary in the north. Land adjudication is limiting fallow period and traditional shifting cultivation patterns, as well as households cultivating scattered plots. In addition, privatisation of land is limiting the amount of communal grazing land available for livestock. As people still want to maintain their herds - for all the reasons highlighted, and not least because of the role played by smallstock as famine insurance - such policies are leading to severe overgrazing, deforestation and erosion. As more migrants move in from upland areas, and buy up newly privatised land, landlessness, until recently unknown in Tharaka, is likely to become increasingly common. Wisner's (1977) foreboding - that worse famines were to come to Tharaka - seems to have held true. Little documentary evidence exists, and despite reports of prompt government response (Cohen and Lewis, 1987), local informants relate widespread mortality as a result of the 1984-85 famine. It

is possible that hundreds of people died in the Marimanti area alone. In addition, cattle herds were decimated, to the point where they had not regained pre-1984 size in 1988. Smallstock herds had not suffered so badly. The ability to withstand drought and famine increasingly dependent on access to cash, particularly access to non-farm sources of income.

4.6.3 Women's Roles

The Meru District Socio-cultural Profile (Republic of Kenya, 1986b) gives a little insight into women's roles in traditional Meru societies. Strict mores controlled age and generational sets, and girls had to go through a series of ceremonies, culminating in circumcision at puberty, before they were able to consort with members of the opposite sex. Pre-marital sexual relationships were taboo, and marriage agreements were made between families, and involved negotiations over a long period of time. It appears that the bride had little to do with choice of partner. Tharakan informants describe how children were strictly brought up, a certain amount of sexual segregation was enforced, young people were taught by their elders about the ways of society and the environment. Loyalty to one's family and clan were uppermost in governing an individual's behaviour, and anyone who disobeyed and went against the ways and interests of their clan were ostracised by society. The age of marriage was generally later than it is today; most men did not marry until their mid to late thirties, and women until their twenties. Brideprice was paid to the bride's family, often over a long period of time, and a series of ritual gifts, such as honey beer, comprised the marriage. Brideprice consisted of a minimum of 48 goats, supplemented by other

livestock. Today, the 48 goats are still paid, and additional cash and household items and clothes. Polygyny is practiced, although there are no details of any practices and rules governing its extent. The District Socio-cultural Profile reports that divorce was not common, although if it resulted from the woman's mistakes, the bridewealth, or at least part of it, had to be returned.

As observed earlier, the organisation of the clans patrilineal, and marriage patrilocal. Women move to their husbands village, and join his clan. Land is allocated by a man for use by his wife or wives, and sons. Women had only usufructuary rights to land. It seems likely that crops grown by a woman belong to her, and that after fulfilling responsibilities for feeding the family, she is able to dispose of any surplus in whatever way she sees fit. Republic of Kenya (1986b) reports that the only crops considered as belonging to men are yams and sugar cane, grown in upland areas. Cattle usually belong to men, but a woman may own smallstock if she has acquired them through her own personal enterprise. Women are generally prohibited from slaughtering livestock, even those owned by them. Livestock products, like milk, usually belong to woman if they are in small quantities. Poultry and poultry products are usually the women's and children's prerogative. Men generally own the dwelling house and other buildings, although household equipment may have varied ownership.

There are few insights into gender division of labour in descriptions of the farming system. Some references are made to "family labour", for example in Abella et al's study (1984). Bernard (1972) describes the main responsibilities of Tharaka men as being heavy land clearing, herding, hunting and honey

collection. Women are therefore responsible for cultivation, water and wood collection, gathering plants, harvest, food preparation and all aspects of childcare. BDDEA (nd) presents a breakdown of yearly labour use on a typical farm in lower Embu, but this fails to identify which family members participate in which tasks.

Few of the studies of semi-arid regions of eastern Kenya concern the role of women or specifically mention gender differences. More information is available on social and economic changes occurring in these areas, indicating increasing social differentiation and stratification. Previous chapters have shown how processes of differentiation affect women and it is fair to assume that this is happening in semi-arid areas.

Mbithi and Wisner's study on drought and famine in Kenya (1973) is one of few that gives some insight into the role of women in Tharaka and other marginal environments in Eastern Kenya. The study shows how, in addition to their roles in cultivation, a higher proportion of women hold non-farm jobs than men. It highlights the fact that in times of famine, women tend to adapt more, and occupy a leading role as breadwinners. More recent analyses of local responses to drought in Eastern Kenya by O'Leary (1980), and Hogg (1986) concentrate on men, although they often indicate that women are instrumental in household survival strategies.

Few studies explicitly mention female headed households, although male migration to other areas is often cited as a means of gaining access to off-farm income. We might therefore expect to find increasing numbers of households headed by women on a de facto basis. Sterkenberg et al (1986;62) comment on the high proportion

of "incomplete" households in the dryland zone caused by male migration. Hogg (1980) reports 26% female household heads in Isiolo.

4.6.4. Development Priorities

The District Development Committee's development priorities outlined in the current Development Plan include the continued intensification and expansion of agricultural production, improvement of education opportunities, and the planning and provision of infrastructure in designated service centres. There are no explicit policy statements aimed at decreasing disparities within the District.

The active programme concentrating on the dryland areas is the Embu-Meru-Isiolo Programme, part of the Arid and Semi-Arid Lands Scheme. The EMI Programme covers lower Embu, lower Meru (Tharaka), and Isiolo District, in Agro-ecological Zones IV, V, and VI. The EMI Programme is supported by British ODA and implemented through the MOALD.

The components of the Programme which are operating in Tharaka and of consequence to the present study are the Goat and Sheep Improvement Project, Dryland Farming/Soil and Water Conservation Programme, and Forestry Programme. In addition there is a small projects component. Women are mentioned only with reference to GASP's intention to train women's groups (BDDEA nd:Annex 4:7).

The BDDEA highlights the seriousness of problems faced in Tharaka, describing the project area as being one of the "absolutely poorest rural areas in Kenya" (nd:Annex 2:18). Over 80% of people have to purchase supplementary food even in a "good" year. BDDEA estimates the calorific output and percentage of food requirement produced on a typical farm in the region. Only 84% of farms in

Zone LM4 produce enough food to meet calorific requirement of the family, 70% in Zone LM5, and a pitiful 45% in Zone IL5 (BDDEA nd:Annex 1:12). Where possible, other foods may make up the difference; livestock products, fruits and bush foods, and purchases, as long as the family has access to additional resources. Unless alternative strategies are devised, the Tharakan people will be dependent on food aid and famine relief for their survival.

Wiggins (1985) identifies a lack of political will and support as an obstacle facing the ASAL programmes. Other difficulties include the Government of Kenya's problems in managing rural development, particularly in terms of budgeting and coordination; heavy expatriate involvement as a counterweight to lack of local support; administrative and technical difficulties. Wiggins comments that dryland projects tend to be experimental, incremental and slow-maturing. Technical failures and setbacks, almost inevitable in the early years, will undermine support both locally and with donors. The experiences of the ASAL Programmes has highlighted the lack of appropriate development strategies for the drylands. In the past greater efforts have been put into research and development of approaches suited to more fertile areas. Perhaps now, when the plight of people living in more marginal environments is being recognised more readily, will policies be directed towards these areas.

4.7 Summary

This chapter has described the research site in Meru District. Disparities, in terms of agro-ecological potential and socio-economic characteristics have been shown. Tharaka Division, in the south east of Meru District was chosen as the geographical focus of the research and has been described as a particularly impoverished and neglected area.

Tharakan smallholders exhibit many of the characteristics outlined in Chapter Two as being typical of peasants: production is orientated towards subsistence, there is a dependency on land as a principle productive resource, an emphasis on family labour, with low levels of other inputs. Risk reduction is a major element of the farming system, and smallstock are vital in the rural economy and as insurance against crop failure. Most households fail to meet their food requirements in most years, and drought and famine are regular occurrences.

Past development policies may have increased Tharaka's vulnerability to drought. The processes of privatisation, commoditisation and marginalisation are stemming the effectiveness of many traditional risk-reducing strategies. Land adjudication, strongly opposed by most people in the area, will limit smallholders access to different areas of land for grazing, for cultivation to spread risk, and is forcing a decrease in fallow periods practiced by farmers. This will speed the effects of soil erosion, deforestation and overgrazing, making the smaller areas of land available to farming households less productive. As natural population growth puts pressure on the fragile ecosystem, so migration from more fertile areas, and incursions by shifta, further limited the amount of land available to farmers. Cash is

now needed to overcome effects of drought, and Tharakan peasants are increasingly dependent on meagre earnings from cash cropping, and off-farm income. As few employment opportunities exist within the locality, this often means that members of the family migrate in search of work. As men leave, more households are headed by women.

The lack of appropriate development policies, and difficulties of implementing those available are caused partly by a lack of political will and prejudice against dryland areas. In Meru District, there is the feeling that Tharakans are discriminated against. There is a lack of investment, provision of services and infrastructure in Tharaka. In upland areas, Tharakans are spoken of as being "backward". Certainly, there is a resistance to change in terms of opposition to policies such as land adjudication, which Tharakans see as an inappropriate policy imposed by outsiders. Wisner (1977) maintains that Tharaka is effectively a colony of upland Meru, at a disadvantage in terms of labour and trade relations disadvantage, and caught in a vicious circle of impoverishment as a result of relations of dependency and exploitation.

Little systematic research has been carried out, and there is a complete lack of gender awareness in any of the studies of the area. As women become increasingly responsible for farming and provision of all household needs, there needs to be a better understanding of their roles. In particular, little is known about the role of women in the alleviation of famine. Are women's groups viable organisations in this dryland area, and can they be fostered as mechanisms by which the effects of marginalisation, privatisation and commoditisation can be lessened? Are they

effective vehicles for generating self-help and self-reliance amongst the women from this impoverished area? Most of the studies undertaken of women's groups in Kenya have been in high potential areas where income generating projects are supported by better service and infrastructure provision, and access to markets. What possibilities exist for women in Tharaka, and how well are they supported? The next chapter, Chapter Five, describes the methodology adopted for this study, and discusses the generation and formulation of the hypotheses and research questions which the study aims to answer.

CHAPTER FIVE

METHODOLOGY

This chapter aims to describe the methodology adopted for this study of women farmers and women's farming groups in Tharaka Division. The chapter first explains the formulation and generation of hypotheses and research questions, and the rationale determining the research methodology, and the type of data required. Techniques of data collection and survey procedures are then described in more detail.

The research took the form of a two-part comparative study. First comparing women's group leaders and members with non-participants, and secondly comparing groups from different sites within the study area.

Three techniques were used to collect data for the research. A complete survey and review of material and records of registered women's self help groups available at the Meru District Department of Social Services was undertaken. A questionnaire survey of women's self-help groups and women's farming activities was carried out in Tharaka Division. In addition a series of structured and unstructured interviews with key local informants, as well as group discussions and participant observation were completed in order to build up case histories for the surveyed women's groups.

The archive material was to be used primarily as a sample frame, although it provides information concerning the distribution and activities of women's groups throughout the District. The questionnaire survey is the primary source of data, with data from the case histories and interviews used to illustrate points and in the discussion of some issues. Additional data sources include

various lists drawn up by local CDAs, Assistant Chiefs and other key informants in the field.

5.1 Formulation of Hypotheses and Research Questions

Previous chapters have reviewed the relevant literature and provided background to this study. This review has also highlighted some of the gaps in knowledge. In particular, little of the work done on women's groups in Kenya has concerned those in dryland areas. Research in these drought prone regions rarely examines the role of women. It has been noted that some authors contend that women's groups are made up of elite women; however, these observations are not based on proven research. Likewise, researchers have assumed that the dissemination of information and innovations takes place through groups, but have not examined the mechanisms and limitations, nor the appropriateness of relying on such a phenomenon as an extension strategy (other than as a cost-effective method). Very little is known about how assistance, either extension contact or input provision, is distributed among groups within a certain area. Lastly, what kind of support or assistance is most beneficial to groups - women farmers are rarely asked their opinions and views. Most studies of women's groups in Kenya offer anecdotal, or case study evidence, rather than systematic, comparable data.

This study aims to fill some of these gaps in our current knowledge. In investigating the effectiveness of women's farming groups in a semi arid region, it chooses to define and measure effectiveness (as opposed to "success") in three areas: First, in terms of women's groups being accessible to women from all social and economic classes. Are groups able to foster effective

participation ie: of poor women farmers, who probably include female household heads? Secondly, are groups effective in terms of dissemination of information from the agricultural extension service, and innovations? Thirdly, between groups, which groups receive support and inputs from government agencies and NGOs, is this assistance needed or appropriate, and is it "fairly" distributed, to groups that can make best use to it. If women's farming groups are effective in these aspects, then a policy of concentrating development assistance targeted to women on women's groups is justifiable. If this is not the case; if poorer women are excluded from groups, then such a policy has important implications in terms of depriving some of the country's poorest households access to resources. From this premise, the hypotheses and research questions below were formulated.

The geographical focus of the research was chosen to be Tharaka Division, Meru District in Eastern Province. The Division lies within the Government of Kenya's Arid and Semi-Arid Lands. The British ODA supports a development programme, the EMI Programme, which covers the area. District data is available at Meru Town, and the University of Nottingham has for some years been involved in research into various aspects of District Development Planning in Meru. The area has been described in Chapter Four.

The central research hypotheses are as follows:

1. Poor women are excluded from participation in women's farming groups: women's group leaders and members will have higher social and economic status than non-participants.
2. That the dissemination of information and agricultural innovations takes place through women's farming groups in such a way that:

- a) Participants in women's groups are more likely to adopt innovations on their own farms;
 - b) Participants in women's groups receive more extension visits and are better informed about agricultural innovations than non-participants;
 - c) Group plots may be used as informal experimental or demonstration plots on which women can test innovations before adopting them on their own farms.
3. The distribution of assistance to women's groups is uneven and groups with certain characteristics are more likely to receive assistance from both government and non-government organisations such that:
- a) Groups located in areas of higher agro-ecological potential are more likely to receive assistance;
 - b) Groups situated in areas more easily physically accessible will receive more assistance;
 - c) Groups registered with the Department of Social Services will receive more assistance;
 - d) Groups involved with income generating activities will receive more assistance.

These Hypotheses combine to propound the thesis that, given a strategy of concentrating development assistance aimed at rural women on women's groups, the poorest women farmers are excluded; because they are deprived access to farming groups, because they are less likely to adopt innovations and are less likely to receive extension visits, and are less likely to be informed about innovations, and even if they are members of groups, those living in low-potential and remote areas, farming on a subsistence basis

are less likely to attract the attention of government and non-government development organisations. Thus a policy of targetting women's groups as recipients of development assistance may further marginalise the poor and diverts resources from where they are most needed. If this can be illustrated within the microcosm of Tharaka, is it correct to assume that the same applies, but to a greater and perhaps more exaggerated extent, to the rest of the country?

The following research questions are generated by the hypotheses:

1. What are the main constraints to participation, and are these likely to effect poorer women more severely?
2. What are the main benefits of participation in groups?
3. Are benefits likely to be appropriate or useful for poor farmers, particularly female heads of households?
4. What do women identify as being the most useful form of assistance or greatest need, on their own farms, in Tharaka generally, and for their groups?
5. Are these forms of assistance available to women in the area?
6. Which groups receive assistance; can they be perceived as most privileged or advantaged in any way? Are they made up of richer women, or are they concentrated in certain areas?
7. Does the distribution of assistance depend on any attributes of the group?
8. In what ways can assistance targeted to women's groups be made more effective, and more likely to reach and benefit poorest households?

5.2 Methodology Rationale

As Rural Development has emerged as an inter- or multi-disciplinary field of study, its methodological approaches are inherently interdisciplinary. In the past much of the work concerning rural women in developing societies was carried out by anthropologists, political scientists and rural sociologists. As a result, studies tended to consist of detailed case studies and observations, for instance of group activities and dynamics. For many years agriculturalists and economists steered clear of issues of gender, their fields requiring the collection of "scientific" and unbiased data.

Chambers (1983) describes two cultures of outsiders and their methods of learning about rural poverty; the negative, extensive research of academics (usually social scientists employing questionnaire surveys), and the positive, hurried, problem solving emphasis of practitioners. Both these approaches share top-down, core-periphery, centre-outwards biases of knowledge, which ignore and undervalue rural people's knowledge and views. Chambers advocates a reversal of learning, a "new professionalism", "putting the last first":

"The third culture, of the rural people in a particular place, is the true centre of learning.....To understand rural poverty better, and to judge better what to do, outsiders, of whatever persuasion, have to see things from the other end." (1983:46)

This third culture is pluralistic, recognising multiple causation, multiple objectives, and multiple interventions; it sees rural development in terms of many dimensions. It is inter-disciplinary by commitment.

Over the past ten years new approaches have developed, recognising the need for a more holistic, inter-disciplinary way of examining rural problems and information gathering. Rapid Rural Appraisal

techniques developed in the early 1980s (Carruthers and Chambers, 1981, Chambers, 1983, and Pratt and Boyden, 1985 for application). For example, the Sondeo approach, developed by ICTA in Guatemala pioneered the use of multi-disciplinary teams - social anthropologists or agricultural economists paired with agricultural scientists (Hildebrand, 1981). Farming Systems Research (Moock, 1986) originated at CIMMYT in Mexico when economists were brought in to investigate the suitability and applicability of innovations. These methods are now gaining popularity among both practitioners and researchers.

Fundamental to the approaches of the various disciplines is the different value given to quantitative and qualitative data. Choices between qualitative and quantitative data may also be considered in terms of trade-offs between breadth and depth. Qualitative methods enable the researcher to study selected issues in depth and detail. Quantitative methods, on the other hand, require the use of a standardised stimulus so that all experiences of people are limited to certain response categories. The advantages of the quantitative approach is that it is possible to measure the reactions of many subjects to a limited set of questions, thus facilitating comparison and statistical aggregation of the data. By contrast, qualitative methods typically produce a wealth of detailed data about a much smaller number of people and cases. Quantitative data come from questionnaires, tests, standardised observation instruments, and programme records. Qualitative data consist of detailed descriptions of situations, events, people, interactions and observed behaviours; direct quotations from people about their experiences, attitudes, beliefs, and thoughts; and excerpts or

entire passages from documents, correspondence, records and case histories. The data are collected as open ended narrative. Patton (1984) points out that a qualitative approach seeks to capture what people's lives, experiences, and interactions mean to them in their own terms and in their natural setting; a qualitative study of people in situ is thus a process of "discovery", a major part of which is to find out about the terms rather than impose them from outside.

In the past, quantitative information tended to be viewed as "hard" data, whereas qualitative data tended to be viewed as "soft". Statistical presentations tend to have more credibility, to seem more like "science", whereas qualitative narratives tend to be associated with journalism. Now however, the consensus seems to be that both qualitative and quantitative data are valued and recognised as legitimate. As Patton observes, in many cases both qualitative and quantitative methods should be used together, and wherever possible, multiple methods should be used.

Added to these issues are those concerned with the fact that this study concerns women. In Chapter Two some methodological problems associated with gathering data pertaining to women were mentioned. These included conceptual problems arising from using the household as the basis of study. In the present study attempts were made to overcome such problems and biases.

Kabeer (1989) discusses gender issues and poverty, maintaining that men and women experience poverty differently and often unequally, and become impoverished through different processes.

Different indicators are therefore needed to monitor poverty:

"What is further necessary is the construction of indicators which recognise that women's lives are governed by more complex social constraints, roles and responsibilities and are led to a far greater extent in the non-monetarised sector than men...assessments of poverty are less obvious in the case of women and of women-headed households from a review of monetary or quantitative data alone and there is a strong case to be made for more qualitative forms of information." (1989:10)

Again, there is a strong argument for utilising quantitative and qualitative data.

So, within the confines of the present study, there was a need to find a middle ground, a compromise between quantitative and qualitative data, which could produce comparable information and results, but at the same time offer deeper insights and hopefully a greater understanding of problems faced by rural women in this particularly harsh and impoverished situation, and so develop workable remedies. The primary technique employed, and therefore major source of data, was a questionnaire survey of women farmers in Tharaka. The questionnaire was used as a tool, to enable data about a wide range of subjects to be collected. It was thus conceived of as a starting point, which gave structure to interviews. It was designed so that some of the data collected were quantitative and some qualitative, with room for discussion and opinions to be voiced about a variety of issues. All interviews were carried out by the researcher with the assistance of a translator. In this way, the survey gains more depth of information than a conventional, pre-coded questionnaire administered by a team of enumerators. The questionnaire design and procedure, as well as discussion of limitations, is described in subsequent sections of this chapter.

Other techniques employed include collating archive data on women's groups in the District, and a series of structured and

unstructured interviews with local informants. Where possible, group discussions were organised, and observations were noted. The aim was to exploit as many local sources of information as possible in the belief that a mixture of these techniques would provide complimentary data.

Specific issues including the definition of the variables used are outlined in the relevant chapters discussing findings.

5.3 Research Techniques

It was necessary to collect data that would enable two sets of comparisons to be made: to be able to compare women - group leaders, members and non-participants; and to compare between different groups. This section describes the three sources of data and techniques employed; the questionnaire survey of women farmers, collation of archive material, and interviews with local informants and collation of case histories.

5.3.1 Questionnaire Survey in Tharaka Division

From July to December 1988 the questionnaire survey of women farmers and women's farming groups was carried out. The choice area reflects current research interest in arid and semi arid regions. This area has been identified (by Gibbon 1987) as being in need of further research, and has been described already in Chapter Four. Little is known about the activities of women's groups from Tharaka, and they have little representation at the District headquarters in Meru Town. Much of Tharaka falls under the Embu-Meru-Isiolo Development Programme, part of the Arid and Semi-arid Lands Programme, which is jointly administered by the Government of Kenya and the British Overseas Development Administration.

i. The Questionnaire

The questionnaire was administered to three different sets of people; women's group leaders, members and non-participants. A common set of questions was necessary to enable comparisons to be drawn between the three different sets of respondents (Hypotheses 1 and 2); additional information was required from group members concerning group activities and assistance received by the group (Hypotheses 2 and 3). The questionnaire was therefore designed in three parts; the first to be answered by all three sets of respondents, the second by group participants (ie: leaders and members), and the third by group leaders only. The questionnaire is shown in Appendix 2.

Part One of the questionnaire is composed of a series of questions concerning the personal, family, household and farm background of the respondents. The aim was to collect data which could be used to test the first hypothesis, concerning the economic and social status of the respondents. Questions were also asked concerning the household farm and farming activities, labour on the farm, time spent on non-farm tasks, income generation and main household expenses, use of credit and extension contact. Some more open-ended questions were also asked, allowing opportunity for discussion on the following subjects; the types of assistance women thought would be most useful on their farms, the main problems experienced by women in Tharaka, what development initiatives would be most effective in relieving these problems, and women's opinions and their perceptions of the benefits of participating in women's groups. Non-participants were additionally asked details of previous membership of women's groups, and why they are not presently members of a group.

The second part of the questionnaire was administered to women's group leaders and members. This section was relatively short and asked questions concerning participation and membership of the group, location and time of meetings, group labour, problems, needs and future plans.

The final part of the questionnaire was answered by group leaders only, and dealt with more detailed explanations of group activities, registration and membership, extension visits, contact with government and NGOs, assistance received and required by the group. Discussion and elaboration of details was actively encouraged so that a fuller picture of the history, achievements and problems, successes and failures, activities and plans could be established. The data, together with group discussions, interviews and observations contributes towards the compilation of cases histories of surveyed women's groups, presented in Appendix 1.

ii. Changes to the Questionnaire after Pilot Testing

The questionnaire was pilot tested over five days in Marimanti Sub-location. Six groups were visited where leaders and members were interviewed, and an additional eight non-participants were interviewed. These interviews were carried out not only to test the questionnaire, but also in process of training the translator, who was recruited with the assistance of the EMI Training Officer and Women's Group Coordinator.

A number of changes were made to the questionnaire after pilot testing. Generally, the questionnaire was found to be too long, with some repetitive or vague questions which women were not able to answer satisfactorily. Wording changes were made so that the questions were easily translated into Kimeru. Changes were also

made in consequence of training the translator, and in consultation with the EMI Training Officer and other staff members. It was found to be difficult to hold someone's attention for more than about forty minutes. The routine of repeatedly having all questions and responses translated from English to Kimeru and back again was indeed tedious and long-winded, but felt necessary for accurate data gathering. It also enabled unclear responses to be immediately probed and clarified, and for discussion to take place.

Apart from the overall length of the questionnaire and difficulties of translation, other issues arose from the pilot testing. It was very difficult to get satisfactory answers to hypothetical questions, and to those asking women to compare things; for example, their own situation to that of their neighbours, or the success of one women's group to another.

More specific problems occurred for a variety of reasons. For example, it is considered very rude and was therefore unacceptable to ask a person's name; asking the number of children, or the number of livestock is even worse, and it is very bad luck for a Tharakan to disclose the exact numbers. The questionnaire was therefore amended and these details were not asked. In some cases, respondents did volunteer this information. In order to establish dependency burdens of the women interviewed, a series of questions about the number of children who are in primary school, at secondary school, at home, grown up, were asked so that a picture of the family was built up. The total family size established in this way and then crosschecked and compared with the size of the household would, if anything be an underestimate. It was noted that respondents sometimes omitted infants from their descriptions

of their family and children.

Concerning livestock, it was decided that it was not crucial to know the exact number of stock kept (it was unlikely that accurate data could be collected), but that the types of livestock kept by the household was useful.

Questions concerning land were also revealed to be complex and in some cases misleading. In some parts of Tharaka land is registered and owned by individuals, and in others the traditional system of communal ownership, with use and rights controlled through the clans, is in operation. It was therefore not applicable to ask questions about the area of land owned by individuals, families or households. Complications also arose because of the complexity of household composition, where up to thirty related people share the same compound. Issues concerning the conceptualisation of the household, including the implications for study of women are highlighted earlier in this thesis. Respondents were asked firstly about the area of land which they personally cultivated, and then about areas cultivated by other household members. It should be remembered that in most of Tharaka a system of fallow farming is practiced, so that in a given season not all the land owned by, or under the control of, a particular household or individual within a household, will be cultivated. Different areas of land have different uses and different kinds of rights controlling those uses (particularly grazing land and land adjacent to water supplies), so the issue is very complicated. Further discussion of variables is contained in the relevant analysis chapters.

iii. Sampling Procedures

152 women's groups were listed as being registered in Tharaka Division between 1980 and 1988, and it was decided that group members from roughly 60 groups should be interviewed. It was assumed that, although not wholly accurate, the lists abstracted from the self-help applications and the register would give an indication of the number of women's groups active in the Division. It was expected that some groups previously registered would now be defunct or dormant, and at the same time, a number of groups would be active but not registered. Key informants estimated that there are approximately 200 women's groups, and possibly more than that, active in Tharaka. The sample of 64 groups studied therefore constitutes approximately one third of the groups active in the Division, and almost one half of all those registered with the Department of Social Services.

It was necessary to select groups across a range of agro-ecological zones, and with different activities and projects, so that the amount and types of assistance received by groups with differing characteristics could be examined. Although the survey was restricted to Tharaka, a range of agro-ecological, and to a certain extent socio-economic conditions exist within the Division.

A problem arose with using the lists collated from the Department of Social Services registration records; beyond the Division, there was no further indication of the locality of the projects. This information was not available at the District level, and there were problems in trying to contact some of the groups selected. Using the list as a sample frame would also immediately exclude non-registered groups from the sample, and as local

informants as well as other researchers (for example, Eyben 1983), working in different parts of the country indicate that a high proportion of active groups may not be registered, it was important to sample some non-registered groups. It was also necessary to compare the assistance received by registered and non-registered groups. It was therefore decided not to use the list as the sample frame and a new sampling technique was adopted. The primary sampling unit was the Sublocation, which would enable all ecological zones to be covered, and to sample at different distances from local markets, centres and communications routes. Group activities were assumed to differ with respect to agro-ecological potential, land use and socio-economic conditions. The Sublocation was also a convenient sampling unit in terms of its role in local administration; from a practical point of view, it was helpful to be able to work with the Assistant Chiefs and other local administrators systematically within each sampling unit. At each Sublocation, the Assistant Chief (the Administrator responsible for the Sublocation) was consulted and asked to supply a list of all women's groups active within the Sub-location, and from that list groups were randomly selected. Although the Chiefs and Assistant Chiefs were often keen that the most successful groups be selected, when the importance of a varied and valid sample were explained, they were always most helpful. Messages were then sent to those groups and a visit arranged. Sometimes meetings would be re-arranged several times before interviews took place. In other instances, when a meeting of groups was called, groups were selected and the group leader (normally the chairlady) and a member, selected with the help of the Assistant Chief or other local informants to be

"representative", were spoken to and a visit or meeting, where the interviews would take place, was arranged with them.

Selecting non-participants proved more problematic. The intention was to interview women from the same areas as those groups interviewed in order to investigate why they were not members of women's groups, and to be able to compare characteristics such as economic and social status and farming methods between group leaders, members and non-participants. However, this is an unknown population, so again Chiefs and Assistant Chiefs, and in some cases local informants such as CDAs, KANU Chairmen, village headmen and local school masters were used to help select respondents.

Local markets were used as bases for these procedures; it was assumed that women from a large catchment area visited the local markets. The local markets in Tharaka are chiefly weekly; Chiakariga, Nkondi, Gatunga, Marimanti and Tunyai are the major markets, with smaller markets held at Gaciong'o, Kamarandi, Kathangachini and Mukothima.

Towards the end of the survey period the rainy season had commenced. This meant that women were very busy in the fields, and that travelling, especially anywhere off the main routes was at best difficult, at worst dangerous. This severely curtailed the researcher's mobility, and in the main travel was restricted to the major markets. The markets were generally quiet at this time as people had little to sell, but people were still visiting the markets to buy food. It appeared that the same people as usual visited the markets, but they tended not to stay so long; they were in a hurry to buy whatever supplies they needed and then get back to work in the fields. As in all rural communities, the

markets play an important role not only in the sale and purchase of local produce; they are the time when people get together to exchange news, public announcements are made by local officials, and it is the opportunity to make contact with the local Chief and Assistant Chief, and with CDAs, Agricultural Extension Officers as well as NGO Staff. Selecting respondents through the markets in this way may have biased the sample slightly, perhaps giving a higher representation of women traders.

iv. Interview Procedure

The interviews were conducted in a variety of settings; sitting in the partial shade of a parched thorn tree in the field, in the respondent's compound, in the local markets, or at the Chief's Camp. Whatever the setting, it was essential that the respondent felt that what was said would be kept private; at all times the interview took place as far away as possible from people so as not to be obtrusive or overheard. In many instances the researcher and interpreter were kindly lent private rooms in which interviews were held.

All the interviews were carried out by the researcher accompanied by the translator. The translator was a female Form Four (ie: secondary school) leaver from Marimanti. It was essential to have a woman working in this capacity; all interviewees were women, who may not have been willing to discuss issues as freely if a man had been present. It was also essential that the interpreter be from Tharaka and therefore speak the same dialect of Kimeru. It was found that most people from Tharaka are generally suspicious of people from other parts of the District; there are great rivalries between them, and Tharakans believe that people from upper Meru dislike and discriminate against Tharakans.

A full introduction was always given; explaining who the researcher was, the reasons for the survey and what questions were to be asked. The confidentiality of the answers given was stressed, and the respondent was given a chance to withdraw from the interview if she wished, and was encouraged to ask questions before agreeing to proceed with the interview. In two cases only did women decide not to proceed with the interview; they did not want to answer questions concerning their family farms. The names of respondents were not asked. The responses were written on a set of prepared answer sheets, with longer answers to more open-ended questions, anecdotal details, comments and observations noted in a separate notebook. Most of the interviews took between forty and sixty minutes. The times varied considerably; the questionnaire answered by non-participants was shorter than that answered by members which was in turn shorter than group leaders'. Throughout the interviews, discussion was encouraged and open-ended, prompting questions were included, and some women were happy to expand their answers. At the end of the questionnaire, women were always asked if they wanted to ask any questions, and this often led to further discussions. There were inevitably some women who did not seem to enjoy the ordeal and appeared uncomfortable during the interview; they were perhaps daunted by the appearance and apparent interference of two strangers. Mostly, women were interested and seemed pleased that someone was asking their opinion of issues that affected their everyday life.

Occasionally a respondent wished to carry out an interview in English, in which case the questions were asked directly by the researcher with the translator on hand should misunderstandings occur. Fifteen women said that they could speak English, and six

interviews were conducted in English. The vast majority of women interviewed spoke no English and only a minimum of Kiswahili.

v. Limitations of the Questionnaire

Questionnaire surveys have many well documented shortcomings as discussed by Chambers (1983), Casley and Lury (1986) and other authors. Administering questionnaires to women may encompass particular problems as, for example, described by Abdulla and Zeidenstein (1987). Questionnaires may include biases, incorporating the concepts, categories and values of outsiders rather than those of rural people. Their penetration is often shallow, concentrating on what is measurable, answerable and acceptable as a question, rather than the probing less tangible and more qualitative aspects of a society. In addition, as Chambers points out:

"for many reasons - fear, prudence, ignorance, exhaustion, hostility, hope of benefit - poor people give information which is slanted or false." (1983:51)

However, at the same time, questionnaire surveys are the most efficient method of collecting a given amount of comparable data. Whilst the researcher was fully aware of the many pitfalls of relying solely on a questionnaire survey as a data gathering technique, every effort was made to minimise biases and other shortcomings. Some of the specific problems associated with the design and administration of the questionnaire, and the strategies adopted to overcome them have already been outlined in this chapter. Theoretical problems, associated with definitions of household and gender division of labour have been discussed in preceding chapters. Throughout interviews discussion of issues was encouraged, and a range of open-ended questions included. In

addition to the questionnaire, data was collected by a variety of different techniques to provide a broader understanding of the issues associated with the present study.

Quantifiable data were coded and submitted to the Statistical Package for the Social Sciences (SPSSX) from which frequency and cross tabulation tables were extracted.

5.3.2 Use of Archive Material

i Aims

Background information on women's groups in Meru District was collected by a review of the registration documents for self-help groups. Initially the intention was to use the records of self-help groups registered with the Department of Social Services as a sample frame from which to select groups to be surveyed. All self-help groups are required by law to register with the Department of Social Services in the District; this allows groups to hold meetings, to collect money, and keeps the Social Services Department informed of projects, activities and other local initiatives, and enables such activities to be co-ordinated through the DDC.

Records of all self-help groups registered in Meru District were examined, and data extracted on all groups registered from 1980 to May 1988. These registered self-help groups include Harambee Groups, sports clubs, water projects, schools and health projects as well as women's groups. Women's groups were defined as those registered as women's groups, and those self-help groups registered with all office bearers named as women. On some forms the gender of members was specified, so groups where all members were female were defined as women's groups. From the data details

of 1608 women's groups were collated.

The data abstracted from the registration application forms includes the name of the group, the aims/functions/activities, the number of members, and the names of the people holding office. In most cases the Division in which the group is located is also written on the form. Each successful application has a registration number allocated to it; most numbers run consecutively, in the order in which applications were submitted, for each year. The number therefore indicates the year in which a group was registered, and what number it was in that year. Although the applications are made on a standard form issued by the Department of Social Services, the format keeps changing, so the information about groups varies correspondingly. However, it was possible in most cases to abstract information on groups to categorise their activities. These categories, and explanations of how they were classified for analysis are set out in Appendix 4. Computer files were created listing the registered self-help groups in the District, with the following information for most groups; name, Division, activities, members and registration number. Lists of women's groups were abstracted from these files.

ii Organisation and Analysis of Data

The data abstracted from the files were able to provide a picture of how self-help groups were developing throughout the District; the numbers registering each year, and in which Division. The information provided on groups activities showed how the emphasis of groups had changed over time: what groups list at the time of their registration will give an indication of their aspiration and motivation. From the data it was possible to estimate the total number of people involved in self-help activities, and the number

of women participating in women's groups. However, this only gives information about groups at the time of their registration, about groups which are registered, and gives no indication of which groups are still active, and which have disbanded. The data therefore only provides a static picture.

The data collected from the District self-help registration documents and the analysis and findings are discussed in the next chapter, Chapter Six.

5.3.3 Additional Data Sources and Compilation of Case Histories

Case histories were prepared for the women's farming groups surveyed. These were compiled after spending time with group leaders and members, through group discussions and interviews, and participant observation. Interviews were also held with a range of local informants; Government and non-government field staff working in Tharaka, local administrators and local teachers. The survey translator was a mine of information concerning the role of women in Tharaka, and the close relationship built with the researcher enabled intimate and normally unmentionable subjects to be broached. Other interviews took place in Meru Town and Nairobi. Case Histories are presented in Appendix 1. Initially, structured interviews were carried out assisted by a checklist of questions, but it was found that this was too formal, was inflexible and clumsy, to the extent that it inhibited conversation in the interviews. As the researcher gained experience the checklist was not used. The researcher was also sensitive to the dangers of introducing bias from local informants (see Chambers, 1983, Castro et al, 1981). Personnel from development organisations are likely to emphasise their role and stress their successful projects and

play down problems and "failures". Local administrators and government employees tend to form the local elite in a poor area like Tharaka. Importantly, most people holding such positions are men, and their perception of women's roles and experiences will be coloured by their own cultural biases. Wherever possible, information was verified and checked. Again, the translator was valuable in this respect. Every opportunity was taken to minimise biases from informants, and where possible data and information validated from other sources.

Earlier sections of this chapter have discussed the relative merits of quantitative and qualitative data and the techniques used to collect data. The rationale of choice of techniques for the present study was explained, with stress being put on using a variety of sources of data, and utilising different, it is thought complimentary, techniques. Although the questionnaire is the major source of information, employed as a tool to collect both quantitative and qualitative data, this should not undervalue the usefulness of data from other sources. These are all considered valuable, but especially in combination with each other.

5.4 Summary

The main source of data used to test the central research hypotheses and to answer research questions generated was a questionnaire survey of women farmers in Tharaka Division. This was supplemented by data obtained from archive material on registered women's groups in Meru District, and by a range of information obtained through the compilation of case histories of groups, and interviews with key informants.

This chapter has highlighted some of the factors considered in adopting the chosen methodology, and the data collection

techniques used. More specific issues concerning the variables and indicators used in testing the hypotheses are discussed in the relevant, subsequent chapters.

Analysis and discussion of findings are presented in the following four chapters. In the next chapter, findings concerning the activities of women's groups in Meru District and the analysis of data collected from archive material is presented, and groups sampled in the questionnaire survey are introduced.

CHAPTER SIX

WOMEN'S SELF-HELP GROUPS IN MERU DISTRICT

This chapter outlines the distribution of women's groups in Meru District. Data collated from the self-help group registration forms are analysed and discussed, in order to provide background to the survey of women's farming groups in Tharaka Division. It describes the distribution of groups throughout the Divisions in the District, the types of activities, projects and enterprises groups are initiating, and the types of assistance available to groups. It also examines the number of women participating in groups in different Divisions.

The chapter also examines the inadequacy of available information sources in providing a reliable picture of women's groups activities in the area, thereby justifying the questionnaire survey. The final sections of this chapter look in more detail at the development of women's groups in Tharaka Division and introduces those groups sampled by the questionnaire survey.

6.1 Registered Women's Groups in Meru District

1608 women's groups were registered with the Meru District Department of Social Services between 1980 and May 1988. Women's groups are registered in all Divisions, and undertake a wide range of activities. Eyben (1983) outlines two basic modes of groups formation which she maintains are operating in Western Kenya and which have encouraged the development of women's groups; when a group is formally structured on the basis of an existing informal group or community association, or a group which is created as a result of some outside initiative. Earlier chapters have outlined the development of the Harambee or self-help movement in Kenya,

and most authors agree that the expansion of women's groups since Independence is as a result of the development of the Harambee philosophy and the political encouragement of such groups. How have women's groups developed over time, and can they be expected to grow in popularity in Meru District?

Eyben found that groups were based on common descent groups, neighbourhood groups, ties of common origin, or consisted of women attending a certain Church. Other groups were started as a result of outside initiative, the founder commonly being a person trying to establish themselves as a local leader.

MacKenzie and Taylor (1987), whose study was based in Murang'a District, maintain that the catalyst of formation of women's groups is considered to be the suggestion made at barazas that — women organise collectively to meet needs which were expressed in terms of their heavy workload, as increasing numbers of children attended school and men migrated for work; in large measure this — was promoted under the state ideology of Harambee. These writers indicate that although groups may be formed from more informal collective bases, a certain amount of outside sponsorship is likely to be required to stimulate the formation of more formalised, for example registered, women's groups. Some historic and traditional background to the development of women's groups is discussed by a number of writers (eg: Stritcher, see Chapter Three), and although traditional women's organisations are more likely to be the base for the present women's groups movement in Kenya, 'todays groups may be formed explicitly to help women overcome modern problems in the rapidly changing economic and social environment of 1980s Kenya.

Eyben also discusses issues concerning groups' registration, and

maintains that rapid registration is a characteristic of those groups formed as a result of outside initiative. She proposed that registered groups represent only a small proportion of active groups. Unfortunately, the lists compiled from the registration documents give no indication of how long groups have been active before they decide to register. The results of the survey in Tharaka indicate that the average length of time between group formation and registration is 2.3 years for the survey groups. Some groups, of course, never register.

Registration demands a fee of 200/= but brings a number of advantages to a group. The group can meet when and where it likes without having to obtain permission from the local headman. The group can open a bank account, and can submit requests for grants to the District Development Committee through the Location Committee.

Table 6.1 below shows the women's groups registered with the Department of Social Services in Meru District between 1980 and May 1988.

TABLE 6.1 WOMEN'S GROUPS REGISTERED PER DIVISION 1980-MAY 1988

YEAR	01	02	03	04	05	06	07	08	09	10	NS	TOT
1980	24	10	28	4	38	3	0	1	-	-	10	118
1981	56	74	14	18	5	6	7	6	-	-	9	195
1982	80	66	33	39	25	21	13	2	-	-	4	283
1983	103	57	35	25	16	28	5	2	-	-	5	275
1984	61	22	26	35	15	19	2	3	-	-	0	183
1985	54	10	25	42	15	20	3	4	-	-	4	177
1986	45	12	38	21	11	13	3	3	-	-	7	153
1987	32	11	48	6	14	38	5	1	23	1	5	184
1988	7	5	8	1	6	4	1	0	4	1	3	40
TOTAL	462	267	255	191	145	152	39	22	27	2	46	1608

Division codes: 01=North Imenti 02=South Imenti 03=Nithi
 04=Igembe 05=Tigania 06=Tharaka 07=Timau
 08=Meru Municipality 09=Ntonyiri 10=Central Imenti
 NS=Division not specified
 Ntonyiri and Central Imenti were created in 1987.

Groups appear to be distributed roughly according to the population of the various Divisions. Table 6.2 shows the distribution of women's groups in six Divisions; North Imenti, South Imenti, Nithi, Igembe, Tigania and Tharaka. Central Imenti and Ntonyiri are new Divisions created in 1987, and Timau and Meru Municipality are not included as they are considered unrepresentative. The Municipality is an urban area with a high population density and as such, not comparable to groups in the rural areas. Timau is sparsely populated, has largescale ranches, is relatively newly settled and has few women's groups. It is the only Division in the District where men outnumber women.

TABLE 6.2 REGISTERED WOMEN'S GROUPS AND POPULATION PER DIVISION

DIVISION	POP 1984	GROUPS 1987	SQUARE KM	POP/SQUARE KM
NImenti	154 724	453	862	178
SImenti	125 934	255	392	321
Nithi	173 058	236	640	270
Igembe	208 706	192	2572	81
Tigania	171 067	131	652	262
Tharaka	61 150	147	1496	41

The population figures used are 1984 estimates, since these precede boundary changes in 1986 in which the two new Divisions were created, but women's groups represent those registered up until the end of 1987. Group membership in the District was analysed with the population data to ascertain the approximate percentage of adult women involved in groups.

Table 6.3 is compiled using data collated from the self-help registration lists. Data was processed using SPSSX. Average group sizes were corrected to exclude groups with over 200 members, which were deemed to be unrepresentative, being withdrawn from the calculation. Population figures are taken from Ministry of Water Development, Water Resources Assessment and Planning 1988 projections (WRAP, forthcoming). Numbers of women aged 16-64 years was calculated assuming 51.0% of population is female (1979 census) and that 50.4% of population is between 16 and 64 years old (projections from 1969 census, Monsted and Walji, 1978).

TABLE 6.3 MEMBERSHIP OF WOMEN'S GROUPS IN MERU DISTRICT

DIVISION	POP 1988	ADULT WOMEN	GROUPS	AVERAGE SIZE	MEMBERS	% ADULT WOMEN
NIMENTI)						
CIMENTI)	414102	106441	731	34.46	25190	23.66
SIMENTI)						
NITHI	208803	53671	255	33.60	8567	15.96
IGEMBE)						
NTONYIRI)	247293	63564	218	40.61	8853	13.93
TIGANIA	202190	51971	145	44.81	9725	18.71
THARAKA	72619	18666	152	26.96	4098	21.95
TIMAU	33783	8683	39	42.62	1662	19.14

When groups from the Municipality, and those for which the Division is unknown are included, the total number of women who are members of registered women's groups is 60660. This represents 20.02% of females aged between 16 and 64 years old. It was assumed, and later confirmed by the survey, that women are rarely members of more than one group.

Analysis of survey data, which takes into account the 196 groups which were recorded at Sublocation administrators and field staff for groups active in July-November 1988, reveals average group

size of 25.9 members. Therefore, total women participating in groups in Tharaka Division is 5076, which represents 27.20% of women aged 16-64 years. In either case, Tharaka shows a particularly high proportion of adult women involved in women's groups. It might be expected that North, Central and South Imenti show a large proportion of women participating in groups, given the high population density and greater income generating activities that exist in those areas. Tharaka, however, having low population density, poor infrastructure, low coverage of government services and few opportunities for income generation, would be expected to have a low level of participation. Could it be that these factors actually mean that there is a greater perceived need for women's groups, that they can bring greater benefits to women in this situation, and that they perhaps play a different role in lower potential areas than in richer areas? Unfortunately, groups were not sampled from other parts of Meru District, but these issues will be discussed in the light of analysis of the groups surveyed in Tharaka, and with reference to the work of other researchers in Kenya.

These levels fall within the ranges calculated by other authors. MacKenzie and Taylor (1987) found 20% of women aged between 20 and 60 years participated in women's groups in Murang'a District. Feldman (1984) analyses data from the Women's Bureau which indicate that throughout Kenya, but excluding Nairobi, 11.1% of women over 20 years of age are members of women's groups. Groups were concentrated in Central and Eastern Provinces; Eastern Province has the second highest level of participation, with 19.1% of women over 20 in the Province being in women's groups. The corresponding figure for Central province is 27.5%. All other

Provinces have less than 10% of women over 20 years old in groups. Her figures are based on Women's Bureau figures for 1978. Eyben (1983) estimates that over 50% of adult women in Siaya District participate in farming groups, which may not necessarily be registered women's groups.

6.2 Goals and Activities of Women's groups in Meru District

Women's groups in Meru District are involved in a wide range of activities. On most of the registration application forms groups are asked to show what their main activities are. This however gives no idea of the aims and objectives of the group, and gives only a static picture of their activities at the time of registration.

Group goals can be put into four main categories; to improve members' incomes, to provide mutual assistance and support, to fulfil social functions, and for community development. Groups may also have religious (for example, Eyben 1983) or political goals (for example, Maas 1986). Improving members incomes may involve setting up a group income generating project, although it is not always the case that profits from these enterprises are automatically distributed to members. Profits may go into a group fund which is then used to fulfil the second goal, that of mutual assistance and support. Members may be paid dividends after a certain amount of time, or profits may go towards buying individual members utensils and other household items, livestock, school fees, or, in the case of richer groups, iron sheets for roofing. It is not known how profits from business enterprises such as posho mills or shops is distributed.

Most groups have goals of mutual assistance and support, which involve helping members in times of contingency. Groups may have funds to help members with medical expenses in emergencies, or to pay school fees if their children are expelled. Members may form communal work parties on each others' farms, for example at harvest time, and may also take on household chores like collecting water and wood, working on the shamba, preparing food, when a member is ill or has just had a baby.

Social goals are less easy to define, although some groups have explicit objectives such as building meeting halls, or forming dancing groups. Goals of sociability may be implicit in many group activities; working together relieves some of the boredom and drudgery of many tasks. Community development goals involve those projects which are planned to benefit not only group members, for example some groups have education and health projects, raising money to build nursery schools, or health dispensaries. As noted in Chapter Four, women's groups may also be important sources of labour for community Harambee projects.

Group activities are undertaken to meet these aims. Many group activities may be set up to raise funds to finance other projects or income generating enterprises. From the data available from the registration application forms, a wide range of activities emerged throughout the District. In all the registered self help groups in the District list more than 170 different activities. These were classified into a number of different categories; this classification is explained in Appendix 4. For example, farming activities include cropping and a range of livestock enterprises; cattle, goats, sheep, pigs, bee keeping, fish ponds, dairying, zero grazing and poultry. Groups are also involved in farming

related projects such as buying tractors, setting up posho mills, grain stores, and buying animal feed. Groups are involved in environmental projects; soil conservation and setting up tree nurseries. Non-farm income generating projects initiated by women's groups in Meru include establishing shops, bakeries, stores. One group has plans to build and run a petrol station. Groups are trading, cooking, selling paraffin, and handicraft projects including knitting, sewing and making baskets.

Table 6.4 shows the activities of the women's groups registered in Meru District from 1980 to 1987. These are the activities specified by the groups on the application forms, so they may not be completely accurate; older groups' activities may have changed over time. There may be confusion between the goals of the groups and the activities undertaken at a particular moment in time. Some of the activities listed may be a "wish list" of sorts, and there is no way of knowing which activities have been successful, and which have been abandoned. In many cases, groups listed more than one activities, this analysis includes only first activity listed. These issues will be discussed in later section in the light of the experiences of the groups sampled.

Table 6.4 shows the predominance of farming and other agricultural activities in women's groups' initiatives. Although some 41.5% of groups' activities are not specified, and this may be due to the format of the registration forms having changed (earlier forms, dating until about 1982 did not ask for details of activities), 33.7% of groups specify their activity as farming. A further 2.8% are involved in environmental projects, and 1.2% are multipurpose, and 3.4% are involved in water projects.

TABLE 6.4 WOMEN'S GROUP ACTIVITIES PER DIVISION 1987

ACTIVITIES	DIVISIONS										
	ALL	01	02	03	04	05	06	07	08	09	NS
FARMING	513	122	70	76	130	40	51	11	5	0	9
ENVIRONMENT	43	16	3	11	0	3	2	0	2	6	0
NON-FARM IG	82	15	8	20	10	13	7	2	5	1	1
WATER	58	23	0	8	8	5	3	4	1	3	3
EDUCATION	40	12	7	11	2	1	3	1	2	1	0
HEALTH	6	0	1	3	1	1	0	0	0	0	0
HOME IMP	83	39	7	26	3	6	2	0	1	0	0
CHURCH	20	4	4	2	5	2	1	0	1	0	0
WELFARE	4	1	0	0	1	0	1	1	0	0	0
SPECIFIC	2	0	0	0	1	1	0	0	0	0	0
SOCIAL	9	4	0	1	0	1	0	1	0	2	0
BUILDING	2	1	0	0	1	0	0	0	0	0	0
FUND RAISE	10	5	1	0	3	0	0	0	1	0	0
MULTI	19	3	0	5	0	1	5	2	0	0	3
NS	632	208	154	73	27	57	73	12	7	0	21
TOTALS	1523	453	255	236	192	131	147	34	25	13	37

NOTE: DIVISIONS: 01=N.Imenti, 02=S.Imenti, 03=Nithi, 04=Igembe, 05=Tigania, 06=Tharaka, 07=Timau, 08=Municipality, 09= Ntonyiri, NS=Division not specified

ACTIVITIES: NON-FARM IG=Non-Farm Income Generating, HOME IMP=Home Improvement, FUND RAISE=Fund Raising, MULTI=Multipurpose, NS=Activities not specified

A full explanation of the classification of the activities of self-help groups is found in Appendix 4.

Most Divisions have similar proportions of groups involved in different activities. The exception is Igembe Division (04) which has a high proportion of groups involved in farming (67.7% compared with the District average of 33.7%), and an apparently corresponding lower percent of non-specified activities (14.0% compared with District average of 41.5%). Home improvement projects appear to be popular in North Imenti and Nithi, and Nithi and Tigania have more income generating activities.

One might expect to see more differences in activities between different areas. It may be that the recording of activities in

this way is not accurate nor detailed enough, and that sorting them according to Divisions, hides differences between areas of different agricultural potential. In areas of high potential, with higher incomes and easier access to markets such as North and South Imenti, more groups would be expected to be involved in income generating activities. However, the categories are not detailed enough to show the different types of income generating initiatives undertaken by the groups. These issues are discussed with reference to areas of differing agro-ecological potential and accessibility within Tharaka division, and comparisons can be made with other researchers' work in higher potential areas.

Have the activities and emphasis of women's groups changed over time? Although the available data only presents a view of the activities initiated at the time of a group's registration, the information may indicate a change in functions over the years. Unfortunately, data is only available for groups registered between 1980 and 1988, a relatively short period of time. MacKenzie and Taylor (1987) suggest that the activities of women's groups have changed, with a recent shift in orientation toward income generation. During the 1960s the majority of groups in Murang'a District were "mabati" groups, raising funds to provide members with iron sheets for roofing, and during the 1970s, revolving loan funds predominated. Many groups had secondary functions, in terms of social welfare and community development projects; providing labour for constructing cattle dips, building nursery schools and dispensaries. By 1984, MacKenzie and Taylor found that 45% of groups were involved in income generating activities, and there was a greater range in those activities, diversifying away from handicraft production, into enterprises

such as posho mills, and purchasing land.

Is it possible to detect changes in the stated activities of groups in Meru District? When activities of women's groups registered in the District are analysed, there is an indication that non-farm income generating activities are rising. General farming activities have remained fairly static; the overall average is 32.3% of groups involved in farming activities; this rises to 48.4% in 1986, and then drops to 39.1% in 1987. Non-farm income generation, with on average 5.5% of all groups undertaking such enterprises, has risen more than tenfold from only 0.8% of groups registering in 1980, to 9.2% of groups registering in 1987. There is a decrease in groups involved in home improvement activities: from 6.8% in 1980, to 2.2% in 1987. Although these figures are by no means wholly accurate, for the reasons outlined above and because activities are not specified for a proportion of the groups, nonetheless they do indicate that over the last eight years women's groups in Meru have become more directed towards income generating activities.

6.3 Assistance

Feldman (1984) has postulated that women's groups have come to be seen as the chief, if not the only, means of improving the position of rural women in Kenya. These policies have been discussed earlier (Chapter Four), and are justified by the Kenyan Women's Bureau both on the grounds of strategy, and because of limited resources. This section outlines the types of assistance available to women's groups in Meru District.

Information was collated from District Agricultural reports, Reports of the Ministry of Culture and Social Services, District

Development Plans, and from interviews with a range of Government and non-government staff working at a District level, as well as fieldstaff in Tharaka. Records are patchy; little documentary evidence exists to chart the various types of assistance provided to women's groups in the District, so most information was obtained through interviews with informants.

The assistance provided to women's groups falls into three main categories; extension and advisory services, both agricultural and non-agricultural; input provision, including capital (grants and loans), materials and other inputs; training. All are provided by various Government Ministries and Departments, and a variety of non-government agencies working in different parts of the District.

i. Extension and Advice

Extension and advisory services to women's groups are provided by Government, particularly through the Ministry of Agriculture and Livestock Development's extension service, and from the Department of Social Service's CDAs. In addition, certain NGOs operate different systems of extension and advice in various localities of the District. Government Services are the most widespread and significant.

The Ministry operates advisory services through Agricultural Extension agents, and through Home Economics Extension agents. No details of coverage were found in any of the records available. However, Home Economics Extension is aimed more specifically at women, and is better recorded in District Reports. The Home Economics Extension service operates through a series of home economics groups throughout the District, which are in effect, women's groups. Lectures and demonstrations are presented by

extension staff to these Clubs. Recent Ministry Reports do not give details of staff coverage; the 1977 report lists 22 staff members, who include Technical Officers, Technical Assistants and Junior Assistants. Coverage was uneven; North Imenti and Nithi Divisions each had six staff members, South Imenti three, Tigania two, Tharaka one and Igembe none. Staff are also based at Kaguru Farmers Training Centre and Kaaga Rural Training Centre. Numbers of Home Economics Clubs vary accordingly, with none in either Tharaka or Igembe, and three only in Tigania. North Imenti, South Imenti and Nithi have 28, 41, and 34 active groups respectively. It is therefore likely that Extension Services are concentrated in these three Divisions. No Home Economics Extension Agents were posted in Tharaka at the time of the survey in 1988. All the Home Economics Staff are women.

Table 6.5 shows the number of lessons taught by Home Economics Extension Agents during 1974, 1976, 1977, and 1980, and the number of women attending the lessons. The table was compiled from Ministry of Agriculture Annual reports.

TABLE 6.5 HOME ECONOMICS EXTENSION TO WOMEN 1974 - 1980

SUBJECT	1974		1976		1977		1980	
	NO.	ATT.	NO.	ATT.	NO.	ATT.	NO.	ATT.
VEG. GROWING	128	2613			224	7156	211	4832
FOOD&NUTRITION	140	3493	154	4247		4746	462	4620
CHILDCARE	103	1555	88	2402	163	4142	117	3599
HEALTH	123	3354	100	1463			156	9350
HOME MANAGEMENT	73	1465	44	1525	82	243	70	8360
HOME IMPROVEMENT	104	1851	99	1444	94	5025	185	3345
FAMILY LIFE	76	1456			1	193	84	4343
GEN. EXTENSION	115	3596		1719			61	7623
CLOTHING&TEXTILES							115	2308

Most lessons do not concern agricultural extension. Vegetable Growing lessons instruct women in setting up kitchen gardens and husbandry techniques. Food and Nutrition involves growing different foods, and information on selection, storage, preservation and handling food, and the constituents of a well balanced diet. Childcare and Development informs women about childrens' physical and emotional requirements. Health and sanitation concerns matters of personal, house, compound, clothes and food cleanliness. Home Management instructs on the better management of time, energy and resources. Family life education covers interactions and relationships between family members. General Home Economics extension teaches the construction of household conveniences like dishracks and raised fireplaces. Unfortunately there are no corresponding records of CDAs' extension activities. CDAs are responsible for supervising registration of groups, recommending groups which need assistance, and helping groups in terms of gaining access to funding and other inputs and services. The CDAs interviewed were concerned with instructing groups on cooperation, and advising them on how to keep records, keep accounts and run meetings. At the time of the survey there were four Social Services Department staff posted in Tharaka; the Division Social Development Officer, and three Locational CDAs: The CDA in North Tharaka was covering two Locations; Gatunga and Gikingo. One CDA is a woman, the other three are men. The present District Social Development Officer, posted to Meru in 1988, is a woman. Both Ministries complain of a lack of personnel and severe constraints concerning transport. Extension and advisory services provided by NGOs are scattered throughout the District, but again, no records of coverage are

available. Most notable are Plan International, who operate in Igembe and Ntonyiri, CARE-Kenya, in South Imenti and Tharaka, CANSAVE, throughout the District, EMI in Tharaka, Maendeleo ya Wanawake/GTZ in high potential areas and Kamujene Farmers Training Centre in Tigania. Plan International, CARE-Kenya, CANSAVE and EMI deploy extension agents and field animators in specific parts of the District and advise women's groups on agricultural and non-agricultural matters.

ii. Inputs

Input provision is even more complex and poorly recorded. In the Government sector, some grants are distributed through the Ministry of Culture and Social Services. Available records show that in 1977 there was no cash aid to women's groups in the District from Government sources. In 1980, five groups received grants (value unspecified) distributed through the DDC. In 1984 22 groups received grants from the Women's Bureau worth 207500/=. In 1984 17 groups received grants totalling 90000/= through the Ministry of Culture and Social Services. In the same year one group received an identical amount from the Government of Norway to fund a handicrafts project. The District Women's Development Committee was set up in 1982, with the aim of coordinating and channelling funds and assistance to women's groups. Whilst records are very sparse, it would appear that the amount of capital available to women's groups in the form of grants was at least increasing during the early 1980s. However, with over 1600 groups in the District in 1988, very few groups are able to benefit from these valuable injections of cash.

A host of other inputs are also available to women's groups through the Government sector, but once again records are

incomplete. The Ministry of Agriculture distributes agricultural inputs to women's groups. For example, in 1980, five groups received pigs and chickens, and an unspecified number of groups received fertilisers, seeds and chemicals. In 1986, two groups in North Imenti received chicks. The records give no indication of the true number of groups which benefit from inputs from Government.

The provision of inputs from both Government and non-government sources was investigated during the survey of women's groups in Tharaka, and findings are discussed in Chapter Nine. Groups in Tharaka had received inputs such as tools from the Ministry of Agriculture. Both Ministries comment on a lack of resources to allow them to increase the inputs provided to women's groups.

NGOs in Meru provide a range of different inputs to groups. Churches, particularly the Methodists, the Diocese, and PCEA may donate land for groups to use, and along with schools, encourage groups to set up demonstration plots and provide improved seed, fertilisers and tools. Plan International provides similar inputs to groups in Igembe and Ntonyiri. CARE-Kenya has bought Galla goats for groups in Tharaka, and provided materials for the construction of goat sheds and water tanks. CANSAVE has provided capital inputs and materials to help groups build bakeries and water tanks. EMI lends Galla bucks to groups, provides improved seeds and tree seedlings. Kamujene Farmers Training Centre and World Vision distribute improved seeds and tree seedlings to groups. Maendeleo ya Wanawake/GTZ's energy project supplies improved stoves and tree seedlings to groups. The scale of these organisations' involvement differs, and most are limited to certain parts of the District.

iii. Training

Training facilities are provided at various Farmers Training Centres and Rural Training Centres in the District. The main Government Centre is Kaguru Farmers Training Centre at Nkuene. The centre runs up to 40 courses for farmers each year. However, the only courses aimed specifically for women are Home Economics (as described above), or handicrafts courses. No courses specifically for groups or group members have been run. Female attendance is considerably lower than male; women constitute between 12% and 38% attendance on courses in most years (calculated from District Agriculture Reports 1977-1986). Attendance of courses aimed specifically at women appears to be particularly low. The Ministry comments that a major problem affecting attendance is the lack of transport to the centre. Also reported is a lack of staff and training materials.

Other training centres are supported by NGOs; for example the Methodist Church provides staff and runs courses at Kaaga Farmers Training Centre and at Marimanti Rural Training Centre. No courses run especially for members of women's groups have been recorded or observed. VSO have a volunteer posted at Kamujene Farmers Training Centre and are keen to encourage more women to attend courses for farmers at the centre. However, responsibilities at home and on the farm often make it impossible for women to be absent for a number of days (courses at Kaguru normally last five days). As a District Agricultural Officer in Kisii District observes (reported by Feldman 1984), women are unable to come on agricultural training courses because they are too busy running the farms.

6.4 Women's Groups in Tharaka Division

i. Registrations

The preceding analysis has shown that Tharaka has a high percentage of women involved in women's groups; higher than might be expected in an area as sparsely populated and poorly served by infrastructure and services. Table 6.6 shows the number and percentage of women's groups registered per year in Meru District and in Tharaka Division. It also shows the distribution of the sampled groups, 54 of which were registered, although for one the year of registration is unknown. Figures for Meru District and Tharaka include registrations recorded up until May 1988.

Registration of women's groups in the District reached a peak in 1982 and 1983. This is thought to be due to legislation introduced after the 1982 coup attempt which made it compulsory for all self-help groups to be registered and gain permission from local administration to hold meetings. Registration of groups in Tharaka also show peaks in these years, but the largest number of groups were registered in 1987.

TABLE 6.6 WOMEN'S GROUP REGISTRATIONS FOR MERU AND THARAKA

YEAR	MERU DISTRICT		THARAKA		SAMPLE	
	NO.	%	NO.	%	NO.	%
1980	118	7.6	3	2.0	3	5.6
1981	195	12.1	6	3.9	2	3.7
1982	283	17.6	21	13.8	7	13.0
1983	277	17.2	28	18.4	5	9.3
1984	183	11.4	19	12.5	6	11.1
1985	175	10.9	20	13.2	5	9.3
1986	153	9.5	13	8.6	7	13.0
1987	184	11.4	38	25.0	12	22.2
1988	40	2.5	4	2.6	6	11.1

From the sample it was found that the average length of time between formation of the group and it registering was 2.3 years. Some groups of course may never register. Non-registered groups were added as if they were to register in 1988. Fifteen of the 54 groups were registered in the same year as the group formed, other groups had waited up to nine years before registering. Registration may depend on the motivation and diligence of local staff, particularly CDAs who may encourage women's groups to register (as suggested by Eyben 1983). This may go some way in explaining the high numbers of registrations in Tharaka in 1987 and 1988, when a new CDA arrived in South Tharaka Location. Information supplied by local informants indicate that approximately 75% of women's groups active in the Division are registered. 84% of surveyed groups are registered.

ii. Distribution

At each Sublocation in Tharaka Division lists were compiled of all women's groups. This process often combined the efforts of the local Assistant Chief, CDA and any other field officers from NGOs available. It seems doubtful that these lists are exhaustive, but they give an indication of the scale of women's group activities in each Sublocation. Eyben (1983) found that in Siaya District in Western Kenya, at each level of the local administration, the number of groups known grew in size as one descended from the District, to Division, to Location and then down to Sublocation level.

Table 6.7 below shows the number of women's groups in each Sublocation recorded by this method.

TABLE 6.7 WOMEN'S GROUPS PER SUBLOCATION IN THARAKA DIVISION

SUBLOCATION	NO.	SUBLOCATION	NO.
Kamanyaki	10	Kanyuru	17
Chiakariga	32	Gatue	17
Tunyai	14	Gatunga	10
Nkondi	16	Kathangachini	5
Marimanti)		Irunduni	23
Turima)	38	Kanjoro	14

It is suspected that many of the above figures may be underestimates; Kathangachini, Gatunga and Tunyai are expected to have more women's groups than stated above. The most reliable figures are probably for Chiakariga and Irunduni, and these show the greatest number of groups. The list of groups in Chiakariga was drawn up with the assistance of the EMI Women's Group Coordinator who is based in Chiakariga, and the list from Irunduni by the CANSAVE field animator from Mukothima. Such personnel obviously have a more clear picture of women's groups activities. These lists indicate a total number of groups in the Division of 196. This is closer to figures given by Division personnel (200 to 250). It might therefore be assumed that at least 25% of groups are not registered with the Department of Social Services.

Table 6.8 shows the analysis of the reported groups in each Sublocation and population data. The figures used are the Ministry of Water Development's 1988 projections (WRAP, forthcoming). It should be noted that these are projections from the 1979 census, and do not take account of movements within the Division. It has been observed that there are movements of population away from northeastern areas, Kathangachini and Kanjoro, and into Gatue and Irunduni. These factors combined with the expected inaccuracies

already discussed concerning reporting of groups in each Sublocation, mean that these figures are only indicative.

TABLE 6.8 WOMEN'S GROUPS AND POPULATION IN THARAKA

SUBLOCATION	GROUPS	POP	WOMEN 16-64 YRS	WOMEN/ GROUP	WOMEN IN GROUPS	% WOMEN IN GROUPS
KAMANYAKI	10	5177	1331	133.1	259	19.46
CHIAKARIGA	32	7018	1804	56.4	829	45.95
TUNYAI	14	6430	1653	118.1	363	21.96
NKONDI	16	10239	2632	164.5	414	15.73
MARIMANTI)						
TURIMA)	38	12345	3173	83.5	984	31.10
KANYURU	17	6722	1728	101.6	440	25.46
GATUE	17	4039	1038	61.1	440	42.39
GATUNGA	10	6636	1076	107.6	259	24.07
KATHANGACHINI	5	3009	773	154.6	130	16.82
IRUNDUNI	23	2073	532	23.1	596	112.03*
KANJORO	14	8931	2296	164.0	263	11.45
TOTAL	196	72619	18666	95.23	5076	27.19

* see text

Similar assumptions concerning proportion of women aged 16-64 years were made as in Table 6.3. Number of women in groups was calculated by applying the survey average for group membership; 25.9. This may not be appropriate; groups in more sparsely populated areas may be smaller than groups in more densely populated areas. Groups in Irunduni must be larger than the survey average, unless some women are members of more than one group. It appears that all adult women in Irunduni are members of women's groups. It is also in this area that there is disputes about the administrative boundaries, so more groups may be counted as being in the Sublocation than actually are (they may in fact be in Tigania Division, but consider themselves to be in Irunduni). Irunduni and Chiakariga show high levels of participation in

groups. These Sublocations were expected to have high rates as Chiakariga is the Division administrative centre, and Irunduni is a high potential area.

Kathangachini and Kanjoro both display lower rates of participation, and this is expected to be due to low population density. Nkondi Sublocation shows a low rate of participation, and it is difficult to postulate why, except may be something to do with younger families having moved into settlement areas.

Tharaka however, generally displays a high rate of participation in women's groups, and all Sublocations have more than 10% of women aged 16-64 years active in women's groups. Chapter Seven analyses differences between participants and non-participants.

iii. Activities

Table 6.9, was compiled from the data collated from the self-help registration forms, and shows the stated activities of registered women's groups in Tharaka, where the survey of women's farming groups was undertaken.

Almost 50% of groups do not specify their activities on the registration form. Of the remainder, 78% are involved in agricultural activities, with 4% involved in farming related activities (environmental projects and a posho mill), and 7% have general or multipurpose activities. Agricultural projects appear to be the base for most women's groups activities. During the survey it was found that most groups have more than one activity, and the data available hides this; only the first named activity is shown in the above table. Activities of the sampled groups are discussed in greater detail in Chapter Nine.

TABLE 6.9 WOMEN'S GROUP ACTIVITIES IN THARAKA 1980-1987

ACTIVITIES	NUMBER OF GROUPS								ALL
	1980	1981	1982	1983	1984	1985	1986	1987	
FARMING	1	0	3	7	3	3	3	13	32
POULTRY	0	0	0	0	2	1	1	5	9
GOATS	0	0	1	1	0	1	0	8	11
CATTLE	0	0	0	1	0	0	0	0	1
LIVESTOCK	0	1	0	0	0	0	0	1	2
BEEES	0	0	0	0	0	0	0	1	1
DIGGING	0	0	0	0	1	0	0	0	1
ENVIRONMENTAL	0	0	0	1	0	0	0	1	2
POSHO MILL	0	1	0	0	0	0	0	0	1
STORE	0	0	0	0	0	1	0	0	1
BAKERY	0	0	0	0	0	0	0	1	1
BUILDING	0	0	0	1	0	0	0	0	1
STORE BUILDING	0	0	0	0	0	0	1	0	1
CHURCH GROUP	0	0	0	0	0	1	0	0	1
PETROL STATION	0	0	1	0	0	0	0	0	1
BASKETS	0	0	0	0	0	1	0	0	1
HOME IMPROVEMENT	0	0	1	0	0	0	0	0	1
MULTIPURPOSE	0	0	0	0	0	0	0	1	1
GENERAL	0	0	0	0	0	1	2	1	4
NOT SPECIFIED	2	5	15	18	13	11	6	3	73

6.5 Summary

The information presented in this chapter has provided an overall picture of the distribution and activities of women's self-help groups in Meru District. The analysis shows that registration of groups peaked in 1982 and 1983. Women's groups are registered in all Divisions, with North, Central and South Imenti having the highest numbers, and also the highest percent of adult women involved in groups. Tharaka Division, despite being more sparsely populated and having poor infrastructure and service provision, also displays a relatively high proportion of women participating in women's groups.

Women's groups in Meru District undertake a range of activities, with many groups declaring more than one activity, although the majority of groups' interests are agricultural. Groups often use

farming to raise funds to finance income generating projects, or set up agricultural related businesses. There is limited evidence that groups in higher potential areas are becoming more orientated towards income generation. This thesis maintains that women's groups are in essence farming groups, and that this is particularly true of groups in lower potential areas - like Tharaka - where few opportunities for non-farm income generating activities exist. The survey concentrates on farming groups.

Extension services aimed specifically at women are mostly not concerned with agriculture, and appear to be confined to certain areas in the District.

Although there would appear to be increasing funds available to women's groups in the District, given the large numbers of groups, very few are able to benefit from capital inputs.

Training opportunities for women are centralised geographically and are often inaccessible to women farmers who are not able to take time away from home and farm responsibilities. There is a low rate of attendance by women on courses run at Farming Training Centres.

Data collated from the self-help registration documents tells us only about groups which are registered with the Department of Social Services, and gives us a static view of those groups; their membership and activities at the time of registration. We can only identify general trends. Records of assistance to groups are incomplete and inconsistent. A survey of groups would be able to clarify many of the issues raised by the data from the District records. This data has given some idea of participation rates, but tells us nothing of which women are participating in groups.

Subsequent chapters examine the role of women's farming groups in Tharaka and present information collected in the survey of women farmers and women's groups there. The next chapter, examines women's participation in farming groups, and compares group leaders and members with non-participants in Tharaka.

CHAPTER SEVEN

WOMEN FARMERS IN THARAKA: ECONOMIC AND SOCIAL

STATUS OF WOMEN'S GROUPS LEADERS, MEMBERS AND NON-PARTICIPANTS

Although numerous studies of women's groups have been conducted in Kenya, none have compared participants and non-participants. Some writers eg: Feldman, 1984, Wisner, 1988, have postulated that women's groups may be elitist organisations, but this has yet to be conclusively proved through such a comparison. If women's groups are to be effective vehicles for women's self-reliance, they must be representative of the rural population. Furthermore, if they are to enhance the livelihoods of poor rural families, and thereby justify a concentration of development resources from both government and NGOs, then they must be accessible to the poor. This chapter sets out to answer the questions: How do women's group members differ from non-participants? What are the main constraints to women's participation in farming groups, and are these likely to affect some women more than others? Are women's groups always beneficial to women, and what benefits do women associate with participating in women's farming groups? Hypothesis One postulates that women's group leaders and members have higher economic and social status than non-participants. If this hypothesis is proved, then questions are raised concerning the ability of women's groups to foster the participation of the rural poor, whether they are able to increase the access of poorer women to agricultural development resources, and whether poorer households can benefit from women's groups and the resources that are targeted to them.

This chapter presents survey findings and tests this hypothesis. It examines the reasons why some women may be excluded from groups. In investigating the characteristics of group leaders, members and non-participants and how they differ, it may be possible to draw conclusions concerning the nature and functions of the groups and the reasons women do or don't join groups. The chapter first investigates the economic and social status of the survey respondents.

7.1 Economic Status

The economic status of respondents is assessed using a number of different indicators, judged to be appropriate in defining the relative wealth of the farm household. Conventional variables such as income levels, education and occupation were not considered suitable. The indicators used were income sources, self-sufficiency, livestock ownership and labour use.

Castro et al (1981) show that even amongst the poorest communities, in the poorest nations, there are gradations of poverty. Castro et al examine indicators used to examine differences in wealth within a community, including universal indicators, and those perceived by local people themselves. These include: ownership or control of land; cash crops; equipment or tools owned; livestock; property, including housing and consumer goods; access to fuel; ceremonial expenditure; diet, nutrition and health; education; household size and composition.

Castro et al argue that using level of income as a measure of wealth has serious conceptual and methodological problems when studying a peasant or subsistence based economy. The concept of income as defined in classical economics is not applicable to peasant agriculture; peasant run households, not capitalistic

enterprises. Households are said to strive for subsistence, the fulfilment of needs and obligations, and the maximum use of their most abundant resource, family labour. This contrasts with capitalistic enterprises which strive for profits.

"Despite the fundamental role of income...it is usually the least useful information in village surveys unless the methodology is clearly stated in a way that clarifies the concept of income used, shows the reliability of measurements and explains the method of data collection." Castro et al (1981:406)

This then is the rationale for rejecting income as the measure of relative wealth. Income may be especially unsuitable when considering the position of women (Kabeer, 1989). Likewise, education would be inappropriate as few women will have been formally educated.

Families in Tharaka live in a vulnerable situation in a rapidly deteriorating environment where demands for cash are increasing as traditionally subsistence-based households are drawn into the cash economy. Commoditisation, as described in Chapter Two is taking place; the traditional system of exchange and barter is breaking down, and families need cash to buy clothes and food, medical services, agricultural inputs and schooling. It is the sources of household income that reflect the economic security and relative prosperity of the household. The wealthiest families have regular cash income when at least one household member is employed permanently in the formal sector and regularly contributes money towards household expenditure. Work reviewed in earlier chapters (eg: Barnes, 1983, Hogg, 1984, O'Leary, 1980) has shown that access to non-farm sources of income may be the major factor determining differentiation or stratification of rural households in Kenya. Wealthy households tend to grow large areas of cash

crops. The poorer households have little or no access to regular sources of income, and satisfy cash needs by selling livestock, livestock products and any surplus intermittently. The poorest families, who perhaps have neither livestock nor surplus to sell in times of need, sell their labour and the products of their labour such as baskets, or produce that they have collected such as firewood, water, tamarind seeds, acacia pods and other wild fruit, often in return for food rather than money.

Degree of self-sufficiency is considered an indicator of economic status. Although most households will sell and buy food at various times of the year, a distinction is made between households who are overall in surplus and those overall in deficit, in most years. In general, Tharaka is a food deficit area (see Wisner, 1973). More prosperous Tharakan households regularly produce food surpluses which are sold primarily at local markets (traders from Meru Town may buy to take up to higher potential areas). Poorer households are never able to produce enough food to meet the needs of the family and normally have to buy food, or work in exchange for food, at some time during the season.

Livestock play a vital role in the economy of Tharaka; as outlined in Chapter Four, households keep mixed herds of cattle, sheep and goats for a variety of reasons including food, security, social exchange, profit and ritual. An indication of economic status is therefore the size and composition of the household's herd. Unfortunately details of the numbers of stock kept by the respondents and their households was extremely difficult to collect, so ownership of different animals was considered. As such, the richest households were assumed to be those which owned mixed herds of cattle, sheep, and goats. The poorest households

are those who keep no livestock. These households are particularly vulnerable during contingencies such as drought or illness, and may have difficulty raising funds for "lumpy" expenses such as school fees.

Labour sources and use are also considered important indicators of economic status; wealthy households are able to employ permanent labour on their farms, whereas poorer families have to hire out their own labour to others. Availability of labour will have important effects on the area of land cultivated, and the crops grown and probably self-sufficiency in foods. It will also be of significance for households headed by women, and may be linked to access to non-farm sources of income.

7.1.1 Sources and Generation of Income

The aspects of income investigated include sources of income, who in the household contributes income, and details of income generation by the respondents. Levels of income were not asked, most importantly because few people, especially women, in Tharaka have a regular income. It would be very difficult to get accurate estimates of income from people in informal employment and casual labour, and would be misleading to compare these figures; incomes fluctuate, and casual labour is often paid in kind. In many cases respondents identified livestock sales as the main source of income, and livestock purchases as the main expense. Table 7.1 shows the main sources of income in respondents' households.

TABLE 7.1 INCOME SOURCES

	FREQUENCY	%
RESPONDENT	42	22.1
RESPONDENT&HOUSEHOLD	3	1.6
HOUSEHOLD	19	10.0
LIVESTOCK ONLY	34	17.9
FARM ONLY	62	32.6
RESPONDENT&FARM	10	5.3
HOUSEHOLD&FARM	11	5.8
ALL	1	0.5
OTHERS	8	4.2

55% of households are dependent on agriculture (farm and livestock only) for their income. 22.1% are dependent on the respondent as only source of income. Broken down by respondent, this represents 35.4% of non-participants, 21.3% of members, and 9.4% of group leaders. Non-participants are more likely to be the sole income earners in their households. 10.0% of households receive income from other household members, most often husbands; 17.2% of group leaders, 11.5% of members, and 1.5% of non-participants. In general, group leaders are more likely to live in households where other household members are employed and contribute to household expenses. 17.9% of respondents said income was from livestock only; 15.6% of group leaders, 16.4% of members, and 21.5% of non-participants. Group leaders therefore have more, and more varied sources of income.

Very few respondents receive cash remittances from other family members (this contrasts with World Bank, 1989, although they quote findings from the early 1970s). A few elderly women receive remittances from their sons or daughters employed in the formal sector. For example, in interview no.075 a woman in her sixties explained that her daughter who works as a teacher sends her 200/=

a month. The woman farms 2.5 acres in Chiakariga Sublocation on her own, and supplements her income by working on shambas one day per week.

22.6% of respondents earn income through casual employment, while 8.4% have regular employment. 7.8% of group leaders have regular, formal sector jobs (therefore regular income), compared with 1.6% of members and no non-participants. Whilst women who are employed in regular, formal sector jobs are a minority, they represent an economic, and to a certain extent, social, elite. For example, interview no.014 was with a group leader who works as a nurse at Tunyai Dispensary. Aged 40, she has six children and lives with her husband who is also employed in the formal sector. They own 10 acres on the settlement scheme at Tunyai growing a variety of cash and food crops including maize, cotton and sunflower. Labour is employed fulltime, including a housemaid. All six of the children go to school, and one is at secondary school.

14.1% of group leaders undertake farmwork on a casual basis, compared with 23% of members and 23.1% of non-participants.

21.5% of the non-participants are market or business women, mainly engaged in petty trading; this compares with 1.6% of members and 3.1% of group leaders.

Overall, non-participants are revealed to be more dependent on irregular sources of income, and are more likely to be sole income earners in their families.

7.1.2 Self Sufficiency

Only 10% of respondents said that they were able to produce enough food in most years to feed their families and sell surpluses. 12.6% normally grow enough food to feed the family throughout the year, but do not produce enough to regularly sell surpluses.

Although most farming households trade food, they sell at certain times of the year and buy at others, overall 75.8% said that they did not grow enough food for the household, and have to buy food (Abella et al, 1980, found that 70% of farmers had to buy food).

TABLE 7.2 SELF SUFFICIENCY

	GROUP LEADERS	COLUMN % MEMBERS	NON-PARTICIPANTS
JUST ENOUGH	18.8	19.7	0
BUY FOOD	64.1	68.9	93.8
SURPLUS	17.2	11.5	1.5
N/A	0	0	4.6

93.8% of non-participants find themselves food deficient in most years and have to buy food, compared with 68.9% of members and 64.1% of group leaders. Only one non-participant sold surplus food, compared with 11.5% of members and 17.2% of group leaders. Using self sufficiency in food as an indicator of economic status, it is therefore concluded that non-participants have lower economic status than either members or group leaders.

7.1.3 Livestock

The importance of livestock in the cultural and farming system in Tharaka has been discussed in previous chapters, and the role played by livestock in representing wealth and other functions has been highlighted. Cattle and goats are particularly important for dowry payments, in the maintenance of social obligations, and as status and wealth symbols.

Abella et al (1984) found that 85% of farmers surveyed in Tharaka owned some livestock, and some 60% owned cattle, sheep and goats. There was wide disparity however, with 25% of farmers owning 60%

of livestock, and 25% owning only 6%. Differences may also occur across different agricultural zones within the Division; livestock may be more important in drier zones, where they act as insurance against crop failure, although farmers in more prosperous areas may choose to invest profits in livestock. Land availability and tenure may also affect livestock ownership.

Questions were asked about the type of animals kept by the household. It was not attempted to get actual numbers as local informants explained that such questions were considered very impolite, and accurate figures would be difficult to obtain.

Goats and cattle are the main stock kept; goats are more important. Cattle are prestigious and highly desirable, having increased value but also increased risk (during the 1984-85 drought, cattle herds were decimated but few goats were lost, although herd sizes were cut down through people selling stock). Sheep are normally kept in small numbers and are used for ceremonial purposes.

Farming households are most likely to invest their money in livestock; many respondents stated that livestock were not only their main source of income, but also their main expense; any surplus income is reinvested in stock. It was concluded that the wealthiest households keep cattle, sheep and goats; the poorer households goats only; the poorest households have no stock. This is a particularly vulnerable position to be in, and probably reflects not only low economic status, but also low social status. Actual ownership of livestock on an intra- and inter-household level is also complex. For example, it was observed in Chapter Four that women are able to own goats, but may not have rights to slaughter them. Women may have separate rights to milk and other

livestock products.

For the purposes of this study, respondents were asked details of stock kept by their household. Abella et al (1984), attempt to estimate herd size and describe an "average" herd as consisting of 12 cattle, 28 goats, and 11 sheep. Sterkenberg et al (1986) found that 45.7% of households in the dryland areas covered in their survey (Nkondi, Chiakariga and Tunyai sublocations) owned cattle; 85% of households had goats, and 34.3% had sheep. Table 7.3 shows the results of the present survey.

TABLE 7.3 LIVESTOCK KEPT BY HOUSEHOLDS

	% KEEPING		
	CATTLE	GOATS	SHEEP
NONE	47.6	31.6	40.5
LOCAL	52.1	67.9	59.5
LOCAL AND IMPROVED	0	0.5	n/a

The table shows that 68.4% of households keep goats, but only one household keeps "improved" goats (Galla goats, as bred by EMI's Goat and Sheep Project at Marimanti). No households kept improved cattle (this is not surprising due to the harsh environment and availability of water and fodder).

The next table, Table 7.4 shows the type of livestock kept by households in the survey.

TABLE 7.4 TYPE OF LIVESTOCK KEPT

	FREQUENCY	%
CATTLE SHEEP AND GOATS	80	42.1
CATTLE AND GOATS	15	7.9
GOATS AND SHEEP	21	11.1
GOATS ONLY	15	7.9
SHEEP ONLY	10	5.3
CATTLE ONLY	3	1.6
CATTLE AND SHEEP	4	2.1
NONE	42	22.1

Overall, 22.1% of respondents kept no livestock. However, the next table shows that there are variations between group leaders, members and non-participants.

TABLE 7.5 STOCK KEPT BY RESPONDENT

	GL	COLUMN % M	NP
CATTLE SHEEP AND GOATS	62.5	54.1	10.8
CATTLE AND GOATS	9.4	9.8	4.8
GOATS AND SHEEP	9.4	11.5	12.3
GOATS ONLY	6.3	9.8	7.7
SHEEP ONLY	3.1	3.3	9.2
CATTLE ONLY	0	3.3	1.5
CATTLE AND SHEEP	34.1	1.6	1.6
NONE	6.3	6.6	52.3

42.1% of respondents keep cattle sheep and goats; 62.5% of group leaders, 54.1% of members and 10.8% of non-participants. 22.1% of all respondents keep no stock; 6.3% of group leaders, 6.6% of members, and 52.3% of non-participants. If the type livestock kept is a valid indicator of economic status these figures would lead to the conclusion that non-participants are considerably poorer than either group leaders or members.

7.1.4 Labour Use

Gender divisions of labour were discussed in Chapter Two, and it was observed that in much of sub-Saharan Africa women are increasingly responsible for most work on farms, in both subsistence and cash crop production. Agricultural labour used by the household is considered an indicator of economic status, particularly when distinction is made between those households who hire labour, and those who hire out their own labour. Use of labour is also of considerable importance in female-headed households, and in influencing participation in groups. Detailed questions were asked about the use of labour on the farm; who is responsible for and participates in the main tasks, whether labour is hired and at which times, and which are the busiest times of the farming year.

Ellis (1988) states that women in poor households often work as casual wage labour on other farms, and this is especially prevalent where social differentiation is taking place. He also states:

"Throughout the developing countries the amount of farm work women do is inversely related to household income levels, so that the poorer the household, the higher the farm work hours of women." (1988:173)

Table 7.6 shows the labour use on respondents' farms, indicating who is responsible for and participates in certain tasks on the farm. "Self" refers to the respondent, "other family" refers to family members excluding husband.

TABLE 7.6 LABOUR USE ON RESPONDENTS' FARMS

	% EACH TASK						
	LANDP	PLANT	WEED	STOCK	HARVEST	PROCESS	MARKET
SELF	37.5	39.5	35.8	31.6	74.7	84.2	26.3
SELF&HUSBAND	28.4	35.3	33.2	12.6	9.5	1.6	12.1
SELF&OTHER FAMILY	5.8	6.3	7.4	8.9	4.2	3.7	1.6
HUSBAND	14.2	2.6	1.6	2.6	0	0	6.8
ALL FAMILY	4.2	4.7	7.4	5.8	2.6	3.2	3.2
HIRED	4.7	3.2	3.2	7.4	0.5	0.5	0
FAMILY&HIRED	3.7	6.3	9.5	4.7	4.7	4.7	2.1
SELF&GROUP	0	1.1	1.1	0	2.6	3.7	0
NA/DK/NS	1.1	1.1	1.1	26.3	1.1	1.1	49.5

With the exception of marketing, over 30% of respondents were solely responsible for all farm tasks. Hired labour is used only in the minority of cases, usually for tending livestock and to supplement family labour during planting and weeding. Children provide important labour on farms, especially during planting, weeding and harvest, for bird scaring and are often seen tending livestock. They are included in the above table under family labour. With increasing numbers of children going to school, their labour contributions may be limited to after school hours, weekends and holidays. Much of the increased work burden may fall to women, or to younger children who are often seen herding stock. Weeding is considered the busiest time of the year on the farm, and is when women have to work hardest; 36.7% of respondents said weeding was the busiest time, 62.5% of group leaders, 39.3% of members, and 7.7% of non-participants. 38.5% of non-participants said they were busy all the year, indicating that these women have greater demands on their time. Crop processing is also very time consuming and is traditionally carried out by women only. One woman, a group member from Nkondi Sublocation, interview no.095, reports having to carry out crop processing at night because she

is too busy picking cotton during the daytime.

A discussion of the concept of gender division of labour was set out in Chapter Two, and in Chapter Four the generalised "traditional" pattern in Kenya was described. It was observed by the researcher that in Tharaka this traditional division of labour is breaking down and that women are increasingly responsible for farm tasks previously thought of as being performed by men, for example land preparation and tending livestock. It would also appear that younger women are particularly burdened with increased work loads. For example, interview no.019 was with a group leader from Tunyai Sublocation. She is aged 51 years old, and is monogamously married. She has three children in primary school and shares the compound with her in-laws. The family might be seen to represent the traditional gender division of labour. The family farm 4.5 acres and grow a range of crops including maize and cotton. They keep six cattle and ten goats, and grow enough food to feed the family, unless the rains fail. Farm tasks are shared by the respondent and her husband, and no labour is hired; both perform land preparation, planting and weeding, and alternate with tending stock. The respondent is responsible for harvesting and processing crops, and her husband markets the cotton. The main source of family income is casual farm labouring by the respondent, and the main expenses are school fees.

A contrasting situation, and one that appears to be prevalent in younger families is illustrated by interviews nos.127 and 129, non-participants from Kamanyaki and Chiakariga respectively. Aged 21 and 27, both women are monogamously married, with husbands not employed, but both are solely responsible for all work on the household plot. A very common division of labour is illustrated by

interview no.092, with a group member from Turima, where the respondent's husband takes responsibility for land preparation, whilst respondent does all other farming tasks.

It might appear from Table 7.6 and from the researcher's observations in the field that the so-called "traditional" gender division of labour assumed by many writers to be the model in much of sub-Saharan Africa, is nowadays more the exception than the rule, at least in Tharaka.

Non-participants are also less likely to use hired labour and other help on their farms. Table 7.7 shows the use of hired labour by group leaders, members and non-participants. Casual labour is most likely to be used for planting and weeding, and regular labour for tending livestock. Most women who hire out their labour do so on a casual basis, often at the time of weeding, and earn (in 1988) 15-20/= per day (approximately 50-75 pence), or accept food in payment.

TABLE 7.7 SOURCE OF LABOUR ON RESPONDENTS' FARMS

	ROW %						
	RESP	FAMILY	FAM&GROUP	FAM&CASUAL	FAM®	HIRES OUT	N/A
GL	12.5	39.1	1.6	12.5	20.3	14.1	0
M	11.5	47.5	3.3	8.2	6.6	23.0	0
NP	32.3	38.5	0	1.5	0	23.1	4.6
POP	18.9	41.6	1.6	7.4	8.9	20.0	1.6

Non-participants are more likely to be solely responsible for labour on the farm; for all respondents, 18.9% are the sole labour source; 12.5% of group leaders, 11.5% of members, but 32.3% of non-participants. 8.9% of respondents employ regular labour; 20.3% of group leaders, 6.6% of members, but no non-participants. 20.0%

of respondents hire out labour; 14.4% of group leaders, 23.0% of participants, and 23.1% of non-participants. Only three respondents reported receiving help from women's groups on their farms.

This demonstrates that non-participants are less likely to employ labour on their farms, but are more likely to hire out their labour; it is therefore concluded that non-participants have lower economic status than group leaders and members.

7.2 Social Status

The indicators chosen to assess the social status of the women interviewed include marital status, household status, and the respondent's status, with particular significance given to female household heads. Also discussed are the respondents' age, birthplace, number of children, and whether her husband was absent from the household.

A woman's marital status is a considerable determinant of her social status in Kenyan society. Women attain status through marriage and through their husband's social position. Patrilocal practices ensure that a woman joins her husband's clan after marriage. Polygamy - or more accurately polygyny - is widely practised in Tharaka, and it has been observed that senior (first) wives appear to enjoy higher status than second and subsequent (usually younger) wives. Traditions concerning marriage and dowry payments were outlined in Chapter Four. The status of widows is unclear. Although widows appear to be well respected within the community (particularly if they are elderly, and the widow of an old mzee), they are often economically and socially disadvantaged and pitied by other women. It seems to depend greatly on their

family status and whether other male family members offer support. Certainly a woman living on her own, without either a husband or adult male relative, is considered socially inferior. Women are thus classified according to their marital status; whether married polygynously or monogamously, widowed, divorced or separated. Respondents' households are classified according to whether they are polygynous or monogamous, headed by a woman, and extended or nuclear. The type of household a woman lives in is likely to influence her social status. Traditionally, the larger a household, the higher the social and economic status of its members (particularly its head) was assumed to be. The extended household, containing relatives other than the children of the head of household and his or her spouse, shows that the family has wealth, and therefore accrues status. However evidence suggests that this view is changing, and that at least amongst younger families, a certain amount of prestige is given to smaller, monogamous families. It appears that this is another sphere where Tharakan society is undergoing rapid change in terms of cultural and social values and norms.

In 1970, Ester Boserup wrote that:

"under conditions of shifting agriculture, polygyny was a means by which a man could enlarge the area of land he cultivated, thus increasing his wealth and social status".

This is the traditional view, which is likely to change, particularly under conditions of land scarcity, which has already been noted as a characteristic of Tharaka. Michael O'Leary's research in Kitui District (1983) would seem to be pertinent to the Tharakan case; separated by the Tana River, Kitui and Tharaka share a similar environment and cultural economy. In Kitui O'Leary observed that population growth and land scarcity are making the

traditional means of gaining wealth and status, that of having many wives and children are no longer desirable:

"Traditionally the large cattle owner increased his household by marrying more than one wife. Such a man stood a good chance of having many children. Sons could herd the livestock and daughters brought in bridewealth livestock. Building a large household was a way of achieving status".

O'Leary observes a move away from polygyny in both his study areas in Kitui, that the large household as an earner of status is giving way to new status symbols such as the number of children educated, improved housing, and ownership of a local store. As O'Leary notes:

"The majority of labour migrants and shopkeepers who have large herds prefer to marry monogamously, and thereby provide their household with appropriate standards in housing, clothing and education" (1983:73).

Brabin (1984) reiterates, pointing out that polygyny is declining in some areas of Kenya in response to economic pressure, especially in areas of land shortage, and that in certain circumstances, polygyny no longer implies increased production, but reduces the amount available to each woman and her children. Safilios-Rothschild and Mburugu (1986) have also shown that the shift in emphasis, so that children are perceived not as benefits (in terms of labour and social status), but as costs (in terms of school fees), is influencing the desired family size. Interestingly, the study shows that women's income generating activities are the most important factor determining this change in values; women's income was the most important factor determining the number of children wanted.

In this study, respondents were classified, using the information on marital status and family composition, and on labour use on their farms and whether or not their husband was absent from the household for long periods of time. The classification highlights

the importance of whether women are heads of household (whether on a de facto or de jure basis), and whether they are sole or joint managers of their farms. This classification is considered the most significant in terms of assessing the social status of the respondents, and also the most relevant in terms of this study.

The definition of female household heads was mentioned Chapter Two. Kathleen Staudt, whose work in Western Kenya (1974,75,78) has been reviewed earlier, classified farms according to their management, using two categories, female manager and joint manager, female heads of households being included in the category of female manager. In the present study, distinction is made between female household heads and female farm managers. The category of female heads of household includes both de facto and de jure heads of household; those women who are widowed, divorced, separated or whose husbands have migrated to other areas on a permanent basis (in this study, husbands who visited less than once a year were considered longterm migrants), assuming those women had not moved into the household of another relative. Female farm managers are those women who take full responsibility for all the work carried out on the farm. Although this definition may be disputed, as a detailed study of decision making on the farm was not undertaken (as prescribed by, for instance Dixon-Mueller 1985), the classification and this category is employed in order to highlight and indicate those women who are most likely to shoulder heaviest burdens of work and responsibility on the farm.

7.2.1 Marital Status

Marital status is a significant determinant of the social status of both men and women in Tharaka. Marital status is obviously related to age and stage in life cycle. Marital status is also a

determinant of household class and respondents' class which are also discussed in this section.

The majority of women interviewed are married, or had been married; 77.4% had a husband living at the time of the interview, and 10% of respondents were widowed. Marital status of the women interviewed is shown in Table 7.8, below.

TABLE 7.8 MARITAL STATUS

	FREQUENCY	%
SINGLE/NEVER MARRIED	13	6.8
WIDOW	19	10.0
SEPARATED	8	4.2
DIVORCED	3	1.6
MONOGAMOUS MARRIED	110	57.9
POLYGAMOUS MARRIED £1	16	8.4
POLYGAMOUS MARRIED £2+	21	11.1

Married women were divided into three different categories: monogamous married, first wife in a polygynous marriage, and second or subsequent wife in a polygynous marriage. Morgan (1984) estimates that an average of 21% of unions in Kenya are polygamous, or more accurately polygynous. However, a higher rate might be expected in Tharaka, and the 19.5% found in the survey may be an underestimate for a number of reasons. Some monogamous marriages may actually be polygynous, but first wives, especially if they are professed Christians, may not recognise subsequent customary marriages. To a certain extent, all monogamous marriages are potentially polygamous. Nothing is known about the type of marriages of women who are divorced or separated. As Monsted and Walji (1978) point out, little data are available to determine the true extent of polygyny in most African states, and Brabin (1984) highlights some of the difficulties associated with determining

marital status using a questionnaire survey. Most authors agree that the practice of polygyny leads to social differentiation, but in different ways in different circumstances.

In most cases in Tharaka polygynous marriages consist of a man with two wives, although three wives is not uncommon, and one woman who is a fifth wife was interviewed (interview no.102, a group member from Kanyuru aged 50 years). Social status of second and subsequent wives appears to be lower than that of the first wife; as a first wife, a woman holds the senior position in the polygynous family, and her children may take precedence over those of subsequent wives. Remembering that land is normally allocated by the senior man in the household, first wives often have larger plots to cultivate, and are advantaged both materially and socially in a number of ways. For example, it is common in Tharaka for senior wives to farm larger plots than other wives. Interview no.001 was with a woman in Kamanyaki Sublocation who is the second wife. Her extended family, consisting of nineteen people, share the same compound. The first wife has a 6 acre shamba, and the second wife has 5 acres.

Competition and disputes would appear to be common among co-wives in Tharaka (this was also observed by Haugerud, 1984, in Embu). Interview no.143 was with a non-participant from Marimanti Sublocation. She is 24 years old, has three young children, and is the second wife. Her husband works in Mombasa, and she shares the compound with the co-wife. The senior wife farms 5 acres, but the respondent reports that her husband will not give her any land to farm. There are bitter disputes between the two women, and the respondent is unable to work and grow food on the senior wife's plot. She is therefore dependent on earning cash from odd jobs and

any remittances from her husband to feed her children.

Table 7.9 shows the marital status of the three different sets of respondents, group leaders, members and non-participants.

TABLE 7.9 RESPONDENTS' MARITAL STATUS

	COLUMN %			
	GL	M	NP	POP
SINGLE/NEVER MARRIED	0	3.3	16.9	6.8
WIDOW	7.8	8.2	13.8	10.0
SEPARATED	3.1	8.2	1.5	4.2
DIVORCED	1.6	3.3	0	1.6
MONOGAMOUS MARRIED	71.9	60.7	41.5	57.9
POLYGAMOUS MARRIED £1	7.8	6.6	10.8	8.4
POLYGAMOUS MARRIED £2+	7.8	9.8	15.4	11.1

Greater numbers of non-participants are widowed or never married; less are monogamously married. Widows, divorced and separated women would appear to be considered socially disadvantaged and economically very vulnerable. Widowed women include many elderly women (female life expectancy being longer than male), but also a number of younger women with small children. Interview no.091 was with a group member from Turima, who is 28 years old with four children and recently widowed. She farms 2.5 acres on her own, and earns income from the sale of cotton and sunflower, and from casual work on farms and making palm baskets. Separated women were often deserted by their husbands a long time ago, for example one woman (interview no.011) had been deserted by her husband at the time of the Mau Mau Emergency (1951-52). One woman from Turima (interview no.088), had been sent back to her parents' home because her husband had not finished paying the brideprice. She is 38 years old and has five children. Local informants say that under customary marriage, a husband can divorce a wife for a

number of reasons, including a failure to bear children, or even a failure to produce sons (the researcher was told the story of a woman whose husband had divorced her because she bore six daughters and no son).

7.2.2 Household Class

Combining information on marital status and on members of the household, respondents' households were classified. The classification follows that used by Sterkenburg et al in their 1986 report on Rural Housing Conditions in Meru District, but includes female-headed households. The following categories are used: female-headed nuclear households (FNHH); female-headed extended household (FEHH); monogamous nuclear household (MNHH); monogamous extended household (MEHH); polygamous nuclear household (PNHH); polygamous extended household (PEHH). Nuclear households consist of the respondent, her husband, co-wife or wives and children if applicable; extended households contain other relatives (for example, parents, cousins, in-laws), or non-relatives as well.

Table 7.10 shows that 20% of respondents live in polygamous households; 21.1% live in female-headed households; and 58.8% live in monogamous households.

TABLE 7.10 RESPONDENTS' HOUSEHOLD CLASS

	GL	COLUMN %		POP
		M	NP	
FNHH	4.7	9.8	7.7	7.4
FEHH	7.8	11.5	21.5	13.7
MNHH	39.1	27.9	13.8	26.8
MEHH	31.3	34.4	30.8	32.1
PNHH	4.7	4.9	6.2	5.3
PEHH	12.5	11.5	20.0	14.7

Sterkenburg et al's findings differ; only 5.7% of households in their study were found to be polygamous, and some 80% were monogamous. However their study was restricted to Tunyai, Nkondi and Chiakariga Sublocations, thus avoiding the low potential areas, and including the settlement schemes where it might be expected to find a high incidence of younger, monogamous nuclear households. Sterkenburg et al explain the low incidence of polygamy by low levels of income which prevent men from marrying more than one wife. However these findings would seem to contradict work done by O'Leary in Kitui (1983), and by the researcher's observations and findings in Tharaka.

Sterkenburg et al recorded 17.7% of households were headed by women and comment:

"In the dryland zones where subsistence agriculture predominates, the proportion of incomplete households is strikingly high; this category mainly comprises widows or women with children left by their husbands, who went away in search of more favourable employment and income conditions outside this vulnerable ecological zone". (1986:62)

7.2.3 Respondent Class

A key indicator of social status is a classification of the respondents which takes account of marital status, household class, whether a husband is present in the household or lives away, and responsibility for farming tasks. This classification categorises respondents as female heads of household (FHH), female farm managers (FFM), joint farm managers (JFM), or living in a female headed household (LFHH). Those respondents who live in households headed by women are often women who have stayed with their widowed mother. For example, interview no.086 is with the youngest woman in the survey. Aged 15 years at the time of the survey, she is a member of a woman's group in Marimanti

Sublocation. She is single and lives with her widowed mother who is disabled. They farm four acres, and the respondent is responsible for most work on the farm. Their only source of income is from the respondent's casual farm labouring. The respondent's three brothers have left the area in search of work. The respondent is single, and does not know what will happen to her mother if she gets married.

TABLE 7.11 RESPONDENTS' CLASS

	COLUMN %			
	GL	M	NP	POP
FHH	14.1	18.0	32.1	18.4
FFM	34.4	18.0	30.8	27.9
JFM	50.0	60.7	36.9	48.9
LFHH	1.6	3.3	7.7	4.2
DK	0	0	1.5	0.5

The table shows that 50.5% of farms are managed by women. Non-participants are more likely to be female heads of household or to be living in households headed by women. They are less likely to be joint managers of their farms. Group leaders are more likely to be farm managers and this reflects the fact that they are more likely to have husbands who are employed away from home (see Table 7.12 below).

TABLE 7.12 RESPONDENTS WHOSE HUSBANDS WORK AWAY FROM HOME

	COLUMN %		
	GL	M	NP
YES-LOCALLY	10.9	6.6	1.5
NO	57.8	63.9	63.1
YES-FARAWAY	18.8	6.6	3.1
N/A	12.5	23.0	32.2

Many of the husbands who work locally (defined as within the District), are school teachers or government employees. These men visit their wife's household at least once a month. Wives of local teachers, particularly headmasters, appear to enjoy high social status. Men who work further away visit their wives at least once a year. Men from Tharaka are more likely to migrate to Mombasa than Nairobi (Tharakan links with Coastal regions were mentioned in Chapter Four and is highlighted by Bernard, 1972), and many of the women interviewed have male relatives living in Mombasa engaged in petty trading and other informal employment. Evidence from case study material suggests that many of the women who have husbands working away from home in the formal sector have more secure economic status. In section 7.1.3 it was noted that 17.3% of group leaders receive remittances from their husbands.

7.3 Other Factors

7.3.1 Place of Birth

29.2% of non-participants were born outside of Meru District. Many of these women have come from the dry areas south of the River Tana in Kitui or Embu Districts. Only 7.8% of group leaders, and 6.6% of members were born outside the District.

29.2% of non-participants were born in the Sublocation where they now reside, compared with 43.8% of group leaders, and 47.5% of members. Overall, 81.6% of respondents were born in Tharaka Division; 85.9% of group leaders, 91.8% of members, and 67.7% of non-participants. Relatively few come from other parts of Meru District; only 3.7% of all respondents, whereas 14.7% come from other Districts.

Place of birth may affect the social status of women. Although the Tharakan people practice exogamy, and so it would be expected to

find women living away from their place of birth, in most cases marriages appear to take place between people from the same, or neighbouring, Sublocation. Women marry into their husband's clan, but a woman from outside the area, particularly from a different tribal group may be disadvantaged, and may be excluded from some of the traditional female based social groups.

There are other movements within the Division. In the far northeastern part of Tharaka, people are being forced to move away from their homes because of the danger of shifta or bandits. Gibbon (1987,88) shows changes in cultivation patterns in the area, indicating recent moves away from these areas, and into the western boundaries of the Division. Migrations from upper zones into these areas has also been noted (Wisner 1973, Campbell 1981), so it appears that pressure is being exerted from two directions; people fleeing shifta from the east, and by people moving from the north and west in search of land (discussed in Chapter Four). One woman, in interview no.121, has had to move five times because of shifta. She now lives in Kanjoro Sublocation. Other families eg: interview no.048, are moving from Kathangachini into the dry, and until recently sparsely populated area of Gatue.

7.3.2 Stage in Life Cycle: Children and Age

There appears to be no significant differences concerning age, number of children or size of household between group leaders, members and non-participants. This contrasts with Feldman's study (1984) which maintains that younger women are excluded from participation in women's groups. If anything, the groups may be seen to discriminate against unmarried women and perhaps widows. The average age of respondents was 34.7 years. Group leaders are

slightly older (37.6 years, compared with 32.8 for members and 33.7 for non-participants). Group leaders have slightly more children; an average of 4.8, compared with 3.9 for members, and 4.3 for non-participants. The mean number of children for all participants was 4.3. The figures reveal that many women in Tharaka bear a large number of children, and that dependency burdens are high. Remembering that the stated number of children will, if anything, be an underestimate, and that these figures represent surviving children only, overall 45.5% of respondents have five or more children, and 29.9% have six or more children. Most women have not reached the end of their reproductive life yet, and local informants estimate that infant mortality is very high in Tharaka, at over 200 per 1000. One woman interviewed, a non-participant aged 38 from Gatunga (interview no.184) has lost all her children as infants.

7.3.3 Area of Land Cultivated

Although Castro et al (1981) indicate that control of land may be the most important single indicator of rural inequality, the area of land cultivated was not considered as one of the indicators of economic status. It is thought that to regard the area of land cultivated by a household as an indicator of its relative wealth in an agro-pastoralist society such as Tharaka would be misleading.

Plot size refers only to the area cultivated this season by the respondent and her household, and does not represent the total area of land owned, or under the control of the household. Households often farm more than one plot, (as noted by Brokensha and Glazier, 1973, in Mbeere, and discussed in Chapter Four)

perhaps in different areas, eg: many respondents in Gatunga Sublocation farmed plots in Irunduni, where land is of higher potential and crops like maize can be grown. Similarly, households in Kathangachini farm additional plots on more fertile ground towards Meru National Park around Kathithini. The area of land cultivated may, however, give an indication of the amount of labour available to the farm household, and so may have a bearing on time and labour constraints. This will then have an effect on economic indicators such as self-sufficiency and use of hired labour.

Another problem arises because of different patterns of land tenure in Tharaka; in much of the area, land is still under the traditional clan system of control, but in other parts, for example, parts of Tunyai, Nkondi, and Marimanti, private ownership has been introduced. It may not be considered appropriate to compared areas of land cultivated under these different tenure systems. Further complications may arise with different sorts of control of grazing areas, and access to communal resources such as trees and water sources.

Table 7.13 shows the area of land cultivated by respondents.

TABLE 7.13 AREA CULTIVATED BY RESPONDENT - ACRES

	GL	COLUMN %		
		M	NP	POP
0	0	0	1.5	0.5
<2.5	14.1	23.0	52.3	30.0
2.5 - <5	31.3	37.7	36.9	35.3
5 - <7.5	29.7	24.6	6.2	20.0
7.5 - <10	9.4	9.8	1.5	6.8
10 - <15	9.4	1.6	0	3.7
>15	4.7	1.6	0	2.1
DK	1.6	1.6	1.5	1.6

53.8% of non-participants cultivate less than 2.5 acres, compared with 23.0% of members, and 14.1% of group leaders. Abella et al found that 20% of farmers cultivated less than 2.5 acres, and Gibbon found 28.1% of farms surveyed in Recommendation Domain 2 were less than 2.47 acres (1 hectare). One participant was landless (interview no.143). Only 3% of non-participants cultivate more than 7.5 acres; although 14.6% of members, and 25% of group leaders do.

Abella et al found that the average cultivated area per household was 5.2 acres, but there was a large range of values. In the present study, the average cultivated area per household is 4.3 acres. This could be an underestimate as details of all other plots were not always known. For group leaders the average plot cultivated per household is 5.9 acres, for members it is 4.4 acres, and 2.6 acres for non-participants. The average plot calculated by the respondents is 4.7 acres for group leaders, 3.6 acres for members, and 2.4 acres for non-participants. When average household plot size is divided by the average number of people per household, on respondents' farms 0.52 acres is cultivated per person. This figure rises to 0.7 acres per person on group leaders' farms, 0.55 acres on members' farms, but is only 0.30 acres on non-participants farms.

7.4 Benefits of Participation

Respondents were asked to say what they thought the main benefits of participating in women's groups were. The responses were grouped into the following categories; income generation, social benefits, home improvement, school fees, contingencies, farm improvement, communal labour, and others.

Many responses were along the lines of "we meet together and help

each other". The women were asked to elaborate and explain in which ways they were able to help each other. The ability to collect save and distribute money was emphasised. The categories indicate how collected money is used; for home improvement, which includes buying utensils, furniture and corrugated iron roofs (in wealthier groups); for farm improvement, which in most cases means buying goats for members, and sometimes tools; in paying school fees, or for contingencies such as medical expenses.

The social benefits category also needs clarification. The response often generated was, "we visit each other". From further investigation and the researcher's observation it appears that visiting often includes some sort of monetary contribution, often in the form of a "merry-go-round", so that the woman visited receives contributions from other members. Table 7.14 shows the benefits of participating in women's groups identified by the respondents. Percentages add up to more than one hundred as most respondents identified more than one benefit.

TABLE 7.14 BENEFITS OF PARTICIPATING IN WOMEN'S GROUPS

	% RESPONDENTS
INCOME GENERATION	50.3
SOCIAL	50.3
HOME IMPROVEMENT	33.3
SCHOOL FEES	26.5
CONTINGENCY	25.4
FARM IMPROVEMENT	23.3
COMMUNAL LABOUR	13.8
OTHERS	6.3

Over 50% of respondents identified income generation and social benefits, and another third cited home improvement as a benefit.

7.5 Constraints to Participation

Non-participants were asked if they had ever been in a women's group, where and when and why they left, and then why they were not in a group at the present time. Only one woman (interview no.143) had been in a group previously, and that was in Kitui District. She had left the group when she moved to Tharaka upon her marriage.

The overwhelming majority of non-participants, some 92.3% said that they did not have enough time to participate in women's groups. Most said that they were too busy working on their shambas, or working for money or food, or selling in the market. Another two respondents said that they did not participate in groups because of lack of time and money. One woman, interview no.180, cited sickness. The family is landless, and relies on the mission at Gatunga for food and money. One woman (interview no.143) from Marimanti said that she was a member of the local church group, which had women and men members and ran a revolving savings fund, and that the church leader did not allow members of the group to be active in other organisations (this has also been noted by Eyben, 1983 in Siaya District).

7.6 Summary

The preceding analysis has illustrated that non-participants are characterised by having greater labour demands and more severe time constraints than either group leaders and participants. Non-participants are more likely to be female heads of household, and sole income earners in their households and families. They are less likely to keep mixed herds of cattle, sheep and goats, and the vast majority are unable to meet their households' needs from subsistence production. Group leaders, on the other hand, have

more varied sources of income, and are more likely to be members of households where at least one person is employed in the formal sector and making contributions to household expenses. Group leaders may be formally employed themselves. Group leaders are more likely to hire labour on their farms than to hire out their own labour.

The analysis reveals that, for all the indicators used, non-participants have lower economic and social status than either group leaders or participants. However, the figures fail to illustrate the abject poverty in which some of the women interviewed exist. Many, particularly non-participants appear to be locked in what Chambers (1983) has called the "deprivation trap", where poverty, isolation, powerlessness, vulnerability and physical weakness ensure that such households are drawn into a vicious circle of poverty. The analysis shows that these women are excluded from participation in women's groups, which may be one small way of helping them breakout of the deprivation trap.

At the same time perhaps a new class of households is emerging in Tharaka; those that have access to formal sector employment, and that have moved away from the subsistence base. These families tend to be monogamous and nuclear, and to a certain extent, more mobile (see also MacKenzie and Taylor, 1987). As land privatisation becomes more widespread, a greater stratification within Tharaka might be expected to occur, which will have implications for the nature and functions of women's farming groups.

How do these groups benefit women farmers in terms of agricultural development? Are they able to facilitate the dissemination of innovations? Chapter Eight continues to explore characteristics of women farmers in Tharaka, and compares group leaders, participants and non-participants in terms of their adoption of innovations on their farms and their access to agricultural development resources.

CHAPTER EIGHT

INNOVATION BY WOMEN FARMERS IN THARAKA

As the findings in Chapter Seven have shown, participants in women's farming groups have a higher social and economic status than non-participants. Thus a strategy concentrating on women's groups excludes poorer women farmers from extension efforts. Kenya's agricultural extension policy, particularly how it relates to women farmers and the reasons for targeting women's groups has been reviewed in earlier chapters. However, the question of how extension efforts can be made more appropriate and more accessible to women farmers, and especially to those of lower economic and social status living in marginal environments remains.

Hypothesis Two states that the adoption of agricultural innovations is facilitated through women's farming groups. This is tested first by comparing the adoption of innovations by group leaders, members, and non-participants on their own farms, and secondly by comparing the number of visits by agricultural extension personnel received by group leaders, members and non-participants. It is expected that group leaders and members are more likely to adopt innovations, and will receive more extension advice than non-participants. It is also suggested that dissemination of information about agricultural innovations takes place through women's farming groups and that as such, women's groups participants will also be better informed about innovations. If Hypothesis two is proved, then this presents important implications concerning the adoption of an extension strategy which targets women farmers through women's groups.

Survey findings concerning the adoption of innovations are presented in the following sections, and additional factors

including cash cropping and soil conservation are discussed. Extension visits received by group leaders, members and non-participants, and the types of assistance identified by women as being most useful are discussed in sections 8.2 and 8.3.

8.1 Innovation by Women Farmers

The innovations examined by the survey include the use of improved seed, the application of fertilisers, pesticides and manure, and tree planting. Also discussed are cash cropping, soil conservation and erosion control techniques.

8.1.1 Use of Improved Seed

Improved seeds are defined not only as new, high yielding varieties, but also as purchased, treated seeds. Most farmers in Tharaka use their own seeds, selected from the previous harvest. The types of improved seeds appropriate to conditions in Tharaka, and which were used by farmers interviewed in the survey include Katumani maize, drought resistant varieties of bulrush millet, dwarf sorghum, improved multi-headed sunflower and fungicide treated cow pea. Katumani maize is most popular, as less drought resistant maize varieties have a 65% probability of crop failure (Abella et al 1984). The discussion at the end of this section (8.1.7) includes a more detailed examination of issues concerning the adoption of Katumani maize.

The survey found that 24.9% of all respondents use improved seed. Participants in women's groups are at least three times more likely to use improved seed; 31.2% of group leaders report using improved seed, and 32.8% of members, compared with only 10.9% of non-participants. There is an emphasis on food crops, including maize, with 19.6% of all respondents using improved seeds for food

crops. 25.0% of group leaders use improved seed for food crops only, as do 27.9% of members but as few as 6.3% of non-participants. The findings are discussed in section 8.1.7.

8.1.2 Use of Purchased Fertilisers

The use of purchased fertilisers is a relatively new phenomenon in Tharaka compared to higher potential areas in Meru District (Sterkenburg et al 1986). Application of fertilisers may be associated with a change in cultivation practices including an intensification of land use, shorter fallow period, introduction of cash cropping, and single stand and mechanised cultivation. A decrease in the fallow period practiced in many parts of the Division due to land shortages has been observed. Abella et al (1984) report that 21% of farmers have a fallow period of less than two years, and this leads to a decline in soil fertility. The use of purchased fertilisers may be necessary to maintain yields, and further application is recommended by the Agricultural Extension Services for crops such as Katumani maize. However, traditional practices such as intercropping may be more beneficial in terms of soil fertility and, in some cases, yield, than the "improved" practice of pure stand cropping. Richards (1985) describes a range of advantages that farmers see in intercropping which include better and more reliable yields, smoother labour input profile, better control of pest, weeds and diseases, and in supplying a diversity of subsistence materials.

The survey found that only 6.9% of respondents apply purchased fertilisers. 6.3% of group leaders use fertilisers, compared with 13.1% of members and only 1.6% of non-participants. All of these women, except for two members who apply fertilisers to both food and cash crops, apply fertilisers to food crops only. Fertiliser

appears to be most often to improved crops such as Katumani maize, or to staple crops such as millet or sorghum.

8.1.3 Use of Pesticides

As with fertiliser, the use of pesticides is relatively recent in Tharaka and is associated with other changes in farming practices, particularly with growing cotton, with the adoption of new maize varieties, decreases in fallow period, and introduction of single stand crops.

40.7% of all respondents apply pesticides to crops; 54.7% of group leaders, 60.7% of members and only 7.8% of non-participants. 15.9% of all respondents apply pesticides to cash crops only, and 10.6% to food and cash crops. As application of pesticides appears to be linked to growing cotton (five applications of pesticide are recommended by the Ministry of Agriculture), it is probable that respondents growing cotton and applying pesticide to cotton may apply surplus chemicals to food crops. Many respondents complained that cotton is particularly susceptible to pests, and that harvests had failed because pesticide was not available, or sprayers unaffordable or broken. For example, in interview no.018 the respondent reports stopping growing cotton because she could not buy pesticide and her crop failed, and in interview no.025 a group leader reports that her crop failed because she did not have a spray pump.

8.1.4 Application of Manure

29.1% of respondents apply manure: 37.5% of group leaders, 49.2% of members, and 1.6% of non-participants. None of those who applied manure applied it to cash crops only; 21.9% of group leaders applied manure to all crops, as did 36.1% of members.

14.1% of group leaders, 11.5% of members and 1.6% of non-participants applied manure to food crops only.

The limiting factors affecting the use of manure would appear to be the availability, ie: ownership of livestock and husbandry, and labour. Competing uses for dung, for example, as fuel and in building appear to be of little importance in the area.

Abella et al (1984) found that 25% of farmers in their survey applied manure. Of the 75% who did not, they found that 26% did not because of labour constraints, 15% because they had insufficient manure, and a further 15% said that they did not know how to apply it. Abella et al found that 54% of the farmers applying manure had had contact with extension staff.

Many women in the present survey were well informed about the benefits of manure, but as with other innovations, labour constraints appear to limit application. It is unclear whether the practice is new, disseminated through the extension service, as Abella et al imply. One respondent, interview no.029 from Gatunga, explained that it was not usual for Tharakan farmers to apply manure in the first year of cultivation. In subsequent years, manure would be applied to crops. With the intensification of land use and consequent decreased fallow periods, the practice should therefore be increasing.

8.1.5 Tree Planting

Respondents were asked if they, or any members of their households, had planted any trees on their farms, what kind of trees they had planted and when they were planted. Discussions were held wherever possible concerning the reasons for planting trees, which species were preferred and why, and what benefits were associated with trees.

Table 8.1 shows the type of trees planted by the respondents.

TABLE 8.1 TREES PLANTED

	GL	COLUMN %		POP
		M	NP	
NONE	40.6	55.7	84.4	60.3
MANGO	9.4	4.9	14.1	9.5
FRUIT TREES	15.6	6.6	0	7.4
CASSIA	18.8	14.8	1.6	11.6
NON-FRUIT TREES	3.1	0	0	1.1
FRUIT AND NON-FRUIT TREES	12.5	18.0	0	10.1

39.7% of all respondents had planted some sort of trees; 59.4% of group leaders, 64.3% of members, and 15.6% of non-participants. 27% of respondents had planted some kind of fruit trees, often mango. 14.1% of non-participants (90% of those non-participants planting trees) have planted mango trees. Members of groups appear to plant a mixture of fruit and non-fruit trees, and group leaders appear to prefer Cassia, with 18.8% of group leaders planting them.

Gibbon (1988) found that 50% of farmers in Domain 2 had planted trees, and when questioned about their reasons, 28% said that they had planted them for fruit. The results presented in Table 8.1 above would indicate that poorer households (non-participants) prefer to plant mango trees. These are well known to women and thus present low risk, and produce a food crop that can be eaten or else sold locally. Shade was also mentioned by some, for example in interview no.093 in Nkondi, as a reason for planting trees, particularly around the homestead.

Provision of fuelwood did not appear to be as big an incentive to tree planting as was expected. In certain areas, for example Irunduni, people have to collect wood from their own land (as

explained by a group leader in interview no.057; other respondents from Irunduni, in interviews nos. 117 and 056, report spending three hours and five hours collecting wood). Other problem areas appear to be settlement schemes in Tunyai and Nkondi. In most other parts of Tharaka dead wood is collected from communal land. However this situation will deteriorate in the near future; overgrazing and increased cultivation are leading to deforestation, and changes in land tenure will inevitably mean that woodfuel will become a more scarce resource within the near future. At the moment a minority of women in isolated areas complain of the scarcity of wood, although many spend a large amount of time collecting wood. At present therefore, it is only in isolated areas that shortage of woodfuel is seen as a priority and will be the main incentive for people to plant trees. Wood collection is women's responsibility, sometimes with the help of children. The survey found that 77.3% of respondents report spending an hour or less per day collecting wood. 9.4% of the women, however, report spending more than two hours a day collecting wood.

Both Gibbon (1988) and Abella et al (1984) cite honey as an incentive for people planting trees: Gibbon found 11% respondents gave beehives as a reason for planting trees. However, it appears from informants' information and the researcher's observations, that honey production is exclusively carried out by men in Tharaka, who brew a strong honey beer. The Farmers Training Centre at Marimanti has a honey refinery but complains of lack of honey. Other productive trees are also grown in certain parts of Tharaka. Around Tunyai, avocado and citrus are grown successfully, and at Ruungu in Turima cashewnut has been introduced. Whilst avocado

and citrus may be sold in local markets, cashewnut is marketed outside the District. Advocados are often available at Marimanti Market, although the researcher's interpreter had never eaten one, had never seen a cashewnut and refused to try one, warning that they were "poisonous", although they were grown only 15km away. Hunt (1984) points out that trees such as mango and cashewnut can provide an important source of vitamins, as well as cash income for families living in semi-arid regions. The trees can be interplanted with other crops, and once established require little maintenance. The farmer must meet the cost of the seedling and they require regular watering for some months until established. In areas where there is a risk of drought, there is also a risk of seedling failure. First harvests come after three years for cashewnuts, and five years for mango. For mango, with annual yields of 90-185kg of fruit, a single compound shade tree can improve household nutrition in areas where vitamin sources are scarce for much of the year. Chambers and Longhurst (1986) show how trees may be particularly valuable to resource-poor farmers, and highlight their role in helping these households overcome seasonal contingencies.

8.1.6 Other Factors

Two other practices are also considered as agricultural innovations in Tharaka and are discussed as such in this section; cash cropping and soil conservation.

i. Cash Cropping

Cash cropping can in many ways be considered an innovation in Tharaka as it is a relatively recent phenomenon: Gibbon (1988) reports that 81.8% of the farmers growing cash crops in Domain 2 in 1985 had been doing so for less than four years. Cash cropping represents a break away from the traditional subsistence based farming system, and the introduction of industrial crops which are not cash/food crops (ie: those that can be either consumed by the farming household or sold or exchanged) presents a change in emphasis for the smallholder reflecting the commoditisation of the local economy and increased need for cash.

The only industrial crops found widespread in Tharaka are cotton and sunflower. Cotton is the major cash crop recommended for the semi-arid areas of Kenya and is marketed through the Cotton Board. In Tharaka, cotton is normally planted in October and harvested through two seasons. Sunflower is grown during both seasons. As yet, few other cash crops appear to be viable for cultivation in Tharaka. Cotton remains the most popular cash crop in Tharaka, although sunflower is gaining in popularity.

Abella et al (1984) found that 50% of farmers in Tharaka grew some cash crop, although cash crops covered only 15% of the cultivated area, and the present survey findings would appear to confirm this figure.

This survey found that 47.9% of respondents grew some kind of industrial cash crop; 36% grew cotton and 29.1% grew sunflower (Abella et al found 40% grew cotton and 23% sunflower, Gibbon found only 26.8% growing cotton). Table 8.2 shows the percentage of respondents growing cash crops.

TABLE 8.2 CASH CROPS GROWN

	% RESPONDENTS
COTTON AND SUNFLOWER	17.4
COTTON ONLY	18.4
SUNFLOWER ONLY	11.6
NONE	52.1
N/A	0.5

37.4% of respondents said that cash crops were a main source of income for their households, which indicates that cash cropping is of significant importance to the local economy and in supporting livelihoods.

These industrial crops are subject to a certain amount of risk (part of the area is defined as marginal cotton and livestock zone). The researcher was told of frequent crop failures; in sunflower due to lack of improved seeds (improved varieties of multi-headed sunflower are disease and drought resistant), and in cotton due to lack of pesticide and spraying equipment. Many women complained that they were only able to produce second grade cotton which fetches a considerably lower price than first grade. Abella et al cite a 50% probability of crop failure for both cotton and sunflower at Marimanti in the middle of the region (AEZ V).

Differences occur in the incidences of growing cash crops between group leaders, members and non-participants. Table 8.3 shows the cash crops grown by the different sets of respondents.

TABLE 8.3 CASH CROPS GROWN BY RESPONDENTS

	GL	COLUMN %		POP
		M	NP	
COTTON AND SUNFLOWER	25.0	23.0	4.6	17.4
COTTON ONLY	32.8	16.4	6.2	18.4
SUNFLOWER ONLY	4.7	14.8	15.4	11.6
NONE	37.5	45.9	72.3	52.1

The table shows that 47.9% of all respondents grow cotton and/or sunflower; 62.5% of group leaders, 54.1% of members and 27.7% of non-participants. Group leaders appear more likely to grow cash crops. This is true for cotton, and for sunflower and cotton. However, the reverse is true for sunflower only, where 15.4% of non-participants grow it, compared with 14.8% of members and 4.7% of group leaders. A likely explanation may be that sunflower is less labour intensive and has lower input costs. Cotton may be unattractive to poorer households as it is exposed to two types of production risks in terms of rainfall variation and price variation, it is labour intensive and occupies land for twice as long as seasonal crops. Given the choice between the two crops, it appears that non-participants opt for lower risk, lower cost and less labour intensive option, sunflower.

Hunt (1984) found that in Mbeere cotton was only grown on a recurrent basis by a limited number of farmers whose mean wealth was substantially above the Divisional average. Hunt found that most farmers were reluctant to adopt cotton, and she questions the benefits it brings to smallholders considering its high cost/high risk nature. However, it would seem that so few alternative cash crops are available in Tharaka, that wealthier farmers are at least willing to take the risks associated with growing cotton.

Green gram were often considered as a cash crop by respondents. 74.1% of respondents in the survey grew green gram, although it is not clear how much of the crop is sold. The crop is also popular on women's group plots. Abella et al (1984) observe that a large proportion of the green gram crop is sold and presumes that this is due to storage difficulties associated with the crop.

ii. Soil Conservation and Erosion Control

Although soil conservation and erosion control techniques were not considered as innovations by the survey, it was a subject which was discussed with the women interviewed whenever the opportunity arose.

Both Gibbon (1988) and Abella et al (1984) examine the erosion control and soil protection methods used by farmers. Traditional methods of soil conservation include the use of trashlines which may be made up of crop residues, stones or tree branches or a combination. More recently methods introduced via the extension service include terraces, mulching, and ditches or trenches. The Soil and Water Conservation component of the EMI Development Programme (see Chapter Four) aims to develop and disseminate soil conserving and water harvesting techniques appropriate to arid and semi-arid areas and is active in Tharaka.

Gibbon found that 90.2% of farmers interviewed in the area defined as Recommendation Domain Two, which includes much of Tharaka, used trashlines, and 19.5% used mulching. Only 3.7% used terraces. Abella et al found that 55% used trashlines, 24% barriers of wood and/or stones (probably included in Gibbon's definition of trashlines). 13% of farmers used ridging.

A number of factors will affect the adoption of these soil conservation techniques; the availability of crop residues and

other materials for trashlines or mulches; the availability of tools; the length of fallow period. However, the most important factor is undoubtedly the high labour requirement of most of these techniques. All of the women spoken to were well aware of the techniques available to them, but all expressed the opinion that they did not have time to adopt such innovations and requested help in terms of labour and tools. For example, the respondent in interview no.086 from Marimanti, the youngest woman interviewed at 15 years old, lives with her disabled mother and was visited by extension personnel from the EMI Soil and Water Conservation Programme in 1987. Although they would like to dig terraces on their land, it would be too hard for the two of them to complete. In interview no.085, a respondent, also from Marimanti SubLocation said that her biggest problem was soil erosion and gullies caused by the rains which wash away newly planted seeds. Although never visited by an extension agent, the woman explained that terraces would stop the erosion, but she had neither the tools nor the time to dig them. She farms one acre on her own as her husband lives in Nakuru and her children are all at primary school.

Many of the women interviewed showed detailed knowledge of methods of soil conservation and erosion control, and expressed a need for assistance in terms of labour in order to adopt them on their farms (see section 8.3).

8.1.7 Adoption of Innovations: Implications of Findings

The analysis in the previous sections has presented findings concerning the adoption of a number of inputs which have been defined as innovations. However, it is difficult to examine these inputs separately, and may be more meaningful to discuss the implications of their adoption in terms of their likely impact on

the local farming system and on why they might be adopted at different rates by the different respondents in the survey.

The points discussed are the impact of innovations on the traditional farming system, the implications of these changes for women farmers and some explanation of why non-participants appear to be less likely to adopt these innovations than either group leaders or members. This discussion then leads into the next section in this chapter, concerning the delivery of extension services to women farmers, and whether women's groups are innovative.

Chapter Four described the farming system in Tharaka, and Chapter Two some of the characteristics of the peasant smallholder economy. Observations from findings presented in this and the previous analysis chapters confirm that the prime objective of women farmers in Tharaka is to achieve, as nearly as possible, and in the face of a hostile environment, self-sufficiency in basic foodstuffs. In good seasons, any surplus food is sold, while in bad seasons, all households are in food deficit. The farming system is thus characterised as having low input, low cost and low risk, primarily targeted to the production of subsistence food staples. In the analysis of innovation by respondents a bias towards food crops was observed; fertilisers, pesticides and manure were found to be more likely to be applied to food crops, and there is a preference for planting trees which produce edible fruits.

A discussion of the use of improved seed, fertilisers and pesticides is not included with the presentation of the survey findings as it seems more appropriate to discuss these inputs together: they are often presented as an improved "package" of

inputs. A preference for growing maize has been noted in the preceding analysis and the significance of improved varieties, particularly drought resistant Katumani maize was highlighted. Abella et al noted that 41% of farmers in their survey of Tharaka grew maize, but that the crop only accounts for 9% of the cultivated area. Maize is a high risk crop, with a 65% probability of failure, but it is a highly desirable food staple which most households buy (most of the 75.8% of respondents who buy food in this survey buy maize, and Abella et al found 70% of farmers buy maize).

Katumani maize is the generic term for a series of synthetic maize varieties bred at the Katumani research station in Eastern Kenya over the last 25 years. Katumani is a fast maturing, "drought-evading" maize, which ripens in 90 days instead of the 110-120 days taken by traditional varieties. The synthetic nature of Katumani maize means that, in good conditions with low rates of cross-pollination with other varieties, the maize can retain its special characteristics for up to four seasons, so saving the cost of new seed.

For Katumani to fulfil its potential a number of changes in cultivation practices, and the application of inputs is necessary. The methods recommended to farmers in semi-arid areas for the production of Katumani maize are as follows:

- i) Buy approved seed at least once every four seasons;
- ii) Plant dry, before the rains start;
- iii) Pure stand rotation, beans/maize;
- iv) Spacing 90 X 30cm;
- v) Fertiliser applied at rate 100kg/ha Aluminium Sulphate Nitrate;
- vi) Weeding continue throughout growing period;

vii) Pesticide applied at rate 5.8kg/ha DDT dust.

From the evidence available there is no reason to doubt the yield superiority of the latest varieties of Katumani over traditional varieties when grown under a range of poor rainfall conditions if the recommended cultivation practices, particularly dry planting are followed. However these recommended practices represent considerable changes which involve increased labour, increased cost and increased risk. Hunt (1984) found that only the richest farmers in Mbeere were able to adopt Katumani maize.

Gibbon's observation that over 80% of farmers growing cash crops had started doing so within the last four years indicates that cash cropping is a relatively new innovation. This survey found that group leaders were more likely to grow cotton, and that non-participants seem to prefer sunflower as a cash crop, and it was suggested that this was because sunflower is less labour intensive, and has lower input costs. The Ministry of Agriculture's recommended practices for cotton again involve the application of purchased seed and insecticide, that the crop be grown in pure stand with a spacing of 90 X 30cm, and be clean weeded.

Cultivation practices such as growing in pure stands and with even spacing and dry planting are new in Tharaka. Traditional methods, for example intercropping, may not only be less labour intensive and lower risk, but may also prove to have beneficial effects on soil structure and fertility and on crop yields.

The above examination has highlighted the many constraints which prevent innovation by women farmers, particularly the poor: labour constraints, for example, in soil conservation techniques; the cost of fertilisers, pesticides and improved seeds; and risk.

In the concluding section of this chapter further discussion of the types of innovations that are appropriate for women farmers and that are attractive to poorer women, of the constraints to their dissemination and adoption, and of the most effective form of extension will be presented.

8.2 Extension Visits to Women Farmers in Tharaka

Reviews of work by Kathleen Staudt (1975,78), and by Uma Lele (1975) has shown that women farmers receive less extension visits and have more restricted access to agricultural development resources than male farmers. Other researchers have suggested that agricultural extension services favour better off farmers and that the poor are denied access to agricultural development resources (see Leonard 1977, Ashcroft et al 1973, and Hunt 1984). It is expected that these factors will particularly affect non-participants in women's groups, who will be doubly disadvantaged; because they are women (and Chapter Seven shows they were more likely to be female heads of households, or female farm managers), and because they are poor (Chapter Seven indicates that they have lower economic and social status than either group leaders or members). In addition, there is evidence from other studies that the dissemination of innovations takes place through women's groups (Muzaale and Leonard 1985, Moock 1976, Staudt 1976), so non-participants may be further disadvantaged in terms of the acquisition of knowledge concerning agricultural innovations. The preceding section shows that non-participants are less likely to adopt innovations than are group leaders or participants, and discussed some possible explanations including the high cost, high risk and labour intensive nature of the innovations. Could it also be that non-participants are also less well informed about certain

innovations, for example, soil conservation practices?

This section presents findings concerning the extension visits received by the women farmers interviewed in Tharaka. Respondents were asked if they had ever been visited by an Agricultural Extension Officer on their farms, and if so, when the visit or visits took place, and what the subject of the visit(s) was. No distinction was made between Government and non-government services.

14.2% of all respondents have been visited by agricultural extension personnel: 17.2% of group leaders have been visited, 21.3% of members, and only 4.6% of non-participants. 8.4% of all respondents (59% of those who have received a visit) have been visited in the last year. Some 70% of those who have been visited have only received one visit; 22% of those who have been visited, representing only 3.2% of all respondents, report having received more than one visit. One woman, a group secretary from Chiakariga (interview 012) says that her farm is visited monthly by the extension officer from Tunyai. The most recent subject was crop rotation.

Once again non-participants appear to be disadvantaged, in this case in terms of access to extension and advisory services.

8.3 Needs Expressed by Respondents

All respondents were asked about what kind of assistance they thought would be most appropriate, and which they thought was most needed on their farms. The initial question asked to all respondents was phrased: "What type of assistance do you think would be most useful to you on your farm". There was normally the opportunity to discuss comments fully with the respondents. Table 8.4 shows the responses to this question.

TABLE 8.4 RESPONDENTS' EXPRESSED NEEDS

	COLUMN %			
	GL	M	NP	POP
IMPROVED SEED	20.3	26.2	30.8	25.8
TREES	6.2	4.9	6.2	5.8
TOOLS/LAND PREPARATION	25.0	14.8	15.4	18.4
TERRACING/SOIL CON.	9.4	14.8	0	7.9
FERTILISERS/PESTICIDES	12.5	16.9	0	9.5
EXTENSION/ADVICE	1.6	0	0	0.5
WATER/IRRIGATION	7.8	8.2	4.6	6.8
LOANS/GRANTS FOR:				
LABOUR	12.5	4.9	0	5.8
LAND	6.2	6.6	13.8	8.9
HOUSE	1.6	3.3	0	1.6
SCHOOL FEES	4.7	4.9	32.3	14.2
BUSINESS	0	0	13.8	4.7
OTHER	6.2	9.8	7.7	7.9
OTHER	6.2	9.8	7.7	8.9

Columns add up to more than 100% because most respondents gave more than one response.

Improved seeds were the most popular request, with 25.8% of all respondents saying that improved seeds would be the most useful form of assistance on their farms. 20.3% of group leaders, 26.2% of members, and 30.8% of non-participants wanted improved seeds. In Section 8.1.1 the use of improved seeds was discussed and it was found that 24.9% of respondents used improved seeds (31.2% of group leaders, 32.8% of members, and 10.9% of non-participants). It appears that whilst there is a high level of awareness of the benefits of improved seeds, access remains a constraint for poorer women (non-participants). The two sets of figures show that whilst group leaders and members do adopt improved seeds, there is a large demand among non-participants who are unable to adopt this innovation that they want. Maize seeds were a very popular request, with Katumani seeds often named (for example in interview

no.072 by a group member in Chiakariga). Improved sunflower seeds were requested as it was explained that local seeds didn't do well (interview no.125, Kanjoro), and some women said that improved seeds were not available locally.

Requests for tools and help with land preparation were made by 18.4% of respondents; 25.0% of group leaders, 14.8% of members, and 15.4% of non-participants. Most of these requests (78%) were for ox ploughs, others were for jembes (14%), and tractors (8%). Many women said that if they adopted mechanical means of land preparation, they could cultivate more land. Gibbon (1988) found that 42.7% of farmers in Domain Two used oxen, and Abella et al (1984) record that 50% of farmers had used an ox plough for land preparation at least once, but only 36% used one each season. 92% of those who used an ox plough used it for land preparation, 17% for land preparation and weeding, 8% for weeding only. 77% of those who used an ox plough hired them, at a rate of about 150/= an acre in 1984.

Ox ploughing means that a farm moves into a different system of cultivation involving planting in rows, and preparation of land after the rains have started. Skills and trained oxen are required, and land must be suitable, without steep slopes, rocks or tree stumps. Group ownership of oxen and plough would appear to be a suitable project for a women's group, although few groups have had success with such ventures. Group no.14 in Tunyai own two pairs of oxen and a plough which is hired out. Group no.58 in Irunduni bought an ox and a plough, but the ox died. However sound a business proposition it may appear, as well as a labour saving innovation, oxen and plough represent a large, lumpy investment which is beyond reach of all but the richest groups in the high

potential areas; oxen have to be cared for throughout the year, and little expertise on farm equipment is available locally. Many respondents asked for loans or grants - money. 14.2% said that they need money to pay school fees for their children: 4.7% of group leaders, 4.9% of members, and 32.3% of non-participants need money for this purpose. Non-participants have greater difficulty in affording school fees. There may be two reasons for this: firstly, they have lower economic status than either group leaders or members; secondly, because of the significant role women's groups play in supporting their members in generating money for school fees, offering emergency payments and loans. Help with school fees is one of the major benefits of participation in women's groups identified by the respondents (see Chapter Seven). The questionnaire also asked respondents whether they ever had to borrow money, and if so, from whom, when, and for what purpose. The results indicate that 11.6% of respondents have borrowed money; 17.2% of group leaders, 15.0% of members, and 3.1% of non-participants. Most women receive credit from informal sources; family, friends and local moneylenders. One woman, a group leader from Irunduni (interview no.057), had received a bank loan to buy land. The woman is employed as a teacher and her husband is the local chief. Two group members had received loans from their groups. Of those who borrowed money, 50.0% used it to pay school fees, 27.5% for medical costs and other emergencies, and 9.1% to buy food. Most loans appear to be for relatively small amounts, over a short period of time. It seems probable that non-participants have limited access to even informal sources of credit, as a result of their low economic and social status, even though their perceived need for credit, particularly to pay school

fees, to buy land, and to invest in businesses, is high. It may also be that women's groups have some role in guaranteeing loans, or that the social networks built up through groups make loan acquisition easier.

Only one woman, a group leader from Tunyai (interview 014) felt that more extension was needed. She would like to be taught about pests and diseases of crops, and instructed in appropriate treatments. This woman works as a nurse in Tunyai Dispensary, is active in the community; she stressed the educational opportunities which exist in women's groups.

8.4 Summary

The analysis demonstrates that non-participants, who have been shown to have lower economic and social status than either group leaders or members, are also less likely to adopt the agricultural innovations examined on their farms. They are less likely to use improved seed, purchased fertilisers or pesticides, manure, or to plant trees on their plots. They are less likely to cultivate cotton, and cotton and sunflower, although more of them cultivate sunflower as a cash crop. It is proposed that this is because sunflower is a less labour demanding crop; Chapter Seven showed that, on average non-participants cultivate smaller plots and suffer serious constraints in terms of time and available labour. Non-participants are also disadvantaged in terms of agricultural advisory services; they receive fewer visits by extension staff on their farms, and in addition do not benefit from any extension contact through women's farming groups. Non-participants show a greater need for credit; to buy land, pay for school fees and improved seeds, and finance businesses, though they do not ask for assistance in terms of extension and advice, fertilisers and

pesticides, or help with soil conservation techniques such as terracing. This may indicate that non-participants are less well informed about these innovations, or that these innovations are way beyond the reach of poorer women.

The main conclusion is non-participants, generally being of lower economic and social status, are less innovative than group leaders and participants. The discussion of innovations has shown that the those innovations included in the study may represent an improved package of inputs which may involve added expense, increase risk, and considerable changes in the method of cultivation which in turn might require greater labour inputs. It is postulated that non-participants do not adopt such innovations for a number of reasons. First, because they have less access to development resources such as extension services. A number of studies have shown that resource-poor farmers, and women farmers are precluded denied access to such services (as shown by Lele 1975, Staudt 1978, Moock 1976). Secondly, because they are poor and are less likely to spend money buying inputs and are unable and unwilling to take risks (eg: Hunt 1984). Thirdly, they are excluded from women's groups and are thus not able to benefit from the services supplied to groups, or from the informal exchange of information and dissemination of innovations which takes place through such groups (see Muzaale and Leonard 1984, Staudt 1978).

Some of these constraints to the adoption of innovations are linked to the nature of the innovations examined, and the ways in which they are disseminated, for example the delivery of inputs and services associated with improved maize varieties, and with cotton and sunflower. These innovations are not necessarily most appropriate for resource-poor farmers subject to the particular

constraints identified amongst poorer women farmers in Tharaka. The next chapter, Chapter Nine, concentrates on the analysis of the distribution of services and inputs between groups, and presents findings concerning women's access to development resources via farming groups; the types of assistance available to groups, its distribution, and whether it is appropriate and able to enhance the effectiveness of group efforts to improve members' standards of living.

CHAPTER NINE

WOMEN'S GROUPS IN THARAKA: ACCESS TO DEVELOPMENT RESOURCES

Which women's groups receive assistance, and what form does it take? What do groups identify as being needed? This chapter presents findings concerned with testing Hypothesis Three: that assistance to women's groups in Tharaka is determined by a number of characteristics of the groups. The hypothesis states that women's groups with the following characteristics will receive more assistance: those situated in areas of higher agro-ecological potential; those situated in more physically accessible areas; those registered with the Department of Social Services; those involved in income generating activities.

Data were collected during discussions and interviews with women's group leaders and participants. Questionnaires were completed and in addition full case histories of group activities and all contact with government and non-government agencies and assistance received were recorded. Case histories can be found in Appendix 1. Interviews with representatives of all government and non-government agencies working with women's groups in Tharaka were also undertaken.

As already described, a number of Government and non-government agencies are working with women's groups in Tharaka in a variety of different capacities. The Ministries of Agriculture and Livestock Development, Forestry, and Community Development have extension personnel in the area. The EMI Programme has the Goat and Sheep Project, Soil and Water Conservation Programme and Forestry and Dryland Farming projects covering different parts of the Division. NGOs include CANSAVE, CARE-Kenya, World Vision. Churches and Kamujene FTC. Other organisations include KANU

Mandeleo ya Wanawake.

Throughout the study, the agricultural development resources examined are: first, extension and advisory services from both Government (Ministry of Agriculture and Department of Social Services), and non-government organisations. This is measured in terms of the number of visits received on individual farms and group plots. The second resource considered is capital, and specifically the provision of loans or grants to women's groups. Thirdly, the provision of other inputs; building materials, fertilisers and pesticides, livestock, veterinary supplies, and tools are included.

The first section of this chapter outlines the extension visits and inputs received by the sampled groups. Subsequent sections analyse the distribution of assistance according to the following factors: agro-ecological potential; physical accessibility; registration with Department of Social Services; income generating activities. In section 9.6 other factors, including access to land, sublocation, leadership characteristics and project biases, are discussed. Section 9.7 examines the expressed needs of the groups, and the chapter is summarised in Section 9.8.

9.1 Assistance Received by the Groups

1. Extension Visits

In all, 44 groups, 69% of those surveyed, had received visits from a variety of organisations: from Government, the Ministry of Agriculture, Department of Social Services and from local administration personnel. However, most of those visits were not concerned with agriculture, most are from Community Development Personnel urging groups to register, from development agencies

investigating group activities, and local administrators advising groups on organisation and cooperation. Only 20% of groups have received visits from either agricultural extension officers or non-government personnel concerning agricultural advice.

Table 9.1 shows the type of visits received by groups in the survey.

TABLE 9.1 GROUP VISITS

ORGANISATION	NUMBER OF GROUPS
CDA	20
EMI	17
CANSAVE	17
CARE-Kenya	6
OTHER GOV	10
OTHER NGO	4

Most of the groups that have been visited have received more than one visit.

ii. Capital: Loans and Grants

Only five out of the sixty-four groups surveyed have received capital inputs in the form of either loans or grants. These are groups numbers 01, 28, 31, 34, and 58, from Kamanyaki, Turima (2), Nkondi and Irunduni Sublocations. Three groups have received grants, and two loans. Group 01 (Kamanyaki Sublocation) received 11000/= from CANSAVE in 1984 to build a bakery and open a canteen. Group 28 (Turima) received a 5000/= grant from the Government (Ministry of Culture and Social Services) in 1985 to buy goats (the group presently owns more than fifty goats). Group 31 (Turima) received a loan from CANSAVE (value not specified) in 1988 to stock a canteen. Group 34 (Nkondi) received a 2000/= loan

from the Ministry of Agriculture in 1985 to build a shop in Nkondi Market. Group 58 received a 8000/= grant from the Department of Social Services in 1983 which was used to buy goats and an ox plough.

iii. Materials and other Inputs

Sixteen of the sixty-four groups surveyed have received materials and other inputs from development agencies. The inputs received include goats - "improved" Galla goats from EMI Goat and Sheep Project or through CARE-Kenya - and veterinary supplies, building materials such as ironsheets or sand or cement, tools such as jembes, tree seedlings and improved seeds. These are provided by Government (Ministry of Agriculture and Livestock Development), EMI, CARE-Kenya, CANSAGE, World Vision and Kamujene Farmers Training Centre.

Table 9.2 shows the types of inputs and materials received by the sample groups in Tharaka. Groups receiving livestock and other inputs have got improved goats and received materials to build goat sheds, fence compounds and in two cases, build water tanks from EMI and /or CARE-Kenya.

TABLE 9.2 INPUTS RECEIVED BY SURVEY GROUPS

TYPE OF INPUT	GROUPS	
	NO.	%
NONE	48	75
LIVESTOCK	1	1.6
LIVESTOCK + OTHERS	4	6.3
SEEDS	2	3.1
TREES	1	1.6
PESTICIDE SPRAY	1	1.6
TOOLS	3	4.7
BUILDING MATERIALS	4	6.3

EMI initiated a project in 1988 where groups were assisted by having their plots chisel ploughed, and were to be given improved, treated cow pea seeds. Participating groups, of which two were included in the sample, were still awaiting delivery of the seeds and are not included in the above table.

Table 9.3 shows the organisations providing inputs for the surveyed groups in Tharaka.

TABLE 9.3 ORGANISATIONS PROVIDING INPUTS

ORGANISATION	NUMBER OF GROUPS
GOVERNMENT	4
EMI	3
CANSAVE	2
CARE-Kenya	1
WORLD VISION/EMI	2
CANSAVE+GOV	1
EMI+CANSAVE+GOV	1
CARE+EMI+GOV	1
KAMUJENE FTC	1

9.2 Effects of Agro-Ecological Potential on Access to Resources

Do development agencies neglect farmers in low potential areas, and especially poorer farmers within less fertile regions? Some agencies have a mandate to concentrate on less fertile regions; for example, under the ASAL Programme, EMI is designed to cover Zones IV, V, and VI (see below). Chapter Four described ecological and environmental conditions within Meru District, and Figure 4.4 showed agro-ecological potential. Within Tharaka, considerable variations exist, ranging from Zone III, IV, V, VI. These classifications are outlined below, and a full explanation of agro-ecological classification referred to is shown in Appendix 3.

Zone III: Dry sub-humid areas characterised by evergreen shrubs, Combretum or allied vegetation, usually of good potential for agriculture (soil and topography permitting), although with a restricted choice of crops and farming systems.

Zone IV: Semi-arid areas characterised by dryland Acacias with some broad-leaved trees or shrubs where, despite relatively low and erratic rainfall, there is some potential for agriculture (for example, sunflower, cotton, beans or early-maturing cereals).

Zone V: Arid areas characterised by Acacia-Commiphora bushland where, given suitable soil depth and moisture-holding capacity, drought-tolerant cereals and legumes can be cultivated, although with significant risk of failure.

Zone VI: Arid areas, mostly low thorn bushland, shrub grassland or thicket unsuitable for rainfed agriculture, although with moderate potential for extensive livestock production or wildlife.

Grid references were obtained for the positions of women's group plots, and then these were plotted on maps produced by ODA showing agro-ecological zones. Agricultural Capability and Land Use and Vegetation maps were also examined.

32 of the groups surveyed (50%) were situated on land in Zone V, 22 (34%) were in Zone IV, and 10 (16%) were in Zone III. No groups from Zone VI were sampled. The Sublocation of Kathangachini lies in the northeastern corner of Tharaka, is remote and relatively sparsely populated. Sampling in this Sublocation took place towards the end of the survey period by which times the rains had started. Unfortunately, the Thangatha river which runs northwest to southeast across the Sublocation was in flood and uncrossable. Most of the land classified as Zone VI lies to the other side of the river.

Table 9.4 shows the distribution of the surveyed groups according to Agricultural Capability classification.

TABLE 9.4 AGRICULTURAL CAPABILITY

AGRIC. CAPABILITY	GROUPS SURVEYED	
	NO.	PERCENT
HS	5	7.8
S(SS)	3	4.7
S	5	7.8
Sc	12	18.8
M	9	14.1
Mc	8	12.5
Mc*N	6	9.4
N*Mc	5	7.8
N	11	17.2

- HS Highly suitable land with no significant constraints for sustained rainfed farming
- S Suitable land although with significant constraints for sustained rainfed farming
- SS Land recommended for smallscale irrigation development; otherwise suitable for rainfed farming
- Sc As S; priority areas for soil conservation works
- M Marginally suitable land with constraints which in aggregate are severe for rainfed farming and demand long fallows
- Mc As M; priority areas for soil conservation works
- N Areas where unreliable rainfall combined with variable, mostly shallow soils implies only very localised potential for rainfed farming and low priority for rainfed agriculture
- * Indicates plot is situated in borderline area between two categories.

The table shows some 39 of the sampled groups, a little over 60%, are farming plots in areas considered either marginal (M), or unreliable (N) for sustained farming and which require long fallow periods.

This indicates that groups are being pushed onto marginal land; M and N, where sustained cultivation year after year is impossible without many inputs. Land classified S(SS) occurs on the settlement schemes in Tunyai and Nkondi, and at Ruungu in Turima. Table 9.5 shows the Land Use and Vegetation Classification of the plots of the groups surveyed.

TABLE 9.5 LAND USE AND VEGETATION

CLASS	GROUPS SURVEYED	
	NO.	PERCENT
1	8	13.1
2	30	49.2
2*B	7	11.5
B*2	3	4.9
B	4	6.6
C	2	3.3
B*H	2	3.3
2*E	3	4.9
E	2	3.3

Three groups were situated off the map

- 1 >50% of land within cultivation cycle; fallows mostly short term
- 2 10-50% of land within cultivation cycle; fallows mostly long term
- B Bushland:>20% unspecified bush cover, mostly Acacia with local thicket and occasional cultivation
- C Combretum bushland and wooded grassland
- E Area of major surface erosion
- H Steep hillsides with scrub to low thicket, scattered Euphorbia trees and basement rock outcrops
- * Borderline areas

This classification also shows that many group plots are situated on land where long fallows are necessary; only eight groups farm land of class 1. This has implications for the longterm viability of women's group farming activities. The situation reflects the increasing pressure on land in Tharaka and the corresponding intensification of land use; people are being forced into cultivating land unsuitable for sustained farming. It also adds fuel to the controversy concerning privatisation of land in the Division, and raises the issue of groups having permanent rights (ownership) to plots (see Maas 1986).

i. Extension Visits

90% of groups situated in Zone III have received some kind of visit, 73% of those in Zone IV, and 56% of those in Zone V. However, only 20% of groups have received visits from either agricultural extension officers or non-government personnel concerning agricultural advice. 50% of groups situated in Zone III have received visits concerning agricultural extension, 20% of those in Zone IV, and 14% of those in Zone V.

This appears to indicate that a bias in favour of groups situated on higher potential land; particularly Zone III, in terms of all visits and visits concerning agricultural advice and extension.

ii. Capital: Loans and Grants

Of the five groups which had received either loans or grants, two were situated on land classified as Zone III; two on Zone IV, and one on Zone V. This means that 20% of groups from Zone III have received loans or grants, 9% of those from Zone IV, and 2.9% from Zone V, compared with the population average of 7.8%. This would appear to show a distinct bias in favour of groups from higher potential areas.

iii. Inputs and Materials

Groups in more fertile areas also appear to be favoured in terms of receiving materials and other inputs. Four out of the ten groups in Zone III have received inputs, five out of twenty-two groups in Zone IV, and seven out of thirty-two groups in Zone V. the corresponding percentages are; 40% of those in Zone III, 23% in Zone IV, and 14% in Zone V, compared with a population percentage of 25% of all groups receiving inputs.

9.3 The Effects of Physically Accessibility

Does the distance personnel have to travel to meet groups affect the assistance received by groups? Robert Chambers (1983) describes a series of biases which impede rural development researchers' and practitioners' contact with the poor in developing countries. Among these biases are spatial biases; urban, tarmac and roadside, which influence not only "rural development tourists", but also local level staff who live and work in rural areas. Urban biases direct attention to those who live in or near urban centres, and tarmac and roadside biases ensure that those who are less poor receive attention. Chambers observes that in Tamil Nadu in India, agricultural demonstrations of new seeds and fertilisers have often been sited beside main roads, and cites a study from Western Kenya describing the tendency for wealthier and more influential people to buy up roadside plots, thus creating an "elite roadside economy" (1983:14). These problems are further exacerbated by scarce resources and severe transport constraints, which are particularly acute within the Government sector. Are these biases operating within Tharaka, and do women's groups situated in more easily accessible areas within the Division receive more assistance?

There are no urban centres in Tharaka. Chiakariga is the Division centre, and location centres are Marimanti, Gatunga, Mukothima and Chiakariga. Sublocation centres are Kamarandi, Chiakariga, Tunyai, Marimanti, Kibunga/Ruungu, Nkondi, Kanyaga, Manduru, Gatunga, Kathangachini, Mukothima and Gaciongo. To assess the relative distance of group plots from centres, the distance from Sublocation or Location centre (whichever is nearest) by foot is measured in Kms. Respondents were always asked how long it took

them to walk to the nearest market; it was found that the average distance to the nearest (or most frequently used) market was some 94 minutes. 28% of respondents said that it took less than a half an hour to walk to market, and 54% took one hour or less. However, 36% took two hours or more, and 11% three hours or more. Although the figures are by no means accurate as women were only estimating the amount of time (they were checked on the map to see if distances corresponded), they indicate that some women live in very remote areas. The average distance of the group plot or meeting place from the local centre was found to be 8.1Km.

Chapter Four described the road network in Meru District. Figure 4.5 shows the major routes. Tharaka is poorly served by roads; there are no tarmac roads within the Division. The main route from Meru Town is the D475 which runs from the main trunk road, the B6 at Nkubu, to Mitunguu. From here, the C92 runs to Tunyai, Chiakariga to Ishiara. This road is generally passable most of the year, although following particularly heavy rainfall, upper parts between Mitunguu and Nkubu may be blocked. The road carries a large amount of heavy traffic between Mitunguu and Nkubu (Meru) and is the main route for matatus into the Division. The other main route, the E788 leading into the E801, runs from Mitunguu to Meru National Park, passing through Marimanti, Gatunga and Gaciongo. Roads to Nkondi, Kathangachini and Mukothima lead off this. Marimanti is served by a daily Matatu service to Mitunguu and Nkubu. The E788 is generally passable, although in wet weather one section, near the bridge crossing the Thingithu river, causes problems. Heavy vehicles may block the road, and only four wheel drive vehicles can traverse the crossing. It is possible for the road to be completely impassable for all vehicles for a number of

days during the rainy season. The other routes into Tharaka, via Nkondi and Mukothima are similarly unpredictable in bad weather and are generally in poor condition. Many areas may be cut off during the rains. Most minor routes are passable only in four wheel drive vehicles. The E788, leading into E789, from Marimanti to Chiakariga, which could provide an alternative route when the Thingithu crossing outside Mitunguu is impassable, is in poor condition, suitable only for four wheel drive, and was washed away and impassable for about a week during the rains in October 1988. With the exception of the C92, roads within the Division are in poor condition and are rarely graded. Distances from group plots to motorable roads, judged passable in four wheel drive most of the year, were measured from the researcher's own observations and knowledge of the local conditions (motorcycles, as used by EMI TAs will find more passable tracks). The average distance of group plots from the nearest motorable road was 1.4Km.

i. Extension visits

Groups which have received visits of any kind from Government or non-governemnt agencies are situated an average of 6.8Km from market centres; groups which have never been visited are, on average, 10.8Km from markets. Groups which have received agricultural extension visits are, on average, 9.1Km from centres, whereas groups which have never received visits are 7.9Km from markets. It would appear that whilst groups closer to market centres are favoured in terms of all visits, groups further from markets actually receive more agricultural visits.

In terms of distance from motorable roads, the average distance for groups being visited by all agencies is 1.2Km, whilst those receiving no visits are on average 1.9Km from roads. Groups

receiving extension visits are on average 1.1Km off the roads, those not receiving extension visits 1.5Km away. These results would indicate that groups situated nearest motorable roads are more likely to be visited by all agencies as well as by extension personnel.

Although there are not great differences between groups visited and those not, these results indicate that there are spatial biases concerning the contact of field staff with women's groups. The interesting result is that although groups receiving agricultural extension visits are, on average, nearer to motorable roads, they are further from market centres. For all visits, groups closer to centres and closer to roads appear favoured. It is thought that agencies delivering agricultural advice, provide field staff with motorised transport (four wheel drive vehicles in most cases, with EMI TAS on motorcylces). Thus these agencies show a bias towards sites near roads. Most other fieldworkers, particularly the Department of Social Services' CDAs, local administrators, representatives of KANU Mandeleo ya Wanawake, and EMI's Women's Group Co-ordinator have no motor transport and therefore favour groups closer to market centres. CDAs are based in Location centres, and the EMI Women's Group Co-ordinator is based in Chiakariga.

ii. Capital: Loans and Grants

As only five groups had received grants or loans, these results are only indicative. For those receiving capital inputs, the average distance to centres is 9.8 Km. The average for all surveyed groups is 8.1Km. The average distance of groups receiving loans and grants is 0.84Km, compared with the survey average of

1.4Km. These figures may therefore indicate a bias in favour of groups situated near roads, and as for extension visits this is presumed to be because funding agencies have motor transport.

iii. Inputs and Materials

Groups receiving materials and other inputs are sited an average distance of 8.9Km from centres; groups which have not received assistance are an average of 7.8Km from centres. The average distance for all groups surveyed is 8.1Km.

Groups receiving inputs are also sited nearer motorable roads; an average of 1.3Km away, compared with 2.6 for groups not receiving inputs, and 1.4Km for all groups.

9.4 Effect of Group Registration on Access to Resources

Are groups registered with the Department of Social Services more likely to receive assistance than non-registered groups? Is it possible that registered groups are "formalised", and more likely to be known to Government and non-government field officers? Eyben (1983:36) suggests that whether a group decides to register or not may be an important factor influencing the services and support it receives. Chapter Six outlined the distribution of groups in the Division and discussed issues concerning registered and non-registered groups. Local informants, who included local CDAs, Chiefs and Assistant Chiefs and other fieldstaff, estimate that there are between 200 and 250 women's groups active in Tharaka. This would indicate that some 25% of groups are not registered. The proportion of non-registered groups in the sample was 14%.

i. Extension Visits

69% of registered women's groups have been visited by some kind of agency; 67% of non-registered groups have been visited. The average for all groups is 69%. None of the unregistered groups had received agricultural extension visits; 24% of registered groups have had extension visits, and 20% of all groups. It is difficult to draw firm conclusions, although these figures may indicate that whilst non-registered groups are not discriminated against in terms of all visits, they are in terms of agricultural extension visits.

ii. Capital

All groups receiving capital inputs, whether from Government or non-government organisations are registered. It was found that these groups also tend to be well established, in terms of having been active for a number of years, and have been registered for a long period of time. Three of the groups had started before 1980, and all were registered between 1980 and 1984. The group which was registered in 1984 has been active since 1977. Although it is difficult to generalise from such a small number of groups, it would be reasonable to expect that groups receiving loans or grants have to demonstrate a proven record in co-operation, and that they are likely to be well known to local field staff and administrators.

iii. Materials and other Inputs

All the groups which have received materials and other inputs are registered. Most were formed in the late 1970s or early 1980s; the two most recently formed groups receiving inputs started in 1984.

9.5 Effect of Group Activities on Access to Resources

In Chapter Six women's groups were classified according to the activities which were specified on the self-help registration application forms. The classification is explained in Appendix 4. Groups often listed more than one activity at the time of registration, and for many groups, activities were unspecified. The activities of registered women's groups throughout the District were outlined.

For the analysis presented here, more detailed information is required concerning the activities of the groups surveyed. The classification used is adapted from that presented by Mwaniki (1986) in a study of women's self-help groups in Mbeere. The present study postulates that groups involved in income generating activities will receive more assistance from development agencies than those involved in purely self-help activities. Both Government and non-government organisations have pledged to support women's income generating activities.

Mwaniki classified group activities into three categories, which are used in this study; activities to raise money, projects to generate income, and general development activities. Activities to raise money consist mainly of farming activities, either members hiring out their labour as work parties on other peoples farms, or on group plots. Other methods of raising money include making and selling handicrafts; in Tharaka women make mats and baskets, and knit garments, or holding a Harambee. The most important reason for raising money is to form the initial capital a group needs to finance a planned income generating project. Money is also raised to form savings which can be used to help members during contingencies. Income generating projects include goat and poultry

farming, running a canteen, shop or store, a posho mill or bakery. Some groups have bought oxen and ploughs which are hired out to generate income. General development projects may help alleviate social and economic hardship, and cover a range of activities which not only help individual group members and their families, such as home improvement and house building, buying utensils for members and providing help and support (financial and other) in times of contingencies such as illness, but also community development, such as building a health clinic. Some projects are labour saving; hiring a plough, or communal work, and others involve setting up merry-go-round savings schemes. The majority are concerned with farm improvement; buying goats, cows or chickens for members.

Classification of group activities can be difficult. For example, problems arise with groups concerned with buying goats. Distinction was made between whether goats were considered as group property (even though they may be looked after by individual members), and when and why they were likely to be sold, or whether they were given to members by the group and were now considered her property. Groups keeping herds of goats were classified as having income generating projects (goat farming). It is not clear whether all these groups are likely to earn regular income from their herds, and how much of their investment is lost in the guise of "nyama choma" (roast meat) each time the local chief or other dignitary visits. Given the role of livestock in the economy of Tharaka, it is not surprising that groups choose to invest savings in buying goats.

Table 9.6 shows the activities of the groups surveyed; all groups have more than one activity.

TABLE 9.6 SURVEY GROUPS ACTIVITIES

ACTIVITIES	NUMBER OF SURVEYED GROUPS
ACTIVITIES TO RAISE MONEY	
GENERAL WORK	4
CASH CROPS (COTTON &/OR SUNFLOWER)	30
FOOD CROPS	22
GREEN GRAMS	40
TREE NURSERY	1
HANDICRAFTS	11
HARAMBEE	4
SUB TOTAL	112
INCOME GENERATING PROJECTS	
GOAT FARMING	24
POULTRY FARMING	10
OX PLOUGH	2
CANTEEN/SHOP/STORE	5
POSHO MILL	1
BAKERY	2
SUB TOTAL	44
GENERAL DEVELOPMENT ACTIVITIES	
BUYING GOATS FOR MEMBERS	18
BUYING COWS FOR MEMBERS	5
BUYING POULTRY FOR MEMBERS	4
HOME IMPROVEMENT	6
BUYING UTENSILS FOR MEMBERS	8
COMMUNAL WORK	6
EDUCATION/SCHOOL FEES	6
HEALTH CLINIC	1
CHURCH	1
CONTINGENCY	7
MERRY-GO-ROUND	4
LAND	1
MONEY TO HIRE PLOUGH	4
SUB TOTAL	71

The breakdown illustrates the importance of groups' farming activities. Most groups appear to cultivate crops on their communal plots in order to raise money to fund income generating projects and to improve members' economic status through buying

livestock. 96% of groups report selling all of the crops they grow; 2% sell a percentage of the crop, and 2% sell none of the crop. Less than expected numbers are involved in home improvement activities such as buying ironsheets for roofing (compared with MacKenzie's study in Murang'a (1986) where a high proportion of groups were involved in buying mabati). Group 035 from Nkondi represents a "mabati group" as described by other authors working in more fertile areas. The group farms a 1 acre plot (which the group bought in 1987), and saves money raised so that they can buy mabati for all the members. In the past, the group has bought household utensils and goats for members. Perhaps this level of income generation is out of reach for most groups in an area as poor as Tharaka.

In all, some 58 groups are involved in money raising activities, 28 have income generating projects, and 40 in general development activities. 11 groups have activities in all three categories. In addition, 26 groups had plans to start income generating projects and were raising money to invest in them. Most of these planned projects were building shops or canteens.

i. Extension visits

Of the 44 groups receiving any visit, 21 are involved in income generating projects. Therefore 75% of income generating groups have been visited, compared with 64% of non-income generating groups. 69% of all groups have been visited. 10 of the 23 non-income generating groups are planning income generating projects. Concerning agricultural extension visits, 11 of the 13 groups which have received agricultural visits have income generating projects. 39% of income generating groups have been visited, and

5.5% of non-income generating groups. 20% of all groups have received extension visits. Both of the non-income generating groups visited are planning to start money making projects in the near future.

ii. Capital: Loans and Grants

Four out of the five groups which have received loans or grants are involved in income generating projects. The fifth group which has received capital is planning to start an income generating project. Group 34 from Nkondi has been given a plot at Nkondi Market and plans to build a store so that they can sell knitted products and raise funds to build houses for members. It is not clear if it is necessary for groups to have demonstrated that they have income sources and capability for generation of income, or if injections of capital needed to fund setting up income generating projects.

iii. Materials and other Inputs

11 of the groups receiving inputs have income generating projects, compared with 5 of the groups without income generating projects; 39% of income generating groups receive inputs, compared with 14% of non-income generating groups, and 25% of all groups.

9.6 Other Factors influencing Group Access to Resources

A number of other factors emerged during the compilation of the case histories which may be important when considering assistance received by groups. These are discussed below, and include ownership of land, possible project bias, group leadership, and sublocation.

i. Land Ownership

Maas' study (1986) highlights rights to land as an important factor influencing the effectiveness of women's groups. In Tharaka, issues of land tenure are complex; traditionally land use was controlled by the clans, so that no land was under individual ownership. This situation applied until recently, when land registration and privatisation was introduced, and surveying is still underway in parts of the Division. As explained in Chapter Four, a number of different modes of tenure therefore exist within Tharaka. Areas where adjudication and privatisation of land have taken place include Tunyai, Nkondi, Irunduni, and parts of Marimanti, Turima, Kanyuru, and Chiakariga Sublocations.

12 of the groups surveyed have permanent rights or ownership to land. A further two groups are presently farming land donated to them by Church organisations. 9 groups have bought land, and three received plots from the County Council. In these cases, land can be regarded as an input from a Government agency (and in the case of the two groups in Irunduni receiving from the Church), although land as such was not included in the preceding analysis of inputs received by groups. The groups which have bought plots are situated in Chiakariga, Marimanti, Nkondi, Kathangachini and Kanjoro Sublocations. Prices paid for land range from 100/= per acre in Kathangachini to 3000/= per acre in Marimanti. Groups raised money through working together or through Harambee. Groups receiving land from the County Council are situated in Tunyai, Turima and Nkondi.

Table 9.7 shows the sources of groups' plots.

TABLE 9.7 GROUP PLOTS

SOURCE OF LAND	NUMBER OF GROUPS
GROUP OWNED - PURCHASED	9
GROUPS OWNED - COUNTY COUNCIL	3
DONATED BY CHURCH	2
BORROWED FROM MEMBER	7
BORROWED FROM A FRIEND	19
CLAN LAND	15
DON'T KNOW	1
NO GROUP SHAMBA	8

Groups having no group shamba cultivate on each other's farms (for example, group 24 in Marimanti, group 26 from Kibunga, Turima sublocation), and some form themselves in labour gangs to raise money (for example group 034 in Nkondi).

13 of the groups which own land have been visited by a development agency. 4 of the groups received agricultural extension visits. Although the sample is small, this indicates that 93% of groups owning land receive some kind of visit (62% of groups not owning land), and 29% receive agricultural extension visits (compared with only 18% of those which don't own land).

2 out of the 5 groups which have received capital inputs own land. Concerning other inputs, 6 out of the 14 groups have received materials and other inputs. 2 groups have received livestock and other inputs, 2 have received building materials, 1 group tools and another insecticide and sprayer. 43% of groups with land have received inputs, compared with 20% of other groups. It therefore appears that groups owning land receive more development assistance in terms of extension visits, capital and other inputs.

ii. Project Bias

Chambers (1983) describes project biases, where attention is concentrated towards certain projects:

"Ministeries, departments, district staff, and voluntary agencies all pay special attention to projects and channel visitors towards them. Contact and learning are then with tiny atypical islands of activity which attract repeated and mutually reinforcing attention" (1983:16).

Whilst it is only natural that local staff would want to direct attention towards more "successful" groups, where contact has been made, relationships built up and perhaps assistance channelled. In terms of this research, every effort was made to avoid such project bias.

The project bias is evident in some of the groups receiving assistance in Tharaka. It is illustrated by groups which have received assistance and inputs from a variety of organisations, and in a bias to assist groups only undertaking certain types of projects.

It has been observed that a small number of groups receive a great deal of attention from government and non-government organisations. These act as "magnets" and are made showpiece groups to which visiting dignitaries and development organisations are taken. These include groups 01 in Kamanyaki, 14 in Tunyai, 29 and 31 in Turima, 36 in Nkondi and 58 in Irunduni.

The project bias is also manifest in terms of the types of projects undertaken by groups which get assisted by development agencies. For example, EMI is interested in groups which keep goats. CANSAVE's interests include setting up bakeries. Their field animator in Mukothima is keen to encourage women to build water tanks. In this way, it may be that the range of activities undertaken by the groups is actually influenced by the

organisations involved in assisting women's groups locally, and the kind of assistance they are able to provide.

Three groups keep improved goats (numbers 01, 14, 26), and these groups have received the Galla goats as inputs from either EMI or CARE-Kenya. Group 36 from Nkondi were given a Galla buck by CARE-Kenya, but it died. The goats are normally bucks which are loaned to the group for breeding purposes. The groups have also received a whole range of inputs to compliment the goats, ranging from veterinary supplies (insecticide dips, drenches), building materials to construct goat houses and dips, and in building water tanks.

iii. Leadership

It was observed that there is a tendency for groups with leaders of high social status to attract assistance. Leadership may be an important factor influencing the success of a group (Kayongo-Male, 1983). Women who are articulate, confident, and have many local contacts may be able to help groups gain access to a range of resources, including inputs and other assistance. It may therefore be an advantage for groups to select women with a "high profile", or with high social status as leaders. Throughout the fieldwork with groups, this was illustrated numerous times.

The chairlady of group no.14 in Tunyai represents an emerging economic and social elite. She works fulltime as a nurse at Tunyai dispensary, which means that she has a high social profile. She knows many people in the area, and the dispensary is situated in the same compound as the Assistant Chief's office, and Division Education Office. The chairlady of group 50 in Gatunga represents a more traditional social elite, as she is the local circumciser. Women also gain status through the position of their husbands. The

chairlady of group 57 in Irunduni is a teacher, and also married to the Chief, and chairlady of group 58, also in Irunduni, is the local councillor's wife. The chairlady of group 49 in Gatunga is the wife of a successful local businessman. It is significant that some of the groups which have prominent, high status leaders, are also those identified as magnet groups; nos 14, 58. Such leaders, who also speak English, are able to articulate their needs effectively, and communicate with a range of government and NGO personnel.

iv. Sublocation

Is development assistance concentrated in certain Sublocations within the Division? Is this as a result of the convenience of working in certain Sublocations from an administrative point of view, or because of the agro-ecological potential or physical accessibility of different Sublocations? Do different agencies have a policy of concentrating development assistance in certain Sublocations, or are discrepancies due to the efficiency and enthusiasm of Sublocation and Location based field staff?

Table 9.8 shows the number of groups in each Sublocation which have received visits by development agencies. Sample sizes are too small to draw definite conclusions but what is apparent is that groups in Gatue and Kathangachini are less favoured for all visits and extension visits. These areas are remote and contain a large proportion of low potential land. In all other Sublocations at least half of the surveyed groups have received some kind of visit from a development organisation. In Turima, Nkondi and Irunduni, the most fertile areas, all groups sampled have been visited by at least one organisation.

TABLE 9.8 WOMEN'S GROUPS' VISITS PER SUBLOCATION

SUBLOCATION	ALL VISITS	AGRIC.EXTENSION VISITS	TOTAL GROUPS
KAMANYAKI	6	2	7
CHIAKARIGA	4	0	5
TUNYAI	5	2	7
MARIMANTI	4	0	6
TURIMA	6	4	6
NKONDI	5	2	5
KANYURU	3	1	5
GATUE	0	0	6
GATUNGA	4	0	5
KATHANGACHINI	1	0	3
IRUNDUNI	3	1	3
KANJORO	3	1	6
TOTAL	44	13	64

In terms of agricultural extension visits, none of the groups sampled in Chiakariga, Marimanti, Gatue, Gatunga or Kathangachini have been visited. Turima Sublocation, in the central part of the Division, appears to receive most attention from Government and non-government agencies: all six groups surveyed there have been visited, and four out of six have recieved visit concerning agricultural extension.

Whilst only anecdotal evidence exists, it seems probable that the concentration of assistance and visits to certain Sublocations occurs for a number of reasons. In Irunduni for example, a particularly enthusiastic field animator is thought to facilitate contact with groups. Gatue and Kathangachini undoubetly suffer due to their remoteness and lack of security. Some organisations, for example EMI have a policy of concentrating in certain areas, for example Turima for the soil and water conservation extension visits, and Kamanyaki for contact with the Women's Group Coordinator. It was also mentioned that communications and

contacts with administrators are well established in some areas, and that the enthusiasm of local field staff, for example the CDA in South Tharaka Location (Kamanyaki, Chiakariga and Tunyai) is of significance.

9.7 Expressed Needs of Surveyed Groups

TABLE 9.9 EXPRESSED NEEDS OF GROUPS

TYPE OF ASSISTANCE	NUMBER OF GROUPS
CAPITAL	
BUILD CANTEEN/SHOP/KIOSK	23
STOCK CANTEEN	5
BUILD GOAT HOUSE	1
BUILD CHICKEN HOUSE	2
BUILD MEETING HOUSE	4
BUILD BAKERY	2
BUILD POSHO MILL	4
BUILD NURSERY SCHOOL	1
TO INVEST	1
TO START KNITTING BUSINESS	1
TO BUY LAND	2
TO FINANCE IRRIGATION	1
TO BUY COWS	1
SUB TOTAL	48
OTHER INPUTS	
BUILDING MATERIALS	8
JEMBES, PANGAS, TOOLS	6
HELP TO DIG TERRACES	1
TRACTOR/OX PLOUGH	8
IMPROVED SEED	3
WATER	2
EMI GOATS	5
POULTRY	1
SPRAY PUMP	2
SUB TOTAL	36

Group leaders were asked what type of assistance was most needed by the group. Table 9.9 shows the responses, and reveals that most groups want capital to start income generating projects. One group did not require any assistance, and three said that any assistance available would be welcomed.

The results would appear to indicate that groups have extreme difficulty in raising funds to start income generating projects. Many groups want to build canteens, shops, kiosks or stores. When these projects were discussed, the motivation seemed to be as much convenience as income generation; many women have a long way to walk to nearest shop for everyday products; soap, tea, sugar and cooking oil.

9.8 Summary

More than two-thirds of the groups surveyed had been visited by some development agency, either government or NGO. However, only one fifth of groups have received visits from agricultural extension agents. Most visits were either from the CDA, advising groups on registration, or from NGOs appraising groups. Only five out of the sixty-four groups surveyed had received capital inputs in the form of grants and loans. Sixteen groups have received materials and other inputs, which are primarily agricultural - including goats, veterinary supplies, tools, seeds, pesticides - the exceptions being building materials.

The chapter then examined whether certain factors were likely to influence groups' access to these resources in order to test Hypothesis Three. It was found that groups situated in more fertile zones, particularly those in Zone III, are favoured in terms of agricultural extension and other visits, and in receiving capital and material inputs. It has been shown that groups sited

closer to motorable roads are more likely to receive extension visits, and capital and other inputs. Groups registered with the Department of Social Services also appear more likely to receive assistance. There is also a bias in favour of groups undertaking income generating projects. These findings support Hypothesis Three.

A number of other factors were discussed. It was found that groups which had permanent rights to land appear to receive more visits and inputs. Project bias was observed where certain groups act as showpieces or magnets and receive much attention and assistance from more than one organisation. Leadership also plays a role, and groups headed by women with high social status who are confident and articulate will be able to contact and gain access to different organisations. Some Sublocations also appear to be neglected by development agencies; in Gatue and Kathangachini coverage is particularly sparse.

All these factors may indicate that groups made up of poorer women; those situated in less fertile, more remote areas, groups unable to afford income generating projects are less likely to receive assistance from either the government or non-government sectors. The expressed needs of the groups indicate that many groups have great difficulty in raising funds to start income generation.

The next chapter will discuss some of these issues in greater detail. In what ways can the biases observed here be overcome, and how can assistance be made available to women who most need it, who may not be able to participate in groups in the first place? Chapter Ten summarises and discusses the findings of the research, and presents recommendations.

CHAPTER TEN

CONCLUSIONS AND RECOMMENDATIONS

The research set out to assess the effectiveness of women's farming groups in fostering self-reliance among peasant farmers in Tharaka Division, a semi-arid region of Eastern Kenya. Three different aspects of the groups were examined; first, which women participate in groups and specifically whether poorer women farmers join the groups. Secondly, extension and the dissemination of innovations through groups. Thirdly, groups' access to agricultural development resources.

This chapter summarises the findings of the research and discusses some of the implications of the study. Recommendations for policy and further research are presented.

10.1 Summary of Findings

This section sets out the findings of the research in the three areas of study.

1. Participation

The research shows that for a range of indicators, non-participants have lower economic and social status than either members or leaders of women's farming groups.

Close to one third of non-participants are female heads of households, with a further 30% farm managers. Non-participants rarely hire labour on their farms and nearly one third of non-participants are solely responsible for all the work on their farms. It was found that non-participants have fewer sources of income than either group leaders or members. They were more likely to be dependent on irregular sources of income, often undertaking casual farm work, and to be the only income earners in their

households. They were less likely to have access to non-farm sources of income. Over 90% of non-participants are unable to produce enough food to feed their households in most years. Over 50% of non-participants keep no livestock compared to less than 7% of group leaders and members. All these factors indicate that non-participants are poorer than either group leaders and members, and are likely to be more vulnerable to contingencies and drought, and to suffer more severe labour constraints. The overwhelming majority of non-participants identified lack of time as being the main reason why they did not participate in groups.

These findings conclusively support Hypothesis One, and it is therefore concluded that poorer women are excluded from participating in farming groups. The main constraint is lack of time which more severely affects poor women, especially those who are heads of households.

2. Extension Contact and Innovation

Non-participants are less likely to adopt agricultural innovations on their farms. This was found to be true for the use of improved seeds, application of fertilisers, pesticides, manure, and tree planting. Non-participants were also found to be less likely to grow cotton, but more likely to grow sunflower. This is probably because sunflower requires fewer labour inputs.

Less than 15% of all respondents have been visited by agricultural extension personnel and the majority of these have only been visited once. Non-participants are less likely to receive agricultural extension visits on their own farms than either group leaders or members; only 4.6% of non-participants have received extension visits. To aggravate this, these women are also unable to benefit from extension contact with groups.

Respondents' expressed needs gave priority to capital for a variety of different needs, improved seeds, and help with land preparation. Non-participants need improved seed and capital (loans or grants) to buy land or pay for school fees. This is assumed to reflect their knowledge of available innovations. Non-participants did not express a need for either soil conservation or terracing, fertilisers or pesticides, or extension and advice. These findings support the first two parts of Hypothesis Two, but negate the third.

The first part of Hypothesis Two states that group participants are more likely to adopt agricultural innovations than non-participants. This is confirmed by the results which show that for all the innovations considered, both group leaders and members are more likely than non-participants to have adopted them on their farms.

Findings also support the second part of Hypothesis Two; women's group participants do receive more visits and appear to be better informed about innovations (in terms of their expressed needs) than non-participants.

However, there is little evidence to corroborate the third part of Hypothesis Two, which states that women use group plots as informal demonstration plots. It was found that groups do not innovate, in terms of adopting the examined innovations, on group plots. The reasons for this are risk, lack of money and time, and access and rights to land. It was observed that groups only innovate as a direct result of the intervention of an outside agency, for example, in being loaned or given improved stock, when given seeds or tree seedlings, or assisted by the loan of a tractor and driver as with EMI innovations with chisel ploughing.

However, it is not known if information is disseminated through groups. Evidence from the expressed needs of the respondents implies that it does.

This means that group participants are advantaged in three ways in terms of access to information: First, because they receive more extension visits on their own farms. Secondly, because they receive extension through visits to groups. Thirdly, because dissemination of information takes place between women in groups. These factors are reflected by women's group participants' propensity to adopt innovations, although this is also probably affected by their higher economic and social status.

3. Access to Development Resources

The types of assistance received by the surveyed groups were investigated. The services and resources examined include visits from CDAs, Agricultural Extension personnel and development agencies, capital, material and other inputs.

A number of factors appear to favour access to assistance and resources. These characteristics of groups include: being situated in higher potential areas (in Zones III or IV); being situated close to motorable roads; being registered with the Department of Social Services; being involved in income generation, as opposed to general development activities. It is also indicated that groups having permanent rights to land, groups with high status and high profile leaders may receive more assistance. It was observed that certain groups act as "magnets" and that there may be a project bias in operating which attracts assistance to a few favoured groups which may then be treated as "showpieces". In addition, the findings indicate that groups from certain sublocations, specifically those situated in Gatue and

Kathangachini, may be excluded by development agencies.

These findings support Hypothesis Three, but also indicate that the situation is considerably more complex, with a range of factors influencing the different development agencies operating in Tharaka.

The expressed needs of the groups indicate that many have extreme difficulty in raising funds to start income generating projects. Capital was the most popular request. Many groups wish to build and stock canteens and shops.

10.2 Implications of Findings

A number of conclusions can be drawn from these findings. This section discusses some of the issues raised by the results and answers the research questions posed by the hypotheses.

1. Participation by poorer women: Labour and Time Constraints

It is concluded that poorer women are excluded from participating in women's farming groups. The major reason given was time constraints caused by the excessive labour demands of agricultural, domestic and income generating work. Detailed time budget studies of women and men farmers in this part of Kenya have not been carried out, but peak times in the agricultural calendar are shown to be during planting and weeding. Wood and water collection adds to women's work burdens. In Tharaka, water collection is particularly difficult, with many women having to walk more than two hours daily to fetch water.

In the past, "traditional" gender divisions of labour in farming ensured that, whilst women still shouldered a heavy burden, certain tasks, for example land preparation, were carried out by men. Other tasks, such as planting and weeding were shared between

husband, wife and other family members. Changes are caused by male migration, the employment of men off farm in both formal and informal jobs within the area, and the high numbers of children attending school. In addition, changes in the societal valuation of farm work which perceive it as low status, unpaid, "traditional" or backward, have caused men to abandon their roles in farming. Introduction of cash cropping has resulted in men concentrating on these crops, and withdrawing labour from food crops. Subsistence farming is today almost exclusively the responsibility of women. In households consisting of younger couples women are more likely to be solely responsible for all farm work, regardless of whether men are employed in off-farm jobs.

The research found that just over half of farms in Tharaka (50.5%) are managed by women. Whilst numbers of women farm managers are increasing, so are numbers of women heads of households. These may be de jure heads of household - women who are widowed or divorced -or de facto, caused by migration of husbands or desertion. There is evidence that these households are poorer than households with a man present and that they have access to fewer and less varied sources of income. Women who are heads of household are likely to suffer severe labour constraints, which may curtail production of food and cash crops, limit income generating opportunities, as well as prevent them from participating in women's groups.

2. Extension Visits Received and Innovation by Women Farmers

Poorer women and non-participants are discriminated against in terms of access to agricultural development resources and particularly extension services. However, the main constraint to adoption of innovations is not lack of knowledge. We know this

because many respondents demonstrated that they were well informed about innovations through the expression of their perceived needs, for example for improved seeds, often naming the variety they required, or trees. The main constraint is access to resources. Most commonly this means lack of money - either cash or capital - to buy or invest in innovations. This is compounded by limited ability of poorer farmers to withstand risk.

Labour is also a constraint, particularly affecting the adoption of soil conservation techniques, for example the construction of terraces. In some cases these problems were compounded by products simply not being available locally, for example, women reported that it was not possible to find pesticide spray at markets in Tharaka at the required time.

However, the dissemination of information about agricultural innovations does not necessarily take place via extension services. Information is spread through various networks and contacts, including formalised women's groups and also through less formal networks. Experience shows that information concerning appropriate innovations, bringing tangible benefits to peasant farmers without encompassing severe or unreasonable risk, is effectively disseminated through these channels.

Poorer women and non-participants are less likely to adopt innovations on their farms for a number of reasons. Firstly, because they are poor and unable to afford cash or capital outlay or any increased risk associated with innovation. Secondly, because they receive fewer extension visits and have limited access to other services, for example, credit or cooperatives. Thirdly, they are more likely to be affected by labour constraints. This particularly affects women who are heads of

households. Fourthly, they do not get benefits of networks and mutual support and information through women's farming groups.

3. Innovation by Women's Farming Groups

Women's farming groups in Tharaka are not necessarily innovative for a number of reasons. First, although it was expected that groups would be more willing to take risks than individuals, as such risk would be shared, and crop failure would not have such catastrophic effects as it would to individual farmers' families, it appears that groups chose low risk options. This reflects the role played by groups in cushioning members from risk and relieving vulnerability, and their role in helping members overcome contingency. Group activities are therefore often chosen for their reliability, not for their potential high returns.

Secondly, groups suffer perennial problems in raising capital and are unlikely to have sufficient funds to invest in innovations on group plots.

Thirdly, labour is once again a severe constraint for group activities. Labour constraints were reported to be the cause of some of the failures of group crops. For example, EMI assisted a number of women's groups in Kamanyaki and Chiakariga in 1988 by chisel ploughing their lots, and provided treated, improved cow pea seed. However, when labour was particularly short at weeding time, the women did not weed the cow peas at a critical time, and the crops failed. Group plots often come third amongst competing labour demands, following home plots providing family subsistence, and casual work undertaken for cash.

Fourthly, access to land may influence groups' propensity to adopt innovations. Women may be unwilling to invest money or time in land which they have no secure rights to. The experience of Group

27 in Turima Sublocation illustrates this. Local informants report that investments made by groups which improve land, for example terracing or fencing, may even result in land being taken back by its owner.

Fifthly, the objectives of most groups are either providing mutual support and aid during times of contingency - to provide security for women - or to set up income generating projects. In many cases, group farming was used as a way of raising funds to finance other group projects. Farming is not an end in itself, merely a means to an end, so is not given such priority.

The final observation is that most groups innovate only as a direct result of intervention by an outside agency, and in many cases these interventions are not successful, for all the reasons already discussed.

4. Assistance to Women's Farming Groups

There are indications that the assistance available to women's groups is administered from the top-down, rather than in response to women's needs: interventions are usually not appropriate.

The attention of both government agencies and NGOs is generally directed toward groups situated in high potential areas, which tend to be made up of wealthier women. It is also biased towards groups involved in income generating activities, and among groups made up of women of higher economic and social status. It was observed that certain groups, mainly those who have women of particularly high social and economic status in leadership roles, act as "magnet" groups which attract a disproportionate amount of assistance. As soon as these groups have been assisted once, they attract more support to ensure their continued success. They are then treated as "showpiece" projects. There is also a duplication

of assistance by different agencies and a marked lack of coordination. These factors lead to groups becoming dependent on outside assistance (Feldman, 1984 observed that groups were dependent on government grants, but in the survey, groups are more dependent on a range of NGO inputs), which undermines their role in facilitating self-reliance.

10.3 Women's Farming Groups and Self-Reliance: Conclusions

The factors discussed above combine to show that a policy of concentrating assistance to women's farming groups immediately discriminates against poorer farmers who are less likely to participate in groups. This is exacerbated by the distribution of assistance in terms of extension services, capital provision, and other materials and inputs, to elite groups in more fertile and accessible areas.

One area that this research has briefly touched upon is the existence of alternative groups made up of poorer women. The research has shown that, generally, women who participate in women's farming groups are of higher economic and social status than non-participants. Significantly, non-participants are more likely to be women household heads, who, it has been shown, suffer severe labour constraints and have limited access to income. Muzaale and Leonard (1985) maintained that women's groups they studied were either "elite" or "alternative". Other researchers, for example, Jiggins (1986), Hyden (1985) and Nelson (1978) have shown how female heads of household utilise personal networks for mutual self-help and support. It is possible to pick out groups in Tharaka which are undoubtedly made up of poorer women, and some appear (although not all members were interviewed) to be made up predominantly of women heads of household, for example, group

numbers 18, 25, 41, and 62.

It was also observed that there are two distinct types of female headed households. In some cases a distinction can be drawn on a de facto and de jure basis (although this is by no means as a rule). Many de facto women heads of households, particularly younger women, are those whose husbands work in formal sector employment outside Tharaka. These households are forming a new elite, having access to regular cash income. Husbands usually spend up to one month a year (their annual leave) with their families in Tharaka. These women form groups, often with other women whose husbands work in the formal sector locally (often teachers), which aim to be mutually supportive and provide help at times of peak labour demand, but also aim to be income generating. Such groups are numbers 22, 28, 36, 37, 40.

In contrast women heads of household who are widows, divorced, or have been deserted by their husbands, are much worse off, displaying all those characteristics which we normally associate with female heads of household. In many cases it is such women who have most to gain from the benefits that women's farming groups have to offer; mutual self-help and support during contingencies, and perhaps opportunities for saving and investment, even on a very smallscale, through merry-go-round schemes. These women belong to households which are most vulnerable. Vulnerability is not the same as poverty. It means not lack or want, but defencelessness, insecurity, and exposure to risk, shocks and stress, as explained by Chambers (1989):

"vulnerability...refers to exposure to contingencies and stress, and difficulty in coping with them" (1989:1)

One function of women's farming groups is in alleviating vulnerability rather than poverty; these are the benefits

identified by women themselves. Therefore when attempting to rate their success in terms of reducing poverty; in operating income generating projects, we are making unjustified assumptions. This is because in many instances, we have not asked women what their aims and objectives are, or their criteria for success.

The situation in Tharaka can be expected to continue to deteriorate in the future and stop-gap measures will be unable to compensate for the decrease in standard of living. At the centre of this scenario lies a shrinking resource base, where too many people are trying to scratch a survival from too little land using inappropriate methods encouraged by government policy. Privatisation, commoditisation and marginalisation will cause a differentiation and stratification within Tharakan society. We already see the emergence of a non-traditional elite - households with access to non-farm income, mobile, living in nuclear family units. It is expected that these will accumulate wealth and buy more land as it is privatised. Many Tharakan families will be forced to sell their land, the source of their livelihood, thus creating a landless class, as predicted by Wisner (1977) and BDDEA (nd) dependent on food aid for their survival.

At the moment the only way Tharakans can avoid such a future is to migrate and find employment in formal, normally non-farm sector. The key to such success is education, hence the priority given to schooling by women's groups.

Given appropriate, supportive policy interventions, women's farming groups could undoubtedly provide significant institutions to help poorer households cope with contingencies and vulnerability.

Chambers Twentieth Century Dictionary (1972) defines self-reliance as "healthy confidence in one's own abilities". There are further implications, including concepts of self-sufficiency and emancipation, dedication and self-possession. Wisner (1988) describes self-reliance in terms of self-organisation and self-assertion. Fostering self-reliance therefore embodies supporting the poor in making their own decisions. In this respect it becomes overtly political, not just about providing aid to women's groups in their income generating endeavours, but in defending their rights and supporting their decisions. The first step must be in listening to these people. In this respect, women's farming groups become a mechanism for giving poor women a voice and perhaps some sort of collective power. A policy supporting women's groups can be compatible with "people-centred" development, or with Wisner's strong Basic Needs Approach (Wisner, 1988). However, in the past policies which have talked of "community participation" have not achieved the desired ends in terms of reaching the poor.

The next section discusses policy interventions which could support women's farming groups, and suggests ways in which self-reliance could be encouraged among women farmers through facilitating participation, innovation and access to resources.

10.4 Recommendations

The study concludes that a policy of concentrating assistance, particularly agricultural extension services, to women's farming groups, as in operation in Meru, may be expedient and economical, but cannot be justified unless measures are taken to ensure the participation of poorer women farmers in such groups.

The policy recommendations in this section are presented under three sub-headings which correspond to the three areas examined in

the study; participation, extension and innovation, and access to resources.

1. Measures to ensure increased participation of poor women in farming groups

i. Introduction of Labour-saving Technologies

The research findings demonstrate conclusively that the biggest constraint to women participating in farming groups is their lack of time. This is particularly true for poorer women and women who are heads of households and therefore likely to be responsible for all farm and domestic work, as well as income generating activities. Policy interventions aimed at increasing participation by poorer women must therefore set out to free time from some of these areas. The proposals put forward below concern the introduction of low cost, low risk techniques, which may be called "Appropriate" technologies. Some of the innovations may also be described as "Intermediate" technologies (see Carr, 1985:9 for definitions).

It is recommended that the introduction of labour-saving technologies in the following areas be given priority.

Water

Water remains a scarce resource in Tharaka and the survey has shown how some respondents spend many hours each day collecting water for domestic use. When asked about the main problems facing Tharaka generally, the majority of respondents identified water availability. Most Tharakans collect surface water from rivers or streams and some dig for water in the dry season. In areas with slightly higher rainfall, for example, Irunduni and Nkondi, rainwater collection is possible, though only from mabati roofs.

In Irunduni the CANSAVE field animator instructs women in the construction of low cost water tanks. Piped water is available in parts of Tunyai on the settlement scheme, and there is a communal tap in Chiakariga.

At present, SIDA are initiating an extensive programme drilling boreholes. This will have a dramatic effect, not in cutting down the time spend collecting water as most of the boreholes are sited near rivers (it may make water more accessible in the dry season), but in providing clean water. It is likely that it will bring considerable benefits to health.

The range of low cost technologies for water collection is limited, but nonetheless, some improvements are possible to lighten women's work burden. The simplest and least expensive techniques involves assisting in the transport of water. The most appropriate innovation in Tharaka is likely to be introducing donkeys with specially designed water carriers (see Curtis, 1986). Donkeys are used extensively in Kitui District, across the Tana River, and to the north of Meru National Park in Isiolo. Very few donkeys are used in Tharaka, although there appear to be no disease problems. Women were seen at Chiakariga Market using donkey to carry produce.

Concerning irrigation, Hogg (1988) describes how the economics of smallscale irrigation have come under increasing criticism. As a result there was a noticeable shift of emphasis in the 1984-88 Development Plan, away from the expansion of the smallscale irrigation sector and instead, a concentration on mixed farming systems and the development of "water conservation techniques", especially in the use of water harvesting methods to collect and store run-off and ephemeral stream flow. Hogg describes the

participation of self-help groups, consisting largely of women, in the construction of dams and rock catchments. However, these techniques require intensive labour inputs. As Hogg points out, until the question of labour availability is addressed, such techniques are unlikely to be adopted by many farmers in the area. Any "new" technique which increases labour demands on limited household supply is unlikely to be popular. At the present time, it is suggested that efforts go towards problem solving in terms of transport of water, before further investigation of irrigation possibilities.

Land Preparation

Land preparation was also identified by respondents as a constraint to increased production and many asked for help with land preparation; money to hire tractors, ox ploughs, labour, or to buy tools. Poorer farmers can not even afford to buy a hoe when needed. In many cases, respondents indicated that but for constraints in terms of land preparation, they would be able to cultivate larger areas of land.

Ox ploughs were a common request, and would appear to be an appropriate innovation. The changes in cultivation techniques required are not major, and appear to be acceptable to Tharakan farmers. Local people have experience in caring for stock. Problems are with initial investment, training of oxen, and availability and maintenance/repair of equipment. There are possibilities in setting up a workshop as an income generating and employment/training project.

Weeding

The majority of respondents said that weeding was the busiest time of the year. Effective weeding is crucial to yield. If ox ploughs were introduced for land preparation, they could also be used for weed control. The cost of herbicides may make them too expensive for poorer farmers. As yet, few improved tools are available to make weeding easier, and there is a need for further research in this area.

Wood

Fuelwood availability is likely to become a more widespread problem in Tharaka in the near future. At the moment the Forestry Department is more active in upland areas, but there is a need to shift emphasis to the dryland areas. Tree planting should be encouraged on a more widespread level. There is also a need to investigate uses and advantages of indigenous tree species, and so encourage planting of multi-purpose, drought resistant trees which can be used for food, fodder, and woodfuel. Improved wood burning stoves have been introduced in upper Meru, and should be introduced to dryland areas.

Storage Facilities

The need for local storage facilities was highlighted by respondents. Post harvest pests are a major problem and traditional stores do not appear to be particularly effective. There are now designs available which are low-cost and built out of locally available materials which would enable local farmers to store food and seeds for later use, but also to be able to take advantage of seasonal fluctuations in prices. In this way farmers will no longer sell to traders from upper Meru when the price is

low, only to have to buy back when the price is high.

Implementation

How are such innovations to be disseminated to poorer women in order to free some of their time? This remains a problem, as most of these innovations still require some capital outlay. These innovations are also appropriate for adoption through groups. Donkeys and ox ploughs, for example, may be more suitable for groups to buy and operate. These innovations should perhaps become the basis for alternative groups of poorer women.

It is suggested that innovations should be disseminated through usual government and NGO channels, but also be actively marketed within the Division.

ii. Promote and Support "Alternative" Farming Groups

Peterson (1982) found that a feature of effective small-farmer groups is their simplicity and ability to organise around a single, concrete goal which should be achievable within a limited period of time. The farmers perceive themselves as organising to achieve this one goal, and not to create an organisation. Effective groups start with one task and not several, and that task requires minimum non-farmer skills, such as bookkeeping, and cooperation is necessary for its completion (the task cannot be carried out on an individual level). Groups were small and unconnected to other groups, and relatively informal, unsophisticated and familiar organisational forms. Effective local organisations are therefore characterised as small-scale, single-functioned, differentiated from other small groups, and homogenous in their membership. Peterson maintains that the key features of these organisations is their simplicity, which ensures local

control and allows them to evolve and terminate if necessary.

In addition to the features outlined by Peterson, it is also important that groups remain flexible. At times when women are especially busy on the shambas, for example, weeding, groups may suspend meeting. Muzaale and Leonard (1985) observed that in times of environmental stress (drought) poorer women dropped out of groups because they could not afford contributions. There is therefore an argument for not demanding weekly contributions throughout the year.

It is suggested that the practice of compulsory registration of women's groups as self-help groups with the Department of Social Services at District level be abolished. Although registration may enable the Department of Social Services to estimate the number of groups in the District, and is supposed to assist the distribution of inputs from the Women's Bureau, the practice has many disadvantages. Problems associated with registration, and believed to militate against poorer women being active in farming groups are:

1. The practice intimidates women, believing that local officials will call upon groups for political support and interfere with activities. It creates difficulties for women who cannot read or write, and also costs money and brings few benefits;
2. The practice is needlessly bureaucratic and takes up much of local CDAs' time which could be used more constructively;
3. The practice conflates all local organisations consisting of women as women's self-help groups, when in actual fact, their functions, aims, and activities are quite diverse;
4. The practice ignores all more informal groups and excludes them from all kinds of government assistance.

Such a lumping together of so many groups on a geographical basis also overlooks the special needs of groups in drier, impoverished regions such as Tharaka. National policy, implemented through the Women's Bureau and Department of Social Services, puts an emphasis on women's groups' as income generating projects. The Women's Bureau and Maendeleo ya Wanawake have pledged to support income generating projects. This discriminates against groups in poorer areas, and those made up of poor women, and this bias is exacerbated by procedure of registration.

2. Measures to encourage the development and dissemination of appropriate innovations for poor farmers

Hunt (1984) describes the features of the "ideal type" farm innovation which would be likely to prove acceptable to low income households having some access to cultivable land. Such an innovation should have the following characteristics: It should make low initial demands on all three factors of production (land, labour and capital). It must generate a reliable return: the risk of crop failure should be no higher with the innovation than with the existing cropping pattern, ideally, it should be lower. The output should be one which can either be consumed at home or sold. Finally, the innovation should not increase the waiting period until harvest.

The recommendations suggested below are intended to facilitate the development of such appropriate innovations.

1. Adoption of "Farmer-First" Approach to Research and Development

The "Farmer-First" approach (Chambers et al, 1989) puts an emphasis on farmer's participation at all stages of innovation design, development and dissemination. It is a methodology suited

to develop innovations appropriate for complex, diverse and risk-prone small farming systems.

The approach necessitates a shift in emphasis from transfer of technology models, to participatory research and development, therefore requires a change in perception from farmers as adopters, to farmers as innovators. Biggs and Clay (1981) demonstrate how farmers practice a continuous process of innovation, an informal R&D. Mbithi and Wisner (1973) show that in drought-prone regions, there is a need for the development of "adaptive", rather than "transformative" technologies, because of the risks involved in adopting innovations.

Women's farming groups may be ideal mechanisms through which to implement such a strategy. ICRAF's experiences (Raintree, 1987) show how groups can be instrumental in agroforestry diagnosis and design. ICRAF stress the need to involve women as beneficiaries of tree planting schemes and as co-planners of any activity involving their own labour. ICRAF found that women's groups (in Machakos District) constitute a natural unit around which nursery groups could be organised, and that when groups were able to define their own objectives, corroboration was successful. Groups identified their needs, and researchers, foresters and local herbalists were actively involved in searching for appropriate species compatible with individual group members' needs and priorities.

Integral to the Farmer-First model, is the need to recognise and utilise indigenous technical knowledge (ITK) which is believed to be crucial to the successful development of appropriate innovations. This is especially true for women's indigenous technical knowledge. Women's knowledge is rarely given status, although women may be often responsible for cultivation practices,

as well as collection of water, wood, bush foods and certain medicinal herbs.

McCall (1988) advocates the use of ITK to increase self-confidence and "self-belief", which is necessary to ensure participation of the rural poor for genuine local level development, and Wisner (1988) believes that locally based knowledge is the foundation of self-reliance. This self-confidence and conscientisation may be especially needed by women.

ii. R&D for the Drylands

There is a great need for research and development into food crops appropriate for semi-arid areas. The vast majority of funds and time goes to research into cash crops with high water requirement. There must be a considerable shift in emphasis if improvements to farming systems in the drier areas are to be made. Such an emphasis may conflict with government policy, which is to continue to expand production of cash and export crops, so it may be an area where international donor agencies can take financial responsibility. In Tharaka, Dryland Farming Research at Marimanti should be expanded to allow a more participatory approach to developing improved food crops.

iii. Environment Conserving Innovations

Any innovations considered for the semi-arid areas must be environment conserving. Within this policy, there should be an emphasis on soil conservation and trees. This will also link in with the recommendations for a farmer-first approach to R&D, incorporating value given to ITK.

There is a need to further develop acceptable soil conservation techniques compatible with current cultivation practices and most

importantly, less labour using than present techniques. This is likely to be achieved in partnership with local farmers.

iv. Appropriate Extensions Strategies

This section has purposely not put forward recommendations for improved extension strategies as a priority. This is because it is firmly believed that the dissemination of information is not a constraint to the adoption of innovations; rather, the lack of appropriate technologies, and poverty mean that access is the biggest constraint to adoption.

It seems likely that extension strategies will focus on farmers' groups in the future, because of advantages already discussed, and because of economic and transport constraints. The World Bank has concluded (1989) that working with women's groups could probably double the reach and lower the cost of Kenya's Extension service. Gladwin et al (1986) propose that local women with leadership potential should be identified (it does not specify how) and given training to develop their skills as paraprofessional agricultural agents. This may be applicable in Tharaka, where women could be trained by EMI, for example in livestock husbandry. These women would then act as a link between farmers (especially women who are discriminated against in terms of contact with extension staff) and extension agencies. They would facilitate a two-way flow of information which would enable extension services more responsive to farmers' needs.

It is recommended that present Farmers Training Centres in Tharaka, and particularly the EMI Goat and Sheep Ranch at Marimanti, be made more accessible to farmers. It is proposed that this should operate an open-door policy where farmers are able to come into the centre when they wish, rather than only for formal

teaching courses. In this way the centres could cut costs, provide timely advisory services and demonstrations to farmers.

3.Appropriate Inputs to Enhance Self-reliance for Women's Farming Groups

i. Training for Women

There is a need to encourage and stimulate women to articulate their needs. It is proposed that this be done through appropriate training, for example of women's group leaders. This could include leadership skills, but also informing women of all services and NGO projects available in the area. The training needs also include basic financial management, which gives women skills and confidence.

Training should be implemented primarily through exchange visits, so that groups work with each other and learn from each other. Special attention should be given to the constraints which make it difficult for women to attend formal, residential courses; childcare, workloads, transport, lack of literacy and language skills. A more flexible approach, where agencies and trainers act as facilitators or animators is necessary. The aim should be to upgrade women's existing skills, not add to their workload.

It is also suggested that women only should work with women as the presence of male instructors immediately imposes a hierarchical situation where women are less willing to articulate their views.

ii. Role of the District Development Committee

Although the DDC is charged to ensure the representation of women, little evidence exists that women, especially poor women from Tharaka, are truly represented or their interests served by the DDC. It is suggested that the DDC could be more responsive to the

needs of women if two improvements were made.

Firstly, there is a need for greater representation of women on the DDC and other bodies, such as the County Council. There is one woman councillor from Tharaka. But more women leaders and spokeswomen are required.

Secondly, the DDC needs to be made more effective as a coordinating body. The survey has shown how Government and NGO tend to duplicate projects and inputs, and are drawn to certain magnet groups. Hoagland (1986) has shown how inter-organisational learning can be made more effective, particularly through cooperation between field workers. Perhaps on a Division level, such cooperations should be formalised and given greater recognition.

iii. Access to Information

In order to facilitate the coordination of development assistance to women's groups in Tharaka, it is proposed that a Women's Information Centre be set up. This should be funded by NGOs and established in Marimanti, the geographical centre of the Division. This centre would aim to exchange information and inform women of assistance available from different agencies within the area. Such a centre would act as a link between women and development agencies, and provide advice and exchange of information.

10.5 Further Research

This research has focused on women's farming groups in one Division, Tharaka, in Meru District. The groups were selected from those registered as women's self-help groups, and others identified by development personnel at Sublocation level. These groups were therefore formalised and known to government

administrators and NGO field officers. The research did not investigate other kinds of women's organisations. More needs to be known about such groups. A complete census of the different groups operating in Tharaka, comparing traditional groups and those with different origins, aims and activities may uncover opportunities for fostering alternative groups.

The research also gave little information on resource distribution within groups and exactly how women may help each other, particularly in groups with members of different ages and social and economic status. To what extent can women's groups be redistributive in terms of different resources?

Three areas are considered as priorities for further research:

1. A detailed study to identify "Alternative" groups, made up of poor women, so that more appropriate policies supporting such groups can be formulated.
2. More research is needed on the role played by women in times of drought. Particularly, what sources of income are exploited, and whether new forms of organisation and networks come into operation. If these roles can be strengthened then perhaps poorer families can be made less vulnerable to drought.
3. More information is required on how various women's organisations operate in times of drought, and whether poorer women continue to participate and benefit.

Women's farming groups are potentially able to foster self reliance among peasant farmers. In an impoverished semi-arid area they can function as a valuable mechanism in providing mutual support to women in times of contingencies. However, policy interventions formulated as a result of the experiences of groups from more fertile areas are not appropriate to those in the

dryland areas. There is a need to develop policy specifically for these areas, enabling women farmers to fully participate in all phases of identification and implementation. Only when appropriate assistance, service and input provision is implemented will poor women be able to participate in and benefit from development programmes, and gain access to and control over resources.

REFERENCES AND RESEARCH BIBLIOGRAPHY

- Abbott, S. (1975)
Women's Importance for Kenyan Rural Development.
Community Development Journal 10.3 pp179-182
- Abella, J.C., P.B. Atengdem, N.J. Beun, J.F. Mondain-Monval,
D. Ray, B.P. del Rosario, S.A. Winton (1984)
The Farming System in Tharaka: Strategies for Subsistence in a
Marginal Area of Kenya. ICRA Bulletin 15
- Abullah, T.A., and Zeidenstein, S.A. (1978)
Finding Ways to Learn About Rural Women: Experiences from a
Pilot Project in Bangladesh. Sociologia Ruralis 18 2/3 pp158-176
- Agricultural Administration (1981)
Special Issue - Rapid Rural Appraisal 8.6
- Ahmad, Z. (1980)
The Plight of Rural Women: Alternatives for Action.
International Labour Review 119.4 pp425-438
- Ahmad, Z. and M.Loutfi (1983)
Decently Paid Employment - Not More Drudgery. CERES 16.4 pp40-46
- Allison, C. (1985)
Women, Land, Labour and Survival: Getting Some Basic Facts
Straight. IDS Bulletin 16.3 pp24-29
- BDDEA (nd)
British Development Division in East Africa. Project Appraisal
Document. Kenya: Embu-Meru-Isiolo Arid and Semi-Arid Land
Development Programme Phase 2 (EMI-2)
- Barbier, E.B. (1988)
Sustainable Agriculture and the Resource Poor: Policy Issues
and Options. LEEC Discussion Paper, October 1988
- Barkan, J.D., Gachuki, F.Holmquist and S.Migot-Adholla (1980)
Is Small Beautiful? The Organisational Conditions for Effective
Smallscale Self-help Development Projects in Rural Kenya.
IDS Working Paper 364
- Barnes, C. (1983)
Differentiation by Sex Among Smallscale Farming Households in
Kenya. Rural Africana 15-16 pp41-63
- Barrett, H.R., and A.W.Brown (1989)
Time for Development? The Case of Women's Horticultural Schemes
in Rural Gambia. Scottish Geographical Magazine 105.1 pp4-11
- Bastor, N. (1981)
The Measurement of Women's Participation in Development: The
Use of Census Data. IDS Discussion Paper 159

- Beneria, L. (1981)
Conceptualising the Labour Force: The Underestimation of Women's Economic Activities. In Nelson (Ed) pp10-28
- Beneria, L. and G.L.Sen (1981)
Accumulation, Reproduction and Women's Role in Economic Development: Boserup Revisited. Signs 7.2 pp279-298
- Benor D., and J.Q.Harrison, (1977)
Agricultural Extension: The Training and Visit System. Washington DC: World Bank
- Berg, R.J. and J.S.Whitaker (1985)
Strategies for African Development. Berkeley: University of California Press
- Bernard, F.E. (1972)
East of Mount Kenya: Meru Agriculture in Transition. Afrika Studien 73. Munchen: Weltforum Verlag
- Biggs, S.D. and E.J.Clay (1981)
Sources of Innovation in Agricultural Technology. World Development 9.4 pp321-336
- Black, N., and A.B. Cottrell (1981)
Women and World Change - Equity Issues in Development. London: Sage Publications
- Boserup, E. (1970)
Women's Role in Economic Development. London: George Allen and Unwin
- Brabin, L. (1984)
Polygyny: An Indicator of Nutritional Stress in African Agricultural Societies? Africa 54.1 pp31-45
- Brokensha, D., and J.Glazier (1973)
Land Reform among the Mbeere of Central Kenya. Africa 43.3 pp182-206
- Brokensha, D., and B.W.Riley (1980)
Mbeere Knowledge of Their Vegetation and its Relevance for Development: A Case Study from Kenya
In Brokensha et al pp111-127
- Brokensha, D., D.M.Warren and O.Werner (1980)
Indigenous Knowledge Systems and Development. Washington DC: University Press of America Inc.
- Bronstein, A. (1982)
The Triple Struggle. London: War on Want Campaigns Ltd
- Brown, K. (1989)
Social and Economic Aspects of Production by Women's Potter Groups in Western Kenya. Report for ITDG Fuel for Food Programme

- Brown, K. (1985)
Labour-saving Technologies for Women in LDCs: A Study of
Woodstove Innovations. Unpublished MSc Dissertation, Department
of Agricultural Economics and Management, University of Reading
- Bryson, J.C. (1981)
Women and Agriculture in sub-Saharan Africa: Implications for
Development. In Nelson (Ed) pp29-46
- Bujra, J.M. (1978)
Female Solidarity and the Sexual Division of Labour.
In Caplan and Bujra (Eds) pp13-45
- Burfisher, M.E. and N.R. Horenstein (1983)
Incorporating Women into Agricultural Development Planning:
A Methodology. In Greenshields and Bellamy (Eds) pp161-165
- Buvinic, M. and N. Youssef (1978)
Women Headed Households: The Ignored Factor in Development
Planning. Washington DC: World Bank
- Cain, M. (1981)
Java, Indonesia: The Introduction of Rice Processing
Technology. In Dauber and Cain (Eds)
- Campbell, D.J. (1981)
Landuse Competition at the Margins of the Rangelands: An Issue
in Development Strategies for Semi-arid Areas.
In Norcliffe and Pinfold (Eds) pp39-61
- Caplan, P. (1981)
Development Policies in Tanzania - Some Implications for Women.
In Nelson (Ed) pp98-108
- Caplan, P. (1978)
Women's Organisations in Madras City, India.
In Caplan and Bujra (Eds) pp99-128
- Caplan, P., and J.M. Bujra (Eds) (1978)
Women United, Women Divided: Cross Cultural Perspectives on
Female Solidarity. London: Tavistock Press
- Carlioni, A.S. (1987)
Women in Development: AID's Experience 1973-85.
AID Program Evaluation Report no 18. Washington: USAID
- Carr, M. (1985)
The AT Reader: Theory and Practice in Appropriate Technology.
London: IT Publications
- Carr, M. (1984)
Blacksmith, Baker, Roofing-sheet Maker - Employment for Rural
Women in Developing Countries. London: IT Publications
- Carr, M. (1982)
Women and Appropriate Technology. ITDG Occasional Papers 5

- Carr, M. (1980)
Technology and Rural Women in Africa.
World Employment Research Working Papers. Geneva:ILO
- Carr, M. (1978)
Appropriate Technology for Women.
Appropriate Technology 5.1 pp4-6
- Carruthers, I., and R.Chambers (1981)
Rapid Appraisal for Rural Development.
Agricultural Administration 8.2 pp407-421
- Casley, D.J. and D.A. Lury (1987)
Data Collection in Developing Countries 2nd Edition. Oxford:OUP
- Castro, A.P., N.T.Hakansson and D.Brokensha (1981)
Indicators of Rural Inequality. World Development 9.5 pp401-427
- Chaiken, M. S. (1986)
Traditional Patterns and Modern Dilemmas: Designing Locally
Appropriate Health Interventions. IDS Working Paper 442
- Chambers, R. (1989a)
The State and Rural Development: Ideologies and an Agenda for
the 1990s. IDS Discussion Paper 269
- Chambers, R. (1989b)
Editorial Introduction: Vulnerability, Coping and Policy.
IDS Bulletin 20.2 ppl-7
- Chambers, R. (1983)
Rural Development: Putting the Last First. London:Longman
- Chambers, R. (1974)
Managing Rural Development: Ideas and Experience from East
Africa. Uppsala:Scandinavian Institute of African Studies
- Chambers, R. and R.Longhurst (1986)
Trees, Seasons and the Poor. IDS Bulletin 17.3 pp44-50
- Chambers, R., R.Longhurst and A.Pacey (Eds) (1981)
Seasonal Dimensions to Rural Poverty.
London:Frances Pinter Publishers Ltd.
- Chambers, R. and J.Moris (Eds) (1973)
Mwea: An Irrigated Rice Settlement Scheme in Kenya.
Munchen:Weltforum Verlag Afrika Studien 83
- Chambers, R., A.Pacey and L.A.Thrupp (Eds) (1989)
Farmer First: Farmer Innovation and Agricultural Research.
London:IT Publications
- Chan, S., (1983)
Young Women and Development in Africa - Some Generally
Unconsidered Considerations.
Community Development Journal 18.3 pp257-261

- Chipande, G.H.R. (1987)
Innovation Adoption among Female-headed Households: The Case of Malawi. Development and Change 18.2 pp315-327
- Cleave, J.H. (1974)
African Farmers: Labor Use in the Development of Smallholder Agriculture. New York:Praeger Publishers
- Cloud, K. (1984)
Women's Productivity in Agricultural Systems: Considerations for Project Design. In Overholt et al (Eds) ppl7-56
- Cloud, K., and C.Overholt (1983)
Women's Productivity in Agricultural Systems: An Overview. In Greenshields and Bellamy (Eds) ppl66-171
- Cohen, J.M. and R.M. Hook (1987)
Decentralised Planning in Kenya. Public Administration and Development 7 pp77-93
- Cohen, J.M. and D.B.Lewis (1987)
Role of Government in Combatting Food Shortages: Lessons from Kenya 1984-85. In Glantz (Ed) pp269-296
- Cohen, J.M. and N.T.Uphoff (1980)
Participation's Place in Rural Development: Seeking Clarity Through Specificity. World Development 8.1 pp213-235
- Crawford, E. and E.Thorbecke (1978)
Employment, Income Distribution and Basic Needs in Kenya. Report of an ILO Consulting Mission. New York:Ithaca
- Crehan, K (1984)
Women and Development in North-western Zambia: From Producer to Housewife. Review of the African Political Economy 27/28 pp51-66
- Curtis, V. (1986)
Women and the Transport of Water. London:IT Publications
- Dasgupta, B. (1977)
Village Society and Labour Use. Delhi:OUP
- Date-Bah, E. and Y.Stevens (1981)
Rural Women in Africa and Technological Change. Labour and Society 6.2 ppl49-162
- Dauber, R and M.L.Cain (1981)
Women and Technological Change in Developing Countries. AAAS Selected Symposium 53. Boulder:Westview Press
- Davison, J. (1985)
Achievements and Constraints among Rural Kenyan Women: A Case Study. Journal of Eastern African Research and Development 115 pp268-279

- Dey, J. 1981)
 Gambian Women: Unequal Partners in Rice Development Projects.
 In Nelson (Ed) pp109-122
- Dixon, R. (1978)
 Rural Women at Work - Strategies for Development in South Asia..
 Baltimore and London:John Hopkins Press
- Dixon-Mueller, R. (1985)
 Women's Work in Thrid World Agriculture: Concepts and
 Indicators. Geneva:ILO
- Due, J.M. (1988)
 Intra-household Gender Issues in Farming Systems in Tanzania,
 Zambia and Malawi. In Poats et al pp331-343
- Duncan, A. (1986)
 The Effectiveness of Aid to Kenya: A Case Study.
 IDS Bulletin 17.2 pp72-76
- Evans, A. (1989)
 Gender Issues in Rural Household Economics.
 IDS Discussion Paper 254
- Evans, A. (1988)
 Gender Relations and Technological Change: The Need for an
 Integrated Framework of Analysis. In Poats et al pp37-48
- Ellis, F. (1988)
 Peasant Economics: Farm Households and Agrarian Development.
 Wye Studies in Agricultural and Rural Development.
 Cambridge:CUP
- Eyben, R. (1983)
 Farmers Groups in Siaya. IFAD
- FAO (1984)
 Women in Agricultural Production. Rome:FAO
- FAO (1982)
 Women's groups as the Spearhead of Rural Development.
 Review of International Cooperation 75.3 pp15-18
- Fatima, B (1984)
 Rural Development and Women's Liberation: Caste, Class and
 Gender in a Grassroots Organisation In Tamil Nadu, South India.
 IDS Bulletin 15.1 pp45-50
- Feldman, R. (1984)
 Women's Groups and Women's Subordination: An Analysis of
 Policies Towards Rural Women In Kenya.
 Review of African Political Economy 27/28 pp67-85
- Fleuret, P.C. and A.K.Fleuret (1978)
 Fuelwood Use in a Peasant Community: A Tanzanian Case Study.
 Journal Of Developing Areas 12 pp315-322

- Foley, G. and P.Moss (1985)
Improved Cooking Stoves in Developing Countries.
London:Earthscan
- Foster, M. (1989)
Environmental Upgrading and Intra-Urban Migration in Calcutta.
Unpublished PhD Thesis, Institute of Planning Studies,
University of Nottingham
- Gachukia, E (1982)
Women's Self-help Efforts for Water Supply in Kenya.
Appropriate Technology 9.3 pp19-21
- George, S. (1984)
Ill Fares the Land. London:Penguin
- Ghai, D., M.Godfery and F.Lisk (1979)
Planning for Basic Needs in Kenya: Performance, Policies and
Practice. Geneva:ILO
- Ghai, D. and S.Radwan (Eds) (1983)
Agrarian Policies and Rural Poverty in Africa. Geneva:ILO
- Gibbon, D. (1987)
Restoring Regenerative Systems of Production in Sub-Saharan
Africa: Research Requirements. Disasters 11.1 pp52-58
- Gibbon, H. (1987)
Using Remote Sensing Techniques for Rural Development Planning
in Kenya: A Study in Meru District. Unpublished PhD Thesis,
Institute of Planning Studies, University of Nottingham
- Gibbon, H. (1988)
District Planning Using Recommendation Domains: A Study in
Lower Meru, Kenya. Working Paper No.6, Institute of Planning
Studies, University of Nottingham
- Gladwin, C.H., K.A.Staudt and D.E.Macmillan (1986)
Providing Africa's Women Access: One Solution to the Food
Crisis. Journal of African Studies 13.4 pp131-141
- Glantz, M. (Ed) (1987)
Drought and Hunger in Africa. Cambridge:CUP
- Gomez, A.A. (1986)
The Role of Crops in Food Systems.
In Mann and Huddleston (Eds) pp26-34
- Goody, J. (1976)
Production and Reproduction. Cambridge:CUP
- Goulet, D. (1977)
The Uncertain Promise: Value Conflicts in Technology Transfer.
New York:IDOC
- Graham, O. (1989)
A Land Divided: The Impact of Ranching in a Pastoral Society.
Ecologist 19.5 pp184-185

- Greenshields, M. and A. Bellamy (Eds) (1983)
Rural Development: Growth and Equity. Papers of the 18th
International Conference of Agricultural Economists.
IAAE Occasional Papers 13
- Guyer, J. (1986)
Intra-household Processes and Farming Systems Research:
Perspectives from Anthropology. In Mook (Ed) pp92-104
- Hafkin, N. and E. Bay (Eds) (1976)
Women in Africa: Studies in Economic and Social Change.
Stanford University Press
- Hamer, J.H. (1981)
Preconditions and Limits in the Formation of Associations:
The Self-help and Cooperative Movement in Sub-Saharan Africa.
African Studies Review 24.1 pp113-132
- Hanger, J. and J. Moris (1973)
Women in the Household Economy.
In Chambers and Moris (Eds) pp209-244
- Hansen, A. (1988)
Correcting the Underestimated Frequency of the Head of
Household Experience for Women Farmers.
In Poats et al (Eds) pp111-126
- Harris, O. (1982)
Questions on Household and its Role in Research.
IDS Development Research Register Winter 1982 pp23-28
- Harris, O. (1981)
Households as Natural Units. In Young et al (Eds) pp49-68
- Harriss, J. (1982a)
General Introduction. In Harriss (Ed) pp15-34
- Harriss, J. (Ed) (1982b)
Rural Development; Theories of Peasant Economy and Agrarian
Change. London: Hutchinson
- Hartmann, B. and J.K. Boyce (1983)
A Quiet Violence: View from a Bangladesh Village.
London: Zed Press
- Haugerud, A. (1984)
Household Economics and Rural Political Economy Among Embu
Farmers in the Kenyan Highlands. Unpublished PhD Thesis,
Northwestern University
- Henn, J.K. (1988)
Intra-Household Dynamics and State Policies as Constraints on
Food Production: Results of a 1985 Agro-Economic Survey in
Cameroon. In Poats et al (Eds) pp315-330
- Henn J.K. (1983)
Feeding the Cities and Feeding the Peasants: What Role for
Africa's Women Farmers. World Development 11.12 pp1043-1055

- Herz, B. (1989)
Women in Development: Kenya's Experience.
Finance and Development June 1989 pp43-45
- Heyer, J., J.K.Maitha and W.M.Senga (Eds) (1976)
Agricultural Development in Kenya: An Economic Assessment.
Nairobi:OUP
- Hildebrand, P.E. (1981)
Combining Disciplines in Rapid Appraisal: The Sondeo Approach.
Agricultural Administration 8.6 pp423-432
- Hoagland, S.H. (1986)
Cross-pollination: Inter-organisational Learning in Kenyan Tree
Planting Programmes. IDS Working Paper 443
- Hogg, R. (1988)
Water Harvesting and Agricultural Production in Semi-arid Kenya
Development and Change 19.1 pp69-87
- Hogg, R. (1986)
The New Pastoralism: Poverty and Dependency in Northern Kenya.
Africa 56.3 pp319-333
- Hogg, R. (1984)
The Politics of Drought: The Pauperisation of the Isiolo Basin.
Manchester Discussion Papers in Development Studies.
International Development Centre, University of Manchester
- Hogg, R. (1980)
Pastoralism and Impoverishment: The Case of the Isiolo Boran of
Northern Kenya. Disasters 4.3 pp299-310
- Holmquist, F. (1984)
Self-help: The State and Peasant Leverage in Kenya.
Africa 54.3 pp72-91
- Holmquist, F. (1979)
Class Structure, Peasant Participation and Rural Self-help.
In Barkan and Okumu (Eds) pp129-153
- Holmquist, F. (1972)
Toward a Political Theory of Rural Self-help Development in
Africa. Rural Africana 18 pp60-79
- House, W.J. and T.Killick (1983)
Social Justice and Development Policy in Kenya's Rural Economy.
In Ghai and Radwan (Eds) pp31-70
- Howes, M. (1980)
The Uses of Indigenous Technical Knowledge in Development.
In Brokensha et al pp335-351
- Howes, M. and R.Chambers (1980)
Indigenous Technical Knowledge: Analysis, Implications and
Issues. In Brokensha et al pp323-334

- Hudgens, R.E. (1988)
A Diagnostic Survey of Female Headed Households in the Central Province of Zambia. In Poats et al pp373-387
- Hunt, D. (1984)
The Impending Crisis in Kenya: The Case for Land Reform.
Guildford:Gower Publishing Company Ltd
- Hunt, D. (1974)
Agricultural Innovation in Mbeere. IDS Working Paper 166
- Hyden, G. (1986)
African Social Structure and Economic Development.
In Berg and Whitaker (Eds) pp52-80
- Hyden, G. (1983)
No Shortcuts to Progress: African Development Management in Perspective. London:Heinemann
- IDS (1986)
IDS Bulletin 17.3 Seasonality and Poverty
- IIED (1989)
Annual Report 1988-89. London:IIED
- IPS (1986)
District Development Plan for Meru District, Kenya. Report prepared for District Development Planning course, Institute of Planning Studies, University of Nottingham, March 1986
- IRRI (1985)
Report of Project Design Workshop on Women in Rice Farming Systems. April 1985
- Jaetzold, R. and H.Schmidt (1983)
Farm Management Handbook of Kenya Volume II/C East Kenya.
Nairobi:Ministry of Agriculture and GTZ
- Jiggins, J. (1986)
Women and Seasonality: Coping with Crisis and Calamity.
IDS Bulletin 17.3 pp9-18
- Jiggins, J. (1985a)
Rural Women, Money and Financial Services.
Community Development Journal 20.3 pp163-175
- Jiggins, J. (1985b)
Eastern, Central and Southern Africa: New Directions. Reports from the Grassroots on Some Development Efforts by and for Women. RRDC Bulletin September 1985 pp9-13
- Jiggins, J. (1984)
Rhetoric and Reality: Where do Women in Agricultural Development Projects Stand Today: The Word Bank's View.
Agricultural Administration 15 pp157-175
- Jolly, R. and G.Cornia (1984)
The Impact of the World Recession on Children. Oxford:Pergamon

- Jones, C. (1986)
Intra-household Bargaining in Respose to the Introduction of
New Crops: A Case Study from Northern Cameroon.
In Mook (Ed) pp105-123
- Jones, C. (1983)
Women's Labour Allocation and Irrigated Rice Production in
Northern Cameroon. In Greenshields and Bellamy (Eds) pp172-180
- Kandiyoti, D. (1988)
Women and Rural Development Policies: The Changing Agenda.
IDS Discussion Paper 244
- Kandiyoti, D. (1985)
Women in Rural Production Systems: Problems and Policies.
Paris:UNESCO
- Kariuki, P. (1985)
Women's Aspirations and Perceptions of their own Situation in
Society. Journal of Eastern African Research and Development 15
pp222-229
- Kayongo-Male, D. (1985)
Problems and Perspectives of Integrating Women into Development
Planning Process in Kenya. Journal of Eastern African Research
and Development 15 pp280-296
- Kayongo-Male, D. (1983)
Helping Self-help Groups to Help Themselves: Training Leaders
of Women's Groups. Journal Of Eastern African Research and
Development 13 pp88-103
- Keller, E.J. (1983)
Development Policy and Evaluation of Self-help: The Harambee
School Movement in Kenya. Studies in Comparative International
Development 18.4 pp53-75
- Kennedy, E. and B.Cogill (1988)
The Commercialisation of Agriculture and Household-level Food
Security: The Case of Southwestern Kenya.
World Development 16.9 pp1075-1081
- Kenya National Council for Social Services (1986)
Women's Group Projects, 1986. KNCSS:Nairobi
- Kershaw, G. (1976)
The Changing Role of Men and Women in the Kikuyu Family by
Socio-Economic Strata. Rural Africana 29 pp173-194
- Killick, T. (Ed) (1981)
Papers on the Kenyan Economy. Nairobi:HEB
- Kitching, G. (1980)
Class and Economic Change in Kenya.
New Haven:Yale University Press

- Kongstad, P. and M.Monsted (1980)
Family, Labour and Trade in Western Kenya.
Uppsala:Scandanavian Institute of African Studies
- Kraus, M. (1986)
Planning in Kenya's Meru District: A Sociologist's Experience
as an IRRD Team Member. KIDMA 9 2/3 pp50-52
- Lapido, P. (1981)
Developing Women's Cooperatives: An Experiment in Rural Nigeria
Journal of Development Studies 17.3 pp123-136
- Lele, U. (1975)
The Design of Rural Development.
Washington DC:John Hopkins University Press
- Leon, M. (1984)
Measuring Women's Work: Methodological and Conceptual Problems
in Latin America. IDS Bulletin 15.1 pp12-17
- Leonard, D.K. (1977)
Reaching the Peasant Farmer - Organisation, Theory and Practice
in Kenya. London:University of Chicago Press
- Leonard, D.K. and D.R.Marshall (Eds) (1982)
Institutions of Rural Development for the Poor.
Berkeley:University of California
- Leys, C. (1975)
Underdevelopment in Kenya: The Political Economy of
Neocolonialism. London:Heinemann
- Lipton, M. (1982)
Why Poor People Stay Poor. In Harriss (Ed) pp66-81
- Livingstone, I. (1986)
Rural Development, Employment and Incomes in Kenya.
Aldershot:Gower Publishing Co. Ltd
- Little, P.D. and M.M.Horowitz (1987)
Subsistence Crops are Food Crops: Some Comments with Reference
to Eastern Africa. Human Organisation 46.3 pp254-258
- Llewelyn-Davies, M. (1978)
Two Contexts of Solidarity among Pastoral Maasai Women.
In Caplan and Bujra (Eds) pp206-237
- Loutfi, M.F. (1980)
Rural Women: Unequal Partners in Development. Geneva:ILO
- Low, A. (1985)
Agricultural Development in Southern Africa.
London:James Curry Publishers
- Maas, M. (1986)
Its Always a Good Thing to Have Land. Leiden:African Studies
Centre, Research Report 26

- Maathai, W. (1986)
Protecting Africa's Forests. *Everywoman* 12 pp16-17
- MacKenzie, F. (1986)
Local Initiatives and National Policy: Gender and Agricultural Change in Murang'a District, Kenya.
Canadian Journal of African Studies 20.3 pp377-401
- MacKenzie, F. and D.R.F.Taylor (1987)
District Focus as a Strategy for Rural Development in Kenya: The Case of Murang'a District, Central Province.
Canadian Journal of Development Studies 8.2 pp299-316
- Mann, C.J. and B.Huddleston (1986)
Food Policy: Frameworks for Analysis and Action.
Indiana University Press
- Mathur, H.M. (1988)
Enhancing Effectiveness of Development Programmes for Small Farmers.
Agricultural Administration and Extension 29.3 pp197-209
- Matthiessen, P. (1972)
The Tree Where Man was Born. London:Picador
- Mbithi, P. and R.Rasmusson (1977)
Self-Reliance in Kenya: The Case of Harambee.
Uppsala:Scandinavian Institute of African Studies
- Mbithi, P. and B.Wisner (1973)
Famine in Kenya: Magnitude and Attempted Solutions. *Journal of Eastern African Research and Development* 3.2 pp113-143
- McCall, M. (1988)
The Implications of East African Social Structure for Local Level Development: The Case for Participatory Development Based on Indigenous Knowledge Systems.
Regional Development Dialogue 9.2 pp41-72
- Mead, M. (1975)
A Comment on the Role of Women in Agriculture.
In Tinker, Bransen and Buvinic (Eds) pp9-11
- Maunder, A.E. (1972)
Agricultural Extension, A Reference Manual. Rome:FAO
- Meghji, Z. (1985)
Women's Coops - Some Realities Affecting Development in Tanzania. *Community Development Journal* 20.3 pp185-188
- Mencher, J. (1986)
Women and Agriculture. In Mann and Huddleston (Eds) pp34-49
- Mitchnik, D.A. (1977)
The Role of Women in Rural Zaire and Upper Volta. Geneva:ILO

- Monsted, M. and P.Walji (1978)
A Demographic Analysis of East Africa: A Sociological Interpretation.
Uppsala:Scandanavian Institute of African Studies
- Moock, J.L. (1986a)
Introduction. In Moock (Ed) ppl-10
- Moock, J.L. (Ed) (1986b)
Understanding Africa's Rural Households and Farming Systems.
Boulder:Westview Press
- Moock, P.R. (1976)
The Efficiency of Women as Farm Managers: Kenya.
American Journal of Agricultural Economics 58.5 pp831-835
- Moore, H.L. (1988)
Feminism and Anthropology. Cambridge:Polity Press
- Morgan, R (Ed) (1984)
Sisterhood is Global: The International Women's Movement
Anthology. Middlesex:Penguin Books
- Mullins, L. (1976)
Women and Economic Change in Africa.
In Hafkin and Bay (Eds) pp239-264
- Munroe, M. (1988)
Building on Gender Awareness. The Policy and Practice of Rural
Extension for Women. RRDC Bulletin 24 pp31-34
- Muzaale, P.J. (1988)
The Organisation and Delivery of Social Services to Rural
Areas. Journal of Social Development in Africa 3.2 pp33-48
- Muzaale, P.J. and D.K.Leonard (1985)
Kenya's Experience with Women's Groups in Agricultural
Extension: Strategies for Accelerating Improvements in Food
Production and Nutritional Awareness in Africa.
Agricultural Administration 19 ppl3-28
- Mwaniki, N. (1986)
Against Many Odds: The Dilemmas of Women's Self-help Groups in
Mbeere, Kenya. Africa 56.2 pp210-227
- Nelson, N. (Ed) (1981a)
African Women in the Development Process. London:Frank Cass
- Nelson, N. (1981b)
Mobilising Village Women: Some Organisational and Management
Considerations. Journal of Development Studies 17.3 pp47-58
- Nelson, N. (1978)
Women Must Help Each Other: The Operation of Personal Networks
Among Buzaa Beer Brewers in Mathare Valley, Kenya.
In Caplan and Bujra (Eds) pp77-98
- New Internationalist (1985)

- Women: A World report. London:Methuen
- Newland, K. (1980)
Women, Men and the Division of Labour. Worldwatch Paper 37
- Ngau, P.M. (1987)
Tensions in Empowerment: The Experience of The Harambee (Self-Help) Movement in Kenya.
Economic Development and Cultural Change 35.3 pp523-538
- Njonjo, A. (1981)
The Kenyan Peasantry: A Reassessment.
Review of African Political Economy 20 pp27-40
- Norcliffe, G. and T.Pinfold (Eds) (1981)
Planning African Development. London:Croom Helm
- Norem, R.H. (1988)
Integration of Intra-Household Dynamics into Farming Systems Research and Extension: A Survey of Existing Projects.
In Poats (Ed) pp19-35
- Oakley, P. and D.Marsden (1984)
Approaches to Participation in Rural Development. Geneva:ILO
- O'Brien, M. (1985)
The Maize Grinding Mill at Sinon.
Community Development Journal 20.3 pp188-191
- ODA (1986)
The Agricultural Dilemma in Africa. London:ODI
- O'Keefe, P. and C.Juma (1982)
Kenya: See How They Move. Populi 9.3 pp44-48
- O'Kelly, E. (1982)
Women's Organisations: Their Vital Role in Development.
Appropriate Technology 9.3 pp16-18
- O'Kelly, E. (1977)
The Use of Appropriate Technology to Help Rural Women.
Appropriate Technology 4.2 pp20-21
- O'Leary, M. (1983)
Population, Economy and Domestic Groups - The Kitui Case.
Africa 53.1 pp64-76
- O'Leary, M. (1980)
Responses to Drought in Kitui District, Kenya
Disasters 4.3 pp315-327
- Ombina, K. and N.May (1985)
Progress Through Piggeries and Prejudice in Kenya.
Community Development Journal 20.3 pp191-194

- Omolo, A.O. (1982)
 Outreach Programmes for Training Frontline Extension Workers -
 A Case Study in Kenya. In FAO, Training for Agriculture and
 Rural Development pp33-37
- Onyango, C.A. (1987)
 Making Extension Effective in Kenya: The District Focus for
 Rural Development.
 In Rivera, W.M. and S.G.Schram (Eds) ppl49-162
- Opondo, D. (1980)
 A Women's Group in Kenya and its Struggle to Obtain Credit.
 Assignment Children 49/50 ppl27-139
- Overholt, C., M.B.Anderson, K.Cloud and J.E.Austin (Eds) (1985)
 Gender Roles in Development Projects.
 West Hartford:Kumarian Press
- Oyugi, W.O. (1981)
 Rural Development Administration: A Kenyan Experience.
 New Delhi:Vikas Publishing House
- Oyugi, W.O. (1975)
 Decentralisation for Integrated Rural Development: Some Lessons
 from Kenya. IDS Working Paper 255
- Pala, A.O. (1988)
 The Role of Women in Eastern African Rural Development.
 Regional Development Dialogue 9.2 pp89-104
- Pala, A.O. (1983)
 Women's Access to Land and Their Role in Agriculture and
 Decision Making on the Farm - The Experiences of the Joluo of
 Kenya.
 Journal Of Eastern African Research and Development 13 pp69-87
- Pala, A.O. (1980)
 Land Reform in Joluo -Lower Status for Women. CERES 75 pp36-41
- Pala, A.O. (1975a)
 The Role of African Women in Rural Development: Research
 Priorities. Journal of Eastern African Research and Development
 5.2 ppl37-161
- Pala, A.O. (1975b)
 A Preliminary Survey of the Avenues for and Constraints on
 Women in the Development Process in Kenya.
 IDS Discussion Paper 218
- Pala, A.O., J.E.Reynolds, M.A.H.Wallis and D.L.Browne (1975)
 The Women's Group Programme in the SRDP.
 IDS Nairobi Occasional Paper 13
- Palmer, I. (1981a)
 Seasonal Dimensions of Women's Roles.
 In Chambers, Longhurst and Pacey (Eds) ppl95-201

- Palmer, I. (1981b)
Women, Food Chains and Agrarian Reform. Rome:FAO
- Palmer, I. (1977)
Rural Women and the Basic Needs Approach to Development.
ILO Review 115.1 pp97-107
- Patton, M.Q. (1984)
Data Collection: Options, Strategies and Cautions.
In Rutman, pp39-64
- Pearse, A. (1980)
Seeds of Plenty, Seeds of Want. Oxford: Clarendon Press
- Pearse, A. and M.Steifel (1979)
Inquiry into Participation: A Research Approach. Geneva:UNRISD
- Peil, M., with P.K.Mitchell and D.Rimmer (1982)
Social Science Research Methods. An African Handbook.
London:Hodder and Stoughton
- Peters, P. (1983)
Gender, Development Cycles and Historical Process: A Critique
of Recent Research on Women in Botswana.
Journal of Southern African Studies 10.1 pp83-105
- Peterson, S.B. (1982)
Alternative Organisations Supporting the Agricultural
Development of the Poor. In Leonard and Marshall pp125-150
- Pino, J.A. (1986)
Livestock in Agricultural Systems.
In Mann and Huddleston pp35-38
- Poats, S.V., M.Schmink and A.Spring (Eds) (1988)
Gender Issues in Farming Systems Research and Extension
Boulder:Westview Special Studies in Agricultural Science and
Policy
- Pratt, B. and J.Boyden (Eds) (1985)
The Field Directors' Handbook - An Oxfam Manual for Development
Workers. Oxford:OUP
- Presvelon, C. (1975)
The Invisible Woman. CERES 8.2 pp50-60
- Raintree, J.B. (Ed) (1987)
D&D Users Manual - An Introduction to Agro-forestry Diagnosis
and Design. Nairobi:ICRAF
- Redclift, M. (1984)
Development and the Environmental Crisis. London:Methuen
- Redclift, N. (1984)
The Contested Domain: Gender, Accumulation and the Labour
Process. In Redclift, N. and E.Mingione (Eds) pp92-125

- Redclift, N. and E.Mingione (Eds) (1984)
Behind Employment: Household, Gender and Subsistence.
Oxford:Basil Blackwell
- Republic of Kenya (1988)
Meru District Development Plan 1989-93. Ministry of Planning and
National Development. Nairobi:Government Printers
- Republic of Kenya (1987)
District Focus for Rural Development (revised 1987). Office of
the President. Nairobi:Government Printers
- Republic of Kenya (1986a)
Economic Management for Renewed Growth. Sessional Paper No 1
1986. Nairobi:Government Printer
- Republic of Kenya (1986b)
Meru District Socio-cultural Profile. Ministry of Planning and
National Development and Institute of African Studies,
University of Nairobi.
- Republic of Kenya (1984)
Women in Kenya. Social Perspectives, Central Bureau of
Statistics. Nairobi:Government Printer
- Republic of Kenya (1983a)
Meru District Development Plan 1984-88. Ministry of Finance and
Planning. Nairobi:Government Printers
- Republic of Kenya (1983b)
District Focus for Rural Development. Office of the President.
Nairobi:Government Printers
- Republic of Kenya (1982)
Report and Recommendations of the Working Party on Government
Expenditures. Chair:Philip Ndegwa. Nairobi:Government Printer
- Republic of Kenya (1979)
Arid and Semi-arid Lands Development. Nairobi:Government Printer
- Republic of Kenya (1978)
Human Settlements in Kenya. A Strategy for Urban and Regional
Development. Ministry of Lands and Settlements.
Nairobi:Government Printer
- Republic of Kenya (1977)
Central Bureau of Statistics. Kenya Integrated Rural Survey
1974-75
- Rhoades, R. and R.Booth, R.Shaw and R.Werge (1985)
The Role of Anthropologists in Developing Improved Technologies
Appropriate Technology 11.4 pp11-13
- Richards, P. (1985)
Indigenous Agricultural Revolution. London:Hutchinson

- Richards, P. (Ed) (1975)
African Environment: Problems and Perspectives.
London:International African Institute
- Richie, J.A.S. (1977)
Training Women For Development
FAO Training for Agriculture and Rural Development 1977
- Riria Ouko, J.V.N. (1985)
Women's Organisations in Kenya.
Journal of Eastern African Research and Development 15 ppl88-197
- Riria, J.V.N. (1983)
What Kenyan Women Want.
Journal of Eastern African Research and Development 13 pp55-68
- Rivera, W.M. and S.G.Schram (Eds) (1987)
Agricultural Extension Worldwide. New York:Croom Helm
- Roberts, H. (1981)
Doing Feminist Research. London:Routledge and Kegan Paul
- Roberts, J.T. (1986)
Economic, Social and Institutional Constraints. In ODA pp38-48
- Rogers, B. (1980)
The Domestication of Women: Discrimination in Developing Societies. London:Tavistock
- Rogers, B. (1979)
What do Women Want?. Appropriate Technology 5.4 pp8-9
- Rogers, E.M. and F.F.Shoemaker (1971)
Communication of Innovations. New York:The Free Press
- Roling, N. (1984)
Appropriate Opportunities as Well as Appropriate Technology.
CERES 97 ppl5-19
- Rutman, L. (1984)
Evaluation Research Methods: A Basic Guide.
London:Sage Publications
- Safai, N. (1984)
The Impact of Rural Development Policies on Women with Special Reference to Africa. Unpublished MA Dissertation, Institute of Planning Studies, University of Nottingham
- Safilios-Rothschild, C. and E.K.Mburugu (1986)
Women's Income and Fertility in Rural Kenya.
IDS Working Paper 441
- Safilios-Rothschild, C. (1985)
The Persistence of Women's Invisibility in Agriculture:
Theoretical and Policy lessons from Lesotho and Sierra Leone.
Economic and Social Change 33.2 pp299-318

- Savara, M. (1981)
Organising the Annapurna. IDS Bulletin 12.3 pp48-53
- Schonherr, S. and E.S.Mbugua (1976)
Managing Extension Staff - Two Experiments in Kenya.
IDS Discussion Paper 230
- Schumacher, E.F. (1974)
Small is Beautiful. London:Shere Books
- Scott, G. (1982)
Forestry Projects: How Women Can Help and Help Themselves.
Appropriate Technology 9.2 ppl3-15
- Seidman, A. (1981)
Women and the Development of Underdevelopment.
In Dauber and Cain (Eds)
- Silva, G.L. (1984)
Report on a Visit to Kenya.
ODA Land Resources Development Centre
- Singer, H.W. and S.D.Reynolds (1976)
Aspects of the Distribution of Income and Wealth in Kenya.
In UNESCO ppl61-197
- Sinha, F. (1983)
Women, Work and Technology in Rural South Asia.
ITDG Occassional Paper 9
- Smock, A.C. (1981)
Women's Economic Roles. In Killick (Ed) pp219-227
- Spens, T. (1986)
Studies on Agricultural Extension Involving Women.
UNIFEM Occassional Paper 3
- Sperling, L. (1987)
Food Acquisition during the African Drought of 1983-84: A Study
of Kenyan Herders. Disasters 11.4 pp263-271
- Spring, A. (1988)
Using Male Research and Extension Personnel to Target Women
Farmers. In Poats et al pp407-426
- Stamp, P. (1975)
Perceptions of Change and Economic Strategy among Kikuyu Women
of Mitero, Kenya. Rural Africana 29 ppl6-43
- Staudt, K. (1985a)
Agricultural Policy Implementation: A Case Study from Western
Kenya. West Hartford:Kumarian Press
- Staudt, K. (1985b)
A Planning Centred Approach to Project Evaluation: Women in
Mainstream Development Projects.
Public Administration and Development 5 pp25-37

- Staudt, K. (1978a)
Agricultural Productivity Gaps: A Case Study of Male Preference in Government Policy Implementation.
Development and Change 9.3 pp439-457
- Staudt, K. (1978b)
Administrative Resources, Political Patrons and Redressing Sex Inequalities: A Case from Western Kenya.
Journal of Developing Areas 12
- Staudt, K. (1975)
Women Farmers and Inequalities in Agricultural Services.
Rural Africana 29 pp81-94
- Staudt, K. (1974)
The Effects of Government Agricultural Policy on Women Farmers in Kenya: A Research Proposal. IDS Working Paper 200
- Sternkenburg, J.J., M.C.Herlaar, J.R.van Iterson and A.Jansen (1986)
Rural Housing Conditions in Meru district, Kenya.
Department of Geography of Developing Countries, University of Utrecht, and the Housing Research and Development Unit, University of Nairobi
- Stewart, F. (1977)
Technology and Underdevelopment. London:Methuen
- Strichter, S. (1976)
Women and the Labour Force in Kenya 1895-1964.
Rural Africana 29 pp45-67
- Sutherland, A.J. (1988)
The Gender Factor and Technology Options for Zambia's Subsistence Farming Systems. In Poats et al pp389-406
- Thomas, B. (1980)
The Harambee Self help Experience in Kenya.
Rural Development Participation Review 1.3 ppl-5
- Thomas, B. (1979)
Rural Development through Local Initiatives: An Assessment of Kenya's Experience with Harambee Projects in Selected Rural Communities. IDS Working Paper 354
- Thrupp, L. (1984)
Women, Wood and Work in Kenya and Behond. Unasylya 146 pp37-43
- Tinker, I., M.B.Bramsen and M.Buvinic (Eds) (1975)
Women in World Development
New York:Praeger Publishers
- Todaro, M. (1981)
Economic Development in the Third World. London:Longman
- Uphoff, N. and J.Cohen (1979)
Feasibility and Application of Rural Development Participation.
Cornell University

- UNESCO (1979)
The Use of Socio-Economic Indicators in Development Planning.
Paris:UNESCO
- UNICEF (1984)
The State of the World's Children 1985. New York:OUP
- Watchel, E. (1976)
A Farm of One's Own: The Rural Orientation of Women's Group
Enterprises in Nakuru, Kenya. Rural Africana 29 pp69-80
- Walsh, M. (1985)
1984: A Year of Growth and New Challenges.
1984 Annual Report of Women's World Banking, New York
- Watanabe, S. (1980)
Institutional Factors, Government Policies and Appropriate
Technologies. International Labour Review 119.2 pp167-184
- Webster, C.C., and P.N.Wilson (1980)
Agriculture in the Tropics. London:Longman
- Weidemann, C.J. (1987)
Designing Agricultural Extension for Women Farmers in
Developing Countries. In Rivera and Schram (eds) pp175-198
- White, B. (1984)
Measuring Time Allocation, Decision Making and Agrarian Changes
Affecting Rural Women: Examples from Recent Research in
Indonesia. IDS Bulletin 15.2 pp18-32
- Whitehead, A. (1984)
Women's Solidarity - and Divisions among Women.
IDS Bulletin 15.1 pp6-11
- Whitehead, A. (1984)
"I'm Hungry Mum": The Politics of Domestic Budgeting.
In Young et al (Eds) pp88-111
- Wiggins, S. (1986)
The EMI Programme. In ODA pp51-61
- Wiggins, S. (1985)
The Planning and Management of Integrated Rural Development in
Drylands: Early Lessons from Kenya's Arid and Semi-arid Lands
Programmes. Public Administration and Development 5.2 pp91-108
- Wipper, A. (1976)
The Maendeleo ya Wanawake Movement in the Colonial Period: The
Canadian Connection, Mau Mau, Embroidery and Agriculture.
Rural Africana 29 pp195-214
- Wisner, B. (1988)
Power and Need in Africa. London:Earthscan
- Wisner, B. (1977)
Construction of a Livelihood System: The Peasants of Tharaka
Division, Meru District, Kenya. Economic Geography 53 pp353-7

Working Party Parliamentary Group on Overseas Development (1985)
UK Aid to African Agriculture. London:ODI

World Bank (1979)
Recognising the Invisible Woman in Development: The World
Bank's Experience. Washington:The World Bank

World Commission on Environment and Development (1987)
Our Common Future. Oxford:OUP

WRAP (forthcoming)
District Water Development Plan: Water Demand and Water
Resources. Water Resources Assessment and Planning, Ministry of
Water Development and TNO, Institute of Applied Geoscience,
Delft, Netherlands

Young, K., C.Wolkowitz, and R.McCullagh (Eds) (1981)
Of Marriage and the Market: Women's Subordination in
International Perspective. London:CSE Books

Youssef, N. and M.R.Hollsteiner (1983)
Technology, Income and Organisation: Communicating Change to
Women. Assignment Children 63/64 pp69-83

APPENDIX 1

WOMEN'S FARMING GROUPS IN THARAKA: THE SURVEYED GROUPS

KAMANYAKI SUBLOCATION

Kamanyaki Sublocation lies in the extreme south west of Tharaka. The Tana River forms the southern border of the Sublocation, and of Meru District. This area is very dry. The name, Kamanyaki, means "place of grass".

The main market is Kamarandi, about 10 Km from Chiakariga. Communications in Kamayaki are extremely bad. There are no matatus. The only dispensary is at a mission school at Materi, about 5 Km from Chiakaria, and women have to walk to there whenever they are sick. Women in the area highlighted the lack of transport, lack of health facilities, and water availability as main problems.

The land is not so intensively farmed though is of bad quality, almost exclusively Zone V. The area slopes down towards the River Tana in the south and east, where temperatures get increasingly high, and land drier more barren. There are fewer trees in this part of the Sublocation, but there is a lot of rough bush.

GROUP 01

This group is situated in a remote, dry area at Mbacaca, 4 hours walk from Chiakariga. The group was started in 1981 with 44 members. It was registered in 1982. There are now 26 members. The group has a shamba of 1.5 acres; the land was given to them by a friend in 1987. They grow green grams, millet and sorghum. All the produce is sold and at the moment the group is saving money to stock a canteen which they constructed in 1984. The group originally started saving money collected from members. They meet on their shamba each Sunday after the church service. The group has a bakery, a canteen, and a fenced compound and house for their goats. The group keeps 56 goats. EMI had given them 8 Galla bucks, but 7 have died so only one remains. The group does not use the bakery because they cannot afford the flour to bake with.

The group has received a number of visits, and assistance from a variety of different organisations. The group was visited by the CDA in 1983 and 1984, and by the agricultural extension officer in 1984. EMI and CANSAGE are more regular visitors and have supported the group in a number of ways. CANSAGE provided a grant of 11000/= in 1984 which enabled the group to build the bakery and open their canteen. The group was given jembes by the agricultural officer in 1984. EMI fenced their compound, provided materials for the goat house, and provided the Galla bucks.

The group lacks capital to stock the canteen and use the bakery, and availability of water is a major problem. However, despite being reasonably poor, and living in a particularly remote and impoverished area, the group is well supported by outside

agencies. It appears to be what has been described as a magnet group.

GROUP 02

The group meets at Mpunja, about 10Km from Kamarandi, in Kamanyaki Sublocation. This is a very dry, remote and cut off area of Tharaka. The group is not registered, and started in 1984 with nine members. There are now twelve members. The group members work on each others' land, particularly with weeding. The members save money to buy goats for each other, and to help with school fees and at other times when lump sums are needed. This year, the group has been given a one acre plot at Mpunja, and will plant it next season with millet and sorghum.

The group has not received any assistance from government or NGO. The EMI Women's Group Coordinator has visited the group, but has not offered advice or inputs. The group needs tools, including pangas and jembes, and access to water. The group has many long term plans; initially to plant cotton to provide an income from their plot, to invest in goats, and eventually to open a shop at Mpunja.

The women from the group appear quite poor. The chairlady is aged 38, has 8 children, three of whom are in primary school. Her husband is a pastor who travels around the area. They also have a small shop at Kamarandi Market. She farms 2 acres at Mpunja, about one hours walk from Kamarandi, where millet and sorghum, cow peas and green grams are grown. The main source of income for the family is selling goats, and the main expenses are buying food and clothes. The respondent needs help to dig terraces on her farm, jembes and labour. She is also a member of another women's group in Kamanyaki. The member interviewed is aged 20. She has a small child, and her husband works in Nairobi. Her main sources of income are remittances from her husband, and from selling cotton. The respondent farms two plots, totaling four acres, uses fertilisers on sunflower, pesticides on green grams, cow peas, sunflower and cotton, and manure on all crops grown. Improved seeds are used for green gram. Cassia trees were planted in 1984. The respondent is responsible for all work on the farm herself. She speaks English. The family's main expense is buying maize. She has never been visited by the Agricultural Extension Officer.

GROUP 03

Also based at Mpunja, about 4 hours walk from Chiakariga, the group was started in 1978, and meets at Kamburu Church. There are currently 10 members, and the group registered in 1985. The group farms a 2 acre plot, given by one of the members. They grow cotton, sunflower and sorghum. Neither the cotton nor sunflower did very well. The group has been visited by the EMI Women's group Coordinator, and received six jembes from EMI this year. The group wants a loan to build a store. Otherwise the group has had no contact with any other agencies. The main advantages of the group are to help members in contingencies; for example to buy medicine if a member is ill, to fetch water and help with shamba work.

The secretary of the group comes from Embu, and at 28, is a second wife and has 2 children. She farms 3 acres with no help from other household members, growing millet, sorghum and cow peas. Her main source of income is when she does casual farm work. Food and clothes are main expenses. Her farm has received no extension visits, uses no improved seeds or chemicals. However, she would like to be able to use improved seeds for maize, green grams and cow peas. Water availability is a big problem; it takes 2 hours a day to collect water. The member interviewed farms 4 acres; she has 8 children, and a total of 14 live in her household, including parents in law, one brother and a sister. She is involved in the local Pentecostal Church, and the family run a shop at Kamarandi. Member agreed that the main advantage of group was in contingencies; particularly when members were ill.

GROUP 04

The group was started and registered in 1982 with 5 members; now there are 12 members. The group is based at a village about 30 minutes walk from Kamarandi, and seems to be made up of very poor, elderly women. The group meets one day a week on their shamba which was given to them by "friends" (allocated by the clan) some years ago. They grow cow peas and green grams which they sell and save money. The group has bought local goats and chickens for the members. The group has received a visit from EMI Women's Group Coordinator, and was given 2 jembes from the DO. They need help to dig terraces on their shamba, and would like to be able to raise enough money to build a shop at Kamarandi, or buy a posho mill. The group also raises money through working on farms, and is able to help members in times of hunger, and in paying school fees.

The Chairlady of the group is 55 years old, and has 4 children, three of whom are in primary school. She farms 4 acres, and an adult son a further 3 acres. She grows millet and sorghum, green grams and cotton, using improved seed for millet and green grams. Farm work is shared with her husband, with the group helping with harvesting and processing. The household's main income comes from goat sales; main expenses are school fees, food, and clothes. The family has to buy maize. The main constraints are labour during weeding. This is confirmed by a member, who says she wants help to dig terraces on her farm. Aged 50, 3 acres farmed by her and husband support a household of 9 people. No cash crops are grown, no improved seeds or inputs used, although cassia trees were planted in 1986. Husband and wife share farming tasks, and their only income comes from weeding on local farms. Their expenses are food; they buy maize, beans and green grams, and necessities like salt, soap and cooking fat. Water availability is a big problem, this member says it takes 4 hours a day to collect water for the family.

This group can be thought of as representing a more "traditional" group; The group raises money through farm work, and helps members with farm work, and in providing mutual aid at times of contingencies.

GROUP 05

The group started in 1985 with 8 members and now has 15. It is not registered. The group meets at its shamba close to Kamarandi. The Chairlady of the group gave the land, 3 acres, where they grow sorghum and green grams. Produce is sold, and the money used to buy chickens. The group now has 52 chickens, kept at the Chairlady's farm, and they sell the eggs at Chiakariga Market. The group has received visits from the CDA in 1987, and the EMI Women's Group Coordinator and TCO, also in 1987. EMI has said that they will provide mabati and wire for a chicken house, but as yet, the group has not received this. The group wants to build a house for the chickens, as they have already lost some, eaten by a mongoose, and aim to raise money to buy improved chickens, so they can increase production and sales of eggs.

The Chairlady of the group is aged 38, with one child at primary school, and farms 4 acres of food crops. Her husband works as a carpenter locally around Kamarandi and Chiakariga. The respondent is solely responsible for all farm tasks, with the exception of tending livestock (cattle and goats) for which help is hired. Income is raised from goat sales, and from husband's job. The main expenses are food (maize) and clothes. The Chairlady is also active in the local Church. A member interviewed, aged 26, has been deserted by her husband. She lives in a household with a co-wife and their children, farming 1.5 acres. They grow food crops only and use no inputs apart from manure. Water collection takes 3 hours daily, and wood collection up to 3.5 hours every other day. Her family's only source of income is from weeding on friends farms. She has to buy millet, maize, sugar and soap. She is a member of another group in the area, who have bought goats for her.

GROUP 06

This group meets at a church, about 3 hours walk from Chiakariga. They meet on Sundays after church. The group was started around 1980, and registered in 1987. There are 25 members. Initially, the group worked on each other's farms, and collected and saved money to buy goats for members. They now farm a plot of 1.5 acres donated by a group member. They grow green grams and cow peas, and sell produce and use proceeds to buy goats. These goats are cared for by members. The group has been visited by the CDA who advised them to register, by the EMI Women's Group Coordinator, and by CANSAVE. They have received no inputs or other assistance. They would like to open a kiosk, but need money to stock it, and would like to be able to sponsor a member's child at secondary school.

GROUP 07

The group meets on their shamba near Kamarandi twice a week. The group started in 1980, with 24 members, and was registered in 1982. There are now 22 members. The group farms 2 acres; the land has been lent by a friend, and they have been farming the plot for 3 years. They grow green grams, cow peas and sorghum. The produce is sold and at the moment they are saving to buy land. They have

bought 22 goats for members, as well as a number of chickens. They also make mats and hats to raise money. They are building a house which they want to stock as a shop. They have received visits and advice from the CDA (1988), the EMI Women's Group Coordinator, and the Veterinary Officer (July 1988 when their goats fell ill and died). They have received no inputs. They need jembes, and money to stock the shop.

The Chairlady of the group is aged about 50, with 6 children. The household farms 4 acres, planting food crops. They use no inputs, although manure is applied to cow peas only. Husband and wife share farm tasks. Their main income is from goat sales, and the main expenses school fees (4 children attend primary school), food (maize), and clothes. The group helps members with savings, and with buying goats, but the biggest problems are still availability of water. The respondent would like to be able to use improved seeds on her farm; including drought resistant maize. Members expressed that help with school fees was a main benefit

CHIAKARIGA SUBLOCATION

Chiakariga Sublocation is bordered by Kamanyaki in the south and Tunyai and Kanyuru Sublocations in the north. The Mutonga River forms the western boundary, and Kijeg Forest in the east. Chiakariga Market, at the foot of Kijeg is the Divisional headquarters. This means that Chiakariga is better served in terms of infrastructure and services than most other Sublocations. The main route from Meru-Nkondi-Mitunguu runs close to Chiakariga Market, the road passable for most of the year. There is a fairly regular and infrequent matatu service. South Tharaka Chief and the Division Offices are based at Chiakariga. There is a post office, and a telephone. There is a communal water tap in the market. The EMI Women's Group Coordinator is based in Chiakariga Market, and has an Office next to the Chief. There is a secondary school and health centre close to the Market.

The agro-ecological potential of the area varies with most land classified as Zone V, with Zone IV land around the Kijeg Forest. Most of the area is very intensively farmed. Wood is collected from the forest reserve although in theory this practice is restricted through permits. There are also problems with grazing, and clearing and cultivation of land in the Reserve, but it seems that restrictions are not enforced.

GROUP 08

The group started and registered in 1987. Initially there were 15 members, now there are 28. The group meets two days a week on their shamba, about 1.5Km from Chiakariga Market. They have been farming 1.5 acres donated by a friend for the last two years. They grow sorghum and cow peas, sell the produce, and save the money. They plan to open a bank account. They hope to save enough money to build a canteen, and also to help the members to build houses. The group has received no assistance or visits from any government or non-government agency.

The group Chairlady is a head of household; she was widowed some years ago. She has three children in primary school. She farms 1.5 acres, where she grows a range of food crops, including maize, millet, sorghum, cow peas and green grams. Sunflower is also grown. No inputs are used, except for manure which is applied to sunflower and maize crops. 16 Cassia trees have been planted on the plot. The respondent provides all labour on the farm, and hires a neighbour to help with weeding, the busiest time of the year. Cash income is received from a son who works in Nairobi. The main expenses are paying school fees, buying clothes, and buying goats. In most years she manages to grow enough to feed the family. The women's group enables members to educate their children, and helps with paying school fees. Other members report times when the group has made contributions to help them, and that the group has also bought utensils like cooking pots for the members. Many members mentioned improved seeds as being a needed input on their farms; specifically mentioning Katumani Maize. One member had received a visit from the Agricultural Extension Officer on her farm. This member was interviewed, and used a range of inputs; fertilisers on sorghum, pesticides on cotton, green grams, cow peas and millet, and manure on all crops. Cassia and paw paw trees had been planted in 1988. She also reported that the group helped with harvesting and processing of crops.

GROUP 09

The group farms a 1 acre shamba about 4Km from Chiakariga towards Tunyai. It is not clear when the group started, though they have been registered since 1980. There are now 18 members. The group has borrowed the land - they pay no rent, and grow cotton and green grams. Proceeds of sales of produce are saved and they hope to build a shop. Funds are also used to help members in contingencies. The group was visited by the CDA some years ago, and the EMI Women's Group Coordinator has visited them and given advice. The group needs tools to cultivate their land, and would like to be able to hire a plough.

The group Chairlady is a widow aged 56. She has 4 children, two of whom are at primary school. She farms 4 acres, and grows maize millet and sorghum, green grams and cotton. Katumani maize is used, but no inputs applied. 5 years ago mango, paw paw and cassia trees were planted. The household keeps no livestock. The respondent is responsible for all labour on the farm. The main source of income is the respondent's casual labour on neighbouring farms. Her main expense is buying food - maize and beans - and other necessities. Food and hunger are problems here, and the respondent is also active in a local church group.

GROUP 10

This group is based approximately 1 hour from Chiakariga Market towards Marimanti. It was registered in 1984 (date of formation not known), and has 19 members. The group farms a plot of 2 acres. This land has been lent by a friend and they have cultivated there for the last two seasons. They grow green grams, cow peas, and

sorghum (although the group's name means "millet"). Proceeds from the sale of produce are presently being saved to buy the members uniforms, and in the past they have bought 15 local goats for members, and 8 chickens. The group has been visited by the local chief and by the EMI Women's Group Coordinator. The group tried to raise funds to install a water pipe, but had problems with money. They now need jembes, but would eventually like to open a canteen.

The Chairlady of the group is aged 49 and the first wife in a polygamous marriage. She has 5 children; one at secondary school, 3 at primary school. She farms 3 acres, growing sorghum, millet, cow peas, green grams, pigeon peas, as well as cotton. Pesticides are applied to cotton, and manure to all crops. Hired labour is used for land preparation, planting, weeding, her husband tends livestock, whilst the respondent is responsible for harvesting and processing of produce. The family has to buy maize. The main source of income is from selling goats, and their main expenses school fees and clothes. The respondent would like to be able to use improved seeds for more crops, including maize. She is also a member of a local farming group. Participation in the women's group enables the women to save money, and make contributions to each member.

A member interviewed appears very poor in comparison to the chairlady. This woman is a second wife, and has 5 children, of whom 3 are in primary school. She farms 3 acres, growing millet, cow peas and green grams. Farm tasks are shared between her and her husband. Main income is from goat sales, and expenses include food (maize) and clothes. She says that the group can help members with money and in contingencies.

GROUP 11

The group has been active since 1973, and registered in 1982. There were 13 members originally, and now there are 23. The group meets each Saturday on its shamba at a school on the outskirts of Chiakariga Market. The land, 1 acre, has belonged to the group for many years. They grow cotton. The group initially formed to raise money to build a church, and since then has also been able to help members build houses, started an adult education centre, and built a store. The group has been visited by CARE-Kenya, and received 20 iron sheets from them, and another 20 from the local Councillor for their centre and meeting house. The group needs more funds to stock the shop and to buy equipment for the adult education centre (they need a blackboard).

The chairlady of the group is in her 50s and lives right by the school at Gakwaji. She was deserted by her husband during the Mau Mau Emergency (1952), and lives with her son's family. She farms 1 acre of her own, growing millet, sorghum and cow peas. No inputs are used. The households income is from goat sales; her main expenses are food (maize and millet), soap, and clothes. Her biggest problem is labour on her shamba, and she needs money to hire help. The secretary of the group was also interviewed; aged 33, she speaks some English. She has 5 children, all of whom are in primary school. She farms 3 acres, her husband helps withland preparation and planting; the family still has to buy maize, beans

and green grams. Some cash is earned by the husband as a "businessman". Their main expenses are school fees and uniforms, and food. Again, the group is able to help members in contingencies, for example if a woman is ill.

GROUP 12

The group has been active since before 1980 when it was registered. There are 32 members. They farm 2 acres of land which was given to them by the clan in 1984. The group is based approximately halfway between Chiakariga and Tunyai, a little off the main road towards the Mutonga River. The group grows sorghum, cow peas and green grams which they sell at the local market. The group has a bank account and has managed to save enough money to buy each member a goat (local). These stay with each member's herd, as the group does not have a house to keep them in. In addition, the group operates a merry-go-round system, where a member is visited weekly and money contributed. The group meets twice a week - on Thursdays to work on the shamba, and on Sundays to visit members. The main benefit of the group, however, as expressed by members, is the help provided during contingencies; for example, when a woman is ill, members will weed and work on her shamba, and provide money for hospital treatment. Members say that everyone is very cooperative and works hard, especially during planting and weeding. The group appears well established. The CDA visited them in 1987, and the Assistant Chief and EMI Women's Group Coordinator have also visited. EMI this year ripped the shamba (with chisel plough), and the group are awaiting seeds. Otherwise, the group has received no inputs. The group would like to be able to build a goat house, and aim to establish a canteen in the future.

The group secretary is 25 years old and lives close to the group shamba. She can read and write and speaks good English. She attended school up until Standard 8. Her husband works in Murang'a. She and her 2 small children share a compound with her father-in-law, his wife and their 2 youngest children. The family farms about 5 acres; tasks are shared by respondent and mother-in-law, with children herding the livestock. They grow cotton, green grams, millet and some sorghum and maize. Trash lines are constructed following contours, and cotton intercropped with green grams and millet. The family's income is from the cotton they grow, their main expenses are food and clothes. The respondent receives no remittances from her husband. The Agricultural Extension Officer visits the shamba monthly. They would like to be able to buy fertiliser, and improved seeds for sunflower and green grams.

A member interviewed was a elderly woman in her 60s, who farms close by. She farms 2 acres all by herself. Her husband lives with another wife in Chiakariga. She does casual shamba work one day a week to earn money to buy soap, fat etc. Her son sometimes sends her money. Her main problems are lack of money to hire labour on her own farm. The group gives her security - they will help out when she is ill.

This group appears to be close knit, and made up of women of

different ages from the same clan or even extended family. As with other groups, a younger, educated woman is chosen as the group secretary.

TUNYAI SUBLOCATION

Tunyai lies north of Chiakariga Sublocation and is bordered on the east by Kanyuru, and in the north by Nithi Division. The Mutonga River forms the western boundary. The main market is at Tunyai with is located close to the Mitunguu road. Here there is a dipensary and Sublocation Offices. Materi Girls Secondary School is sited by the Mutonga further north towards Mitunguu.

Most of Tunyai is more fertile, Zone IV, with areas near the Mutonga classed as Zone III. Here they are able to grow maize. In areas of the settlement scheme, advocados, citrus trees and vegetables are grown. There is piped water on the settlement scheme near Materi school, and the pipeline is currently being expanded.

Water is not such a problem in Tunyai, but women highlighted lack of wood as a masjor problem. In most of the Sublocation, land is privatised and so there are not large areas of unclaimed land for wood collection. Land is intensively used, though in general households are better off because of the higher quality of the land.

GROUP 13

The group meets about 3Km from Tunyai. The group started in 1983 with 12 members, and now has 20. It is not registered. The group has a farm of 8 acres, given by the clan (the "Chairman of Land") 2 years ago. They have planted cotton, but at the moment don't have enough time to work on the farm. The group operates a merry-go-round savings system, and visits a member each week. They have also bought 14 goats - one for each member. The group aims to raise money to start a canteen. The group has received no visits or assistance from any organisation.

The Chairlady of the group is a widow who farms 6 acres on her own. She grows maize, millet, sorghum, and green grams, and sells half the crop as her main source of income. She still has to buy maize and beans to eat. Her shamba was once visited by an AEO, but a long time ago and no details are remembered by the respondent. The main benefits of the group are economic; that each member is given money. Other members concur and also comment that the group buys members utensils, and helps with school fees.

GROUP 14

The group started and registered in 1981. Initially there were 26 members, and now there are 15. When they first started they were knitting and selling clothing; they raised money from members and bought utensils for each member, then goats, cows, and furniture.

In 1985, the County Council gave them a 10 acre plot past Materi. Towards the Mutonga River, this represents fertile land close to the settlement scheme. They have grown cotton and green gram and sell produce and use money to buy goats. The group now has 24 goats. These are kept on the group's shamba where they have a large goat house with a dip. They hope get piped water on the farm as part of the new settlement scheme. The group also keeps 2 pairs of oxen and a plough.

The group has received a range of visits and inputs. The CDA regularly visits. The PC visited in 1987, and many people came when the Council gave them the land. CARE and EMI visit regularly. CARE helped with the construction of the goat shed and dip, providing materials, and veterinary supplies. EMI provides extension - the Women's Group Coordinator and TA - and has loaned the group a number of improved Galla bucks. They now have crossbred kids. The group is now raising money to build a shop at Tunyai. They need a trade permit so that they can increase production and sales of handicrafts and other items. They also want to build a meeting house on the shamba. The main problems facing the group are in raising money to employ someone to tend the goats. The goats aren't productive enough to produce a steady income for the group. The oxen have yet to be trained; it is hoped that the group will be able to earn a good income from hiring them out. However, the members agree that the group is very lucky; because they have the land and the plough.

The Chairlady of the group works as a nurse at Tunyai Dispensary. She is 40 years old, with 6 children; 5 in primary school, one in secondary school. The respondent speaks very good English. Her husband is also in fulltime employment. The family farms 10 acres on the settlement scheme. All labour is hired. They are able to grow maize, millet, sorghum, green grams, pigeon pea and beans, cotton and sunflower. Improved seeds are used for maize and beans. Manure is applied to all crops, and pesticides to all apart from the grain crops. They have also planted mango, orange and cashewnut trees. Income comes from respondent and her husband's jobs, and from cash crop sales. They usually grow enough to eat, though in some years they have to buy supplementary maize and beans. School fees are the major expenses. Their farm has never been visited, and this respondent was the only one who specified more extension and advice as a desirable, useful form of assistance. She said that more information was required about pests, diseases and treatments. She is also active in the Church group and on the Committee for Materi Boys Secondary School. Other members of the group seemed to be similarly well-off; with high status, and well informed about innovations. They agreed that the women learnt from each other through the group.

This can be described as a Showpiece group; it is very successful, and very well supported. The group is lucky in having land; a large plot of relatively fertile land close to the settlement scheme. This was given to them by the County Council largely through the tefforts of the local (female) councillor, who is very supportive of women's groups in Tharaka. The group is made up of genmerally better off women who are perhaps able to afford not only the time it takes to work with the group, the expenses and investments, but also able to take risks. The group leader is of

high status, well educated, confident and articulate, with a high profile locally. She seems a competent and highly motivated person who undoubtedly works hard to make the group successful.

GROUP 15

The group started in 1981 and registered in 1982. There are the same 26 members now as when started. The group farms a 1.5 acre plot at a local school. They grow green grams and cotton. Proceeds are distributed to members when they have a problem or are ill. The group is saving money and building a canteen. They also organise an adult education class at the school. The group needs more money now to buy mabati for the roof. The group has been visited by the CDA in 1985, but otherwise has had no other contact with development agencies.

The group are made up of women of fairly high status; the area is relatively high potential and many households grow large areas of cash crops. A committee member interviewed, who speaks English, teaches adult literacy. Innovation and knowledge appear high, although there were no visits from an AEO. Many members had planted fruit trees, and used improved seeds. Farm sizes are larger - for example the committee member's household have 24 acres. Some households have access to piped water (eg: committee member pays 10KSh per month). Cotton is main income source.

GROUP 16

The group is based about 1Km from Tunyai Market. It started in 1983, and registered in 1986. There were initially 27 members and now there are 23. The group has a 1.5 acre shamba. They are waiting for the land to be surveyed so the plot can be registered in the group's name. They grow cow peas, green gram and maize, and sell produce locally. They have also bought 17 goats for members. They were saving money but the group quarrelled and split up, and the Treasurer stole money and formed a new group. The group also has a canteen selling salt, sugar etc. They received a visit from the AEO about poultry in 1987, otherwise they have had no contact with government or NGO officers. They want to save money to build a bakery. The group help each other with money - particularly for school fees - and buys utensils for members.

The Chairlady of the group is monogamously married. Her husband works at Mitunguu. She is 31 years old, and has 5 children, 3 of whom are at primary school. The household farms 5 acres. They are able to grow maize, as well as millet, sorghum green grams and onions. They have also planted Cassia trees supplied by EMI. The respondent does all work on the farm. The husband's job provides income; school fees and clothes are the main outgoings. The respondent is also active in a local church group. She wants improved seeds, particularly Katumani maize.

The area is generally more fertile than other parts of Tharaka. A member interviewed has 9 children; 5 at primary school, 1 at secondary school. The husband and wife share work on a 9 acre plot. They grow a range of food crops, including maize, and

cotton. Their income is from cotton and they normally sell about half of their food crops. They use fertilisers on maize, pesticide on cotton, and manure on all crops. They have planted mango and cassia trees. The main expense is school fees, and at times they have to borrow money from a money lender in Materi to pay fees.

GROUP 17

The group is based about half an hour's walk from Tunyai market towards Materi. The group started in 1981, and although the Chairlady says that it is registered, it is not sure when. It was not possible to find records from the lists compiled from the self-help registration forms. The group has recently been given a 3 acre shamba which they will plant this season with cotton and pigeon peas. The group has already bought 5 local goats - kept at the chairlady's home, and hopes to be able to buy more from proceeds of sales of crops. They also operate a merry-go-round system; they buy utensils for members, and are able to help with school fees. As the chairlady says; "members look after each other". They hope to raise money (2500KSh) to install a water pipe to the plot for irrigation, so they can grow tomatoes and cabbages. At present they have to buy water. They also aim to open a shop at Tunyai. They seem well informed and well organised. The chairlady is 36, with 7 children (3 at primary school). The family work a 4 acre shamba and use improved seed for maize, millet and dwarf sorghum supplied by EMI. Drought and water availability remain problems even in this relatively prosperous area.

GROUP 18

This group is made up of older women, many of whom are widows. The group started and registered in 1983. There were 14 members and now there are 40. They have a 2 acre shamba, borrowed from friends. They have been cultivating this plot for 3 years. They grow green gram and pigeon peas; produce is sold, and money used to help members pay school fees and buy clothes. They used to plant cotton, but gave up when they couldn't buy pesticide and the crop failed. They group has 5 goats, looked after by members. They have received no assistance from outside agencies, although the EMI Women's Group Coordinator visited them 3 years ago. They need forked jembes and pangas. The chairlady is 68 years old (6 children, 4 grown up and married, 2 at primary school). They grow food crops only, and sell half of the produce as sole income source. They still have to buy maize and beans.

GROUP 19

This group started in 1988 when members split from group 16. Originally they had 15 but now there are 22. They have a 1.5 acre shamba which they have planted with cotton, sunflower and green grams. They have never been visited by government or NGO. They want to save money and to build a canteen. Need help to open a bank account. It is a very new group.

MARIMANTI SUBLOCATION

Marimanti Sublocation lies in the centre of Tharaka. Marimanti Market is the headquarters of Marimanti Location. The Chief lives here. The Kathita River runs through Marimanti Market; the Thanantu forms the boundary with Gatunga and Gatue Sublocations in the east. Nkondi Sublocation lies to the north, and Turima and Kanyuru to the west. Despite being traversed by a number of large, perennial rivers, the sublocation is generally dry, with most land being classed as Zone V. All the groups interviewed in this Sublocation farm land classified as Zone V.

The EMI Goat and Sheep Project is based close to Marimanti Market. The main road from Mitunguu-Gatunga-Meru National Park passes through the market. This route is usually served by a daily matatu service. There is a health centre at Marimanti Market, permanently staffed by nurses (although suffering from severe drug shortages, and has no transport for emergency cases which need to go to Meru District Hospital). Tharaka Boys Secondary School lies just outside the Market.

The area is intensively farmed, despite the poor quality of the land and there is evidence of deforestation and soil erosion. Steep slopes, for example on the side of Ntugi and Kijege are cleared and cultivated, and during the rainy season the Kathita runs deep red. Away from the main rivers, water availability is a problem, with women often digging at seasonal river beds for water.

GROUP 20

This group started and registered in 1984. There are 41 members, who are the same ones as when started. The group is situated in a dry part of Marimanti, about 2 hours walk from Marimanti Market. They have a 3 acre farm., on land which is classified as Zone V, and N = of very localised potential, with unreliable rainfall and generally shallow soils, and borderline E = area of major surface erosion. They grow cotton, sunflower and green grams, sell the produce and put half the money in the bank, and half is distributed to members. They operate a merry-go-round system, and give 500KSh, and 5 cups to each member when they visit. The group meets 2 days a week. When they started they aimed to keep poultry and saved money to buy land. They haven't managed to save enough money to construct a chicken house nor buy the birds. They also aim to help members pay school expenses. They would like to be able to borrow money to build the chicken house. CANSAVE made contact with the group through the local chief and gave them spray for cotton in 1988. The EMI Women's Group Coordinator has also visited and advised them in 1987. They would also like to buy more land.

The group Chairlady is also a leader of a local church group.

GROUP 21

This group started in 1985 and registered in 1986. There were originally 15 members, now there are 30. They are presently buying 1.5 acres at Igumo about 4Km from Marimanti Market. So far they have paid half of the price. This is a dry area; women report that it takes up to 4 hours to collect water. Initially they worked on other peoples farms to raise money. Now they have planted sunflower and green gram to raise money. They need improved seeds and a loan to buy goats. They want to build a meeting house on the farm. The group have been visited by CANSAVE in 1987 and were given advice (not agriculture). Members agree that the main benefits of participation in the group are economic; to pay school fees, in times of hunger, and to help members when they are ill by looking after their farm and children. The only problems are with members quarrelling.

GROUP 22

This group has also bought land a few Km from Marimanti; 1 acre at 3000KSh an acre. The land is classified as Zone V, N = very localised potential for rainfed agriculture, variable rainfall and shallow soils; marginal B = bushland. A figure of 3000KSh an acre seems very high for land of this quality. They raised the money by holding a Harambee six months ago. The group started in 1982 and registered in 1987. There were originally 39 members and are now 45. They work on the shamba each Saturday and grow green grams. Proceeds from sales go towards buying stock for members - so far they have purchased 16 goats and 16 chickens. The group needs to raise money to complete buying the land and they also want to buy more chickens. They also want to plant fruit trees on the plot. They have been visited by CANSAVE and EMI Women's Group Coordinator, but have not received any assistance. This group also say that they want to build a shop in Marimanti Market.

The group is made up of fairly young women. The Chairlady is 28, with 3 children, 2 of whom at school. Her husband works in Gaitu and comes home roughly once a month. The respondent is responsible for all the work on a 2 acre plot, where she grows millet, sorghum, cow peas and green gram. No inputs are used, but recently she planted cassia trees. Cash remittances from the husband are main income, and school fees, food and clothes the main expenses. She is active in the local church.

GROUP 23

The group started and registered in 1983 with 20 members. There are now 30 members. The group is based at Makumango, about 8Km from Marimanti. The group has a shamba of just over 2 acres, which they recently bought for 1000KSh an acre. The land is hilly and stoney. They grow sorghum (using improved seeds), green gram and cow peas. The produce is sold and the money saved. The main aim of the group when it started was to buy goats for members and to raise money from keeping goats. This is how they raised money to buy the land. The group has bought 23 local goats which are kept with members'. The group has recently opened a bank account. They

now want to buy treatment for goats, and to fence their shamba. The group has been visited by CANSAVE and by the EMI Women's Group Coordinator, but has received no assistance. They would like to be able to hire a tractor to plough their land, and improved seeds to plant. They also want to build a meeting house.

This group is one of few which uses improved seed - in this case sorghum - on their shamba. The Chairlady uses improved (ie: purchased, treated) cow pea seed on her shamba, but other members use their own seed. The Chairlady appears to be a dynamic force within the group. She is relatively young - 31 years old - and is articulate and active within the community. She works at the local school, and is secretary for the local church. The group seems to be made up of younger women; another member interviewed was 29. She has 4 children and is divorced. Many of the women are involved in the local church - Seventh Day Adventist - and the group usually meets on Sunday after church service. The church distributes food in times of hunger and sometimes group members don't turn up to meetings if they are waiting to receive food.

GROUP 24

This group is based beneath Ntugi Forest about 3 hours walk from Marimanti market. The land is very hilly, and stoney, but not so intensively cultivated as other parts of the Sublocation. The land is classified as Zone V, borderline N = only localised potential for rainfed agriculture, and Sc = priority for soil conservation. In terms of land use and vegetation, it is classified as borderline bush. There appear to be lots of trees and bushes in the area. The group says that it is registered, but can't be identified in the records, and members aren't sure when it was started. They say it has been going for a long time. There are 25 members. The group doesn't have a group shamba, but members work on each other's farms. They want tools so they can do this, and one woman explained how soil erosion affected her farm, how terraces would help, but how the women didn't have forked jembes to construct terraces. All the women mentioned this, so maybe an objective of the group is to form communal labour to dig terraces. It is interesting that although none of the women present when the researcher met the group had received an extension visit concerning soil conservation, the women have prioritised this as an aim. The group also has a merry-go-round savings fund to which each member contributes 20KSh a monthly. The group then contributes 500KSh to a member each month. They also plan to by mabati for each member's house. The group has never been visited or received any assistance from a development agency.

GROUP 25

The group has a shamba about 1 hours walk from Marimanti Market. This is quite near to the main road from Mitunguu. They have a 1 acre shamba which they borrowed from a friend last year. They have planted cotton, but the Chairlady says that the soil is poor. Last season they planted green grams but the crop failed. The group started and registered in 1987, with 6 members. Now there are 20. The group is made up of women of different ages, but most appear

to be comparatively poor. The group has never been visited by or received any help from a development agency.

The Chairlady of the group is a 41 year old widow with 4 children. She seems very poor; it's difficult for her to raise money to keep 2 children in school; she does all farm work herself. The children do casual work on other farms. She also weeds on farms, and occasionally sells charcoal. She says that water collection, from the Kathita, takes 4 hours. The family's main expenses are buying food (maize and millet); sometimes she has to borrow food from the church. She thinks that improved seeds - particularly Katumani maize - would help her to grow enough to feed her family.

A member interviewed was the youngest woman interviewed. She is 15, and lives with her disabled mother. They seem to have a very hard time - the respondent does most of the shamba work, and also has to do casual farm work for cash. Food is their main expense - they have to buy maize and millet. The respondent had to give up school, because of lack of money and to look after her mother. She is well informed about innovations; the farm has been visited by the EMI soil conservation extension officer in 1987. However, there are severe labour constraints to dig terraces. Participation in the group enables members to help each other; to buy food or clothes.

This group appears to be made up of women who could benefit from the mutual support offered by the group, and is a particularly needy one.

TURIMA SUBLOCATION

Turima Sublocation lies to the west of Marimanti, and borders Central Imenti Division in the northwest. The Kathita River forms the northern boundary with Nkondi, and the Thingithu the southern boundary with Kanyuru. Turima used to be part of Kanyuru Sublocation and was only created in 1987. It is an area where opposition to land privatisation is particularly strong, and where border disputes are common. The Sublocation straddles the main route from Mitunguu to Marimanti, the E788. The Sublocation has two market centres; Kibunga north of the road towards the Kathita, and Ruungu, south of the road by the Thingithu.

The area is generally more fertile, receiving higher rainfall and possessing deeper, more fertile soils. Parts of the area have been identified by EMI as having potential for smallscale irrigation works. Most of the area is classified as Zone IV, with small pockets as Zone III. We therefore find that farmers may grow maize (not always with success) and citrus and cashewnut trees. The area is well covered by agricultural extension staff, and is a particular target for EMI Soil and Water Conservation, and Livestock Extension activities.

GROUP 26

This group is based close to Kibunga Market. The group started in 1982; the Chairlady says that it is registered, but no records have been found. The group had 48 members when it started, and now has 27. The group meets at Kibunga Primary School. The group doesn't have its own shamba, but members work on each others' farms. The group keeps 10 goats. Interestingly, despite the group not having a shamba, the group has been visited by the EMI soil conservation TA in 1986. At the moment the group has been lent a Galla buck by EMI for breeding. The group hasn't been visited by anyone else. The members say that the group has managed to buy goats and chickens for members, helps them when they have a problem, and helps pay school fees and visits when a woman has a baby. The group has a bank account and very much wants to buy land. (This is an area where land adjudication, amid much protest from local people, is underway).

EMI Soil Conservation appear to have been active in the area, with some of the women having been visited. The Chairlady of the group was visited last year by the EMI Soil Conservation TA and was advised on the digging of terraces; she has since constructed terraces on her shamba. This lady, and a member interviewed had also received improved seeds from EMI. The women in the group seem to have access to more land, with some cultivating more than one plot. Both of the women interviewed requested help to enable them to plough their land.

GROUP 27

This group was formed in 1981, and registered in 1982. There were 28 members, and now there are 34. The group meets at a school about half an hours walk from Kibunga Market. The group used to have a shamba, but it was taken back by the owner. They raised some money through a sunflower harvest, and since then they raise money by working on farms. This illustrates the insecure nature of many group's access to land; that when a group has put in hard work to cultivate the land, it can be taken back by the owner. They save money in a bank account. When they had the shamba they received improved seeds, probably from either EMI or WorldVision, though its not sure, for green grams and millet in 1982/83. Otherwise the group has received no inputs or assistance.

Again, both the women interviewed from the group, the Chairlady and a member, have been visited by EMI Soil Conservation TAs. A member uses cow pea and green gram seeds supplied by EMI. Both women had planted trees - Cassia, mango, paw paw.

GROUP 28

This group meets at Kibunga Market, and was started and registered in 1982. Originally there were 11 members, now there are 20. They don't have their own shamba, although they help on each others' farms. The group has more than 50 goats, which are looked after by members. They have also bought more than 20 chickens. The group's main function seems to be collecting and saving money and

investing in goats. They also buy utensils for members. The group was visited by the CDA in 1985. In the same year they received a grant from the Department of Social Services to buy goats. They now want to raise money to build a store and a posho mill.

The group Chairlady seems to be a motivating force behind the group. They meet at her house. She appears to have high social and economic status, and speaks good English. She is aged about 40 and her husband works for Kenya Breweries in Mombasa. He normally returns to Tharaka for leave in December. She has 2 grown up children. The household's farm totals 15 acres, consisting of 2 plots. On these, maize, millet, sorghum, green grams, cotton and sunflower are grown. Improved seeds are used for maize and sunflower. Mango and paw paw trees have been planted. The respondent and hired labour are responsible for farm work. The household has varied income sources; from cash and food crops (sells millet, sorghum, green gram), cash remittances from husband and two sons. The main expense is building, though its not specified what is being built. This respondent would like to buy a tractor.

A member interviewed has been visited twice by the EMI Soil Conservation TA. This woman is obviously not so well off as the Chairlady. Her household, consisting of her and her 2 small children, husband, co-wife and children, farm 2 acres only. Their income is from sunflower and cotton. They have to buy maize and millet. Their main expense is buying goats. They use improved sunflower seed, and Katumani maize. This year they planted paw paw and avocado trees.

GROUP 29

This group is based close to Ruungu Market. This is a fertile area close to the river. The group started in 1981 and registered in 1982. Initially there were 5 members and now there are 8. The group farms a 2 acre plot at Ruungu. They cultivate cotton and have also planted mango, banana and cashew nut trees. They have recently been given a 10 acre plot near Ruungu by the Assistant Chief, but have yet to cultivate it. Proceeds from the cotton harvest are saved in a bank account and the money is used to buy things for members. The group also runs a bakery at Ruungu Market; members work in the bakery twice a week and the Chairlady says that it is a successful income generating project. The group has a school house with 2 sewing machines; they aim to teach tailoring, but they need to hire an instructor.

The group has received much attention from development agencies. EMI Soil Conservation TA has visited several times. CARE-Kenya, CANSAVE and World Vision visit. CARE-Kenya helped them to build the bakery in 1983, and taught them how to make bread. World Vision provided maize seeds in 1985. EMI gave jembes to dig terraces.

Although the group appears prosperous, there are still problems, essentially with capital. Sometimes they don't have enough money to buy flour to make bread. The Chairlady says that it is always difficult to raise money. Despite this, the members say that the

group helps with school fees, and when members have other difficulties. The group would also like to get a knitting machine so that they can make and sell clothes.

The relative fertility of the area is illustrated by the respondents' farming practices. The Chairlady farms 8 acres at Ruungu. She is 43 years old, her husband works as a preacher. There are 11 people in all in the household, including the mother-in-law. Four children are at primary school. They grow maize, millet, sorghum, cow peas, green gram, pigeon peas, beans, cotton and sunflower. Improved seeds are used for maize, green gram and cow peas. They have planted a variety of trees which include mango, paw paw, cashew nut and orange. The respondent is responsible for all farm work, helped by the children. In this area, firewood is relatively scarce, and they have to buy wood. The family's income is from cash crops. They have to sell some of their food crops to pay school expenses. The respondent would like to save enough money to install a water pipe (the farm is close to the river) so she could irrigate the fruit trees.

A member interviewed was one of the few respondents in fulltime, formal sector employment. She works as a teacher at a nearby school. She was educated at Materu Secondary School near Tunyai and speaks very good English. She is 23 years old and single. She lives in her parents house. Again the household has planted trees; cashew, mango, avocado, paw paw. They grow a range of cash and food crops, including maize, beans and tomatoes. The family's main income source is from cash crops, and buying seeds is also highlighted as a main expense. The farm has also been visited by EMI Soil Conservation TA.

This group appears to have many advantages; the women live in a relatively fertile area, services are good, women are of high status and are well informed. The group is a magnet group and well supported by local officials and development agencies.

GROUP 30

The group farms about 30 minutes walk from Ruungu towards the main road. They formed in 1984 and were registered in 1986. Originally there were 6 members but now there are 22. Their shamba is approximately 1.5 acres of clan land: this area is not yet demarcated. They grow sunflower and maize and save money from sale of harvest in a bank account. They then use money to buy each member cups, chickens, goats, and eventually cattle. They also help a woman who has just had a baby, or when a member is ill, with shamba work and collecting wood and water. They also help when members are in need of food or money. They would like to be able to raise money to build the group a house and want to stock it as a bookshop, so local school children can buy their books there. The only visit or assistance they have received is when CANSAVE visited them in 1985. They were given advice, but none of the members can remember what it was about.

The members of this group appear poorer than those of other groups in the area. It is still relatively fertile here, though water availability is likely to be more of a constraint than it is

nearer Ruungu Market. However, the Chairlady and member interviewed were both able to grow maize on their shambas, and both had planted a variety of trees. Neither had received extension visits. The group appears to be made up of fairly young women. The chairlady is 29, with 9 children (she was married at 14). Her husband is a teacher at a primary school past Marimanti. A member interviewed was 27 years old, with 4 children and recently widowed. Things are very hard for her; her main source of income is from cotton, but if the cotton fails, she has to go and work on shambas. She has recently planted dome palms and hopes that when these grow she will be able to earn a living from making baskets. This woman finds herself in a highly vulnerable situation, and is trying to develop an income generating activity now that she is solely responsible for the welfare of her children. In this situation she should be able to benefit from participating in the group, so long as time and labour constraints can be overcome.

GROUP 31

This is another group based at Ruungu Market which has also attracted a lot of attention from government and non-government development agencies. The group started in 1977 and registered in 1981. There were 13 members and now there are 27. The group has a number of on-going projects. When we visited they were starting to build a posho mill at Ruungu Market. The group has a 2 acre shamba at Ruungu which was given to them by the County Council in 1987. They grow sunflower, beans and pigeon peas. The produce is sold, the money kept in a bank account and used to help the members. They have also been given a plot at the market by the County Council. Apart from the posho mill, they want to build a store, shop and school. They need building materials for this.

The group has received a lot of visits. The CDA and Divisional SDA have visited in 1984, CARE-Kenya, CANSAVE, EMI Soil Conservation and Women's Group Coordinator. They were given jembes by the Agriculture Officer in 1982, and CANSAVE gave them a loan in 1988.

This is typically a magnet group. The Chairlady seems very dynamic; aged 54, she has 5 children. Her husband lives with a second wife in Mitunguu, although the second wife's children live with the respondent. She is responsible for all the work on her 7 acre farm. She uses improved seed for maize, beans, millet, and fertilisers for maize, pesticides for maize and beans. She has planted mango, Cassia, and timber trees. A member interviewed, aged 24 with 3 small children also uses inputs and has planted trees. For both women cash cropping is the major income source.

NKONDI SUBLOCATION

Nkondi Sublocation lies in the centre north of Tharaka, and shares a northern boundary with North Imenti and Tigania. The Kathita River forms most of the southwestern boundary with Turima and Marimanti, and the Thanantu that with Gatunga Sublocation. All but the southern parts of the Sublocation - those bordering Gatunga and Marimanti - receive considerably more rain than most of Tharaka. There is a cotton settlement scheme close to Nkondi Market, in the centre of the Sublocation. Northwards, land is more intensively farmed, privately owned, with an emphasis on cropping rather than livestock. The agro-ecological potential of the land varies correspondingly, with some land classed as Zone V in the south, and land around Nkondi Market, on the settlement scheme and further north as Zone IV. Communications here are generally better, with a road to Gaitu and Meru which has more frequent transport services. However, black cotton soils, and wash-aways often make this route impassable in the rains.

GROUP 32

This group is based about 3 hours walk from Nkondi Market towards Kiburine. The group started in 1983 and registered in 1984. There were 7 members when started and now there are 49, so there has been a big increase in numbers. The group has just bought a 1 acre plot of land. It is not known how much the land cost them. They have not yet cultivated, but plan to plant sunflower and green gram. They want to save money to buy a tractor which they can hire out. They would also like to start a posho mill. They hope to hold a Harambee to raise funds.

GROUP 33

This group meets at the Assistant Chief's camp at Nkondi market. The group started in 1984 and registered in 1986. There were 20 members when they started and now there are 50. The group does not have a shamba, although they raise funds to buy chickens. They have already bought 2 chickens for each member and are now saving to buy chickens for the group. They raise money from knitting. They want to keep goats. They were visited by the CDA in 1988, and by CARE-Kenya in 1988. The group has suffered from difficulties due to the ex-Chairlady stealing the group's bankbook. The incident was cleared up by the Assistant Chief.

GROUP 34

This group also meets at the Assistant Chief's Camp. They started in 1977, and registered in 1980 (records not found). There were about 35 members when the group started, and now there are 44. The group doesn't have a shamba but the group works as a labour gang, particularly during the harvest time, and charges members 30KSh a day, and non-members 100KSh a day. The money raised in this way goes into the group's funds. Money is saved in a bank account. Money is used to help build houses for members, and to help members out with paying school fees. The group has recently been

given a plot at Nkondi Market, where they plan to build a shop. They hope that this will be a tailoring shop, and sell handicrafts and knitting made by the group. They are waiting to receive their trade licence before they start to build the shop.

The group has received many visits. The agricultural extension officer has visited them twice. The CDA visits regularly. CANSAVE visited in August 1988. In 1985 the group received a loan of 2000KSh from the Ministry of Agriculture. CANSAVE has given the group building materials. The group now needs to raise more money to build the shop.

The Secretary of the group was interviewed; she is a divorced woman of 38, with 3 children. She lives in her extended family's household of 27 people, but cultivates a plot of 2 acres by herself. She speaks English. She grows maize, millet, sorghum, cow peas, green gram and cotton. She says that the AEO visits regularly (re cotton); during the rainy season and during spraying and planting. She seems to be very well informed about agricultural innovations. She uses Katumani maize, and applies fertiliser to maize, pesticides to green gram cotton and cow peas, and manure to all crops. Between 1975 and 1980 she planted Cassia, mango and paw paw trees. Her main source of income is from cotton, and her main expenses are school (building fund), and clothes for the children. She wishes she could be able to afford to hire labour so she could cultivate a larger shamba. Other members of the group who were interviewed seemed similarly well informed and some of them stressed the educational value of participating in the group. They would like access to more training; about agriculture, handicrafts and from other groups.

GROUP 35

This group is based about 2Km from Nkondi Market towards Kiburine. The group started and registered in 1986. Originally there were 10 members, and now there are 64. The group bought a 1 acre plot in 1987. At the moment they grow sunflower and green gram, and they plan to plant cotton. They save the money earned from the crops, and want to buy mabati for all the members. So far they have managed to buy a goat for each member, and also glasses, a kettle and sufuria. The group also aims to help members when they have problems paying school fees. The group was visited by the CDA in May 1988.

Again, the women in this group seem to be well aware of farming innovations. The Chairlady uses improved seeds, pesticides and has planted mango and guava trees.

GROUP 36

This group started and registered in 1983. There were 20 members then, and now there are 35. The group meets at its shamba, about 2 hours walk from Nkondi Market towards the main Marimanti-Gatunga road. The farm, which totals 8.5 acres, was given to the group by the Ministry of Agriculture about 3 years ago. The group cultivates about 1 acre of the land. They grow green gram and

cotton. They save proceeds in a bank account. They have a large goat shed constructed on the plot, with a store room. They buy each member a goat, which are then kept in the shed. An old man is employed to look after the goats. The group also has a dip and a water tank. They are waiting to get a trade licence so that they can build a canteen.

The group was last visited by the AEO in July 1987. The CDA visited a long time ago. The group has regular contact with CARE-Kenya. CARE-Kenya gave them 5 pangas and jembes, and helped them build the water tank, dip and goat shed. CARE-Kenya also provides chemicals for the dip, and gave them a goat - a Galla buck from EMI - but the goat died. The group now needs money to build and stock their canteen.

This group is another "magnet" group which has enjoyed continued support from both Government and NGOs. The origins of their land is not clear; it seems unlikely that the Ministry would give them the land, though more likely that it was arranged by the Ministry from the County Council. The members seems relatively high status and generally well motivated.

KANYURU SUBLOCATION

Kanyuru Sublocation lies between Marimanti, Turima, Tunyai and Chaikariga Sublocations, south of the Thingithu River and to the west of the Ntugi Forest. The area is relatively hilly and rocky, mainly Zone V, but in parts; along the river valleys and at the foot of Ntugi, Zone IV. The area is generally less intensively cultivated, with quite a lot of scrub and bush. Towards Tunyai there are large trees, mainly mango. There is a road between Nthaara (on the Marimanti-Chiakariga road) to Tunyai Market which is seldom used. Halfway between lies Kanyaga, the Sublocation centre. There is no market here, most women go to Tunyai, or Marimanti depending which is nearest. The area is poorly served by infrastructure and services, again people using either Tunyai or Marimanti. Women in the area stress poor communications, and lack of water as the main problems.

GROUP 37

This group is situated in a fairly remote area about one hour or more from Kanyaga, beneath the Ntugi Forest. The group started in 1983, and was registered in 1984. Originally there were 25 members, now there are 16. The group claimed 2 acres at Mukinyango 2 years ago. Land in this area is not yet surveyed. The land here is classified as Zone IV, and as being of priority for soil conservation works. The group meets at the shamba once a week, on Saturdays. On the shamba they grow cotton and green grams. Produce is sold, and proceeds saved in a bank account. The group has bought goats for members; they run a merry-go-round fund, contribute to members and buy goats, utensils and, in the future, cows, for members. The group is also saving to build a shop on the road at Kanyaga.

The group has been visited by CANSAVE in May 1988, and received advice about poultry keeping. The group needs help with raising funds to build the shop.

GROUP 38

This group meets at Nduruku Primary School, about 1 hours walk from Kanyaga, on Sundaya. The group started in 1986, and registered in 1987. There were 18 members and are now 23. The group farms a 2 acre plot. They have planted cotton and millet for the first time this season. The group aims to raise money to build a shop. The group has never been visited or received any kind of assistance from an outside agency.

The members say that the main advantage of participating in the group is help provided in times of contingencies; for example, if a woman is ill, or when a child gets expelled from school. Many of the women in the group are de facto heads of household; the secretary, who is only 22 years old and has three small children, normally sees her husband only once a year as he works in Mombasa. She farms 3 acres, and is able to hire casual labour to help with land preparation, planting and weeding, but grows maize and usually sells surplus. The respondent reports that remittances from the husband are her main source of income, although the amount received is not specified.

GROUP 39

This group meets at Muteguru, about 45 minutes walk from Kanyaga. Like group 038, this group also started in 1986 and registered in 1987. At first there were 12 members, and now there are 17. The group has a 3 acres shamba which they claimed in 1986. Here they grow green grams and cotton, using local seeds and no inputs. They meet on the farm each Sunday. They are saving proceeds from the farm in a bank account in order to "help members with problems". These problems are specified as illness, school fees, and buying utensils. In the future, they would like to start a canteen at Muteguru. The group has received no visits or help from any development agency.

The chairlady of this group also has a husband who works in Mombasa. She is the sister-in-law of the chairlady of group 38. Their mother-in-law is a member of group 39. This chairlady is 27, and has 4 children, two of whom go to primary school. She farms 12 acres, helped by hired labour. In this area, classified as Zone IV, she is able to grow a variety of crops; maize, millet, sorghum, green grams and cow peas. Pesticides and manure is used, and Cassia and paw paw trees have been planted. This woman also receives remittances from her husband.

GROUP 40

This group meets at Kanyaga Primary School each Monday. Started in 1983 with 12 members, the group was registered in 1987, and now has 19 members. The group farms a 1 acre plot which was lent to them 2 years ago. They planted cotton last year, but the crop failed because they did not spray it. This year they will plant cotton and green grams. The money that they managed to collect and save last year was spent buying food for members as the area suffered a drought. The group aims to save money to buy mabati for a house for the group. The group has received on visit; from CANSAVE, some years ago. Members report that they have experienced problems with women competing to become chairlady and secretary. The group wants to buy chickens, and would like to build a canteen/shop at Kanyaga Primary School.

The members of this group appear to be better off than those in other groups. Both the chairlady and another member interviewed are married to teachers, so although they manage their farms themselves for much of the year, there is some regular income in their households. Both women report receiving regular remittances from their husbands. The chairlady of the group is 38 years old with 6 children. One is at college, one at Materi Secondary School, three at Primary School, and one infant. She is responsible for farming 2 acre shamba. The household's main source of income is from the husband's job, but the respondent says that she sometimes has to borrow money from the group for school fees. A member interviewed is the wife of the headmaster at Kanyaga Primary School. She is 43 years old, and has 5 children. One is a teacher, one at teacher training college, another two at primary school. She farms 3 acres, assisted by one permanent labourer and the group helps with harvesting and processing.

GROUP 41

This group meets at Kanou, near the Thingithu River, over one hour from Kanyaga. The group meets each Sunday. Started in 1983 and registered in 1985, the group has 25 members. The group has recently been given a 3 acre shamba by friends, but are not sure what they will plant. They would like to be able to raise money to set up a small kiosk. At the moment they contribute money to help members in times of contingencies, and to buy utensils. However, the women are poor, and it is difficult for them to raise money. They have never been visited or received any assistance from an outside agency. This is a less fertile area, with land classified as Zone V, and having agricultural capability Mc; marginally suitable, with severe constraints for rainfed farming, and requiring long fallows.

Both of the women interviewed from this group have been deserted by their husbands. The chairlady of the group is the second wife; her husband has deserted both his wives, and lives with another woman in Chaikariga. She is 44 years old, and has 4 children; one is a teacher, three at primary school. The woman farms two plots; 2 acres growing millet, sorghum, cow peas and green grams, and 2 acres growing cotton. She does all the farmwork herself. Her main

sources of income are from cotton and from livestock sales. However, she still has difficulty raising money for school expenses. The women in this group appear poor and are very hard working. A member interviewed is a fifth wife who lives with her son's family. Money raised through group activities is particularly critical for these women.

GATUE SUBLOCATION

This Sublocation lies east of the Thanantu River from Marimanti, and south of Gatunga Sublocation. The Mbuura River separates it from Kathangachini in the northeast, and the Tana River forms the east and southern boundary of the Sublocation, and of the District.

The landscape is dominated by the Mutejwa Forest; the area is hilly, scrubby and stoney. Maragwa, the Subdivision centre lies just north of the Mutejwa Forest. Apart from areas close to the Gatunga-National Park road, and the Thanantu River in the west, the sublocation is extremely inaccessible, remote and barren. All the land here is classified as Zone V. Households generate income from livestock, and grow mainly millet and sorghum, and green grams. It is an extremely harsh environment, though relatively sparsely populated. There is evidence that people are moving into the area - from Kathangachini because of shifita. People are very poor here. There are reputed to be gem stones in the hills and men from the area camp in these remote parts looking for valuable stones. All land is under traditional tenure; communal, controlled by the clans. Centres at Maragwa, Manduru, and Kamwathu have no services. Women go to either Gatunga (at least 4 hours walk), or Marimanti Market, which involves crossing the Thanantu River, a dangerous undertaking.

GROUP 42

This group is based in the extreme south of Gatue Sublocation, close to the Tana River. The nearest market is Marimanti, which is up to 2 hours walk, providing that it is possible to cross the Thanantu River. The group started in 1983, with 10 members, and registered in 1984. There are now 21 members. The group does not have a permanent farm, but each year they cultivate up to 1.5 acres of a member's land. They grow green grams and sorghum. Produce is sold and money invested in livestock. The group has 21 goats which are cared for by the chairlady, and 24 chickens kept by a member.

The group has recently bought a plot at Kaigakanwe Market from the County Council for 420KSh. Here they sell green grams and other produce. They want to set up a posho mill here. At present they have to go to Marimanti Market, which is very dangerous when the river is high! The group meets each Saturday at the market.

The group has never been visited or received any form of assistance from any development agency. The group needs to raise money in order to buy the posho mill. They want to save money in a bank account and buy goats for each member.

Both the secretary of the group and a member interviewed speak English. The secretary is 25 years old and monogamously married. She has a small baby. She shares a household with her inlaws, and they farm 5 acres at Gatue, and a further 1 acre at Kiburine, in higher potential, wetter area. They are able to grow maize, and advocado and mango at Kiburine. Despite having access to land in this more fertile area, the household still earns most of its income from selling goats. A member interviewed also cites goat sales as sole source of income. The women in this groups seem quite young; most are in their twenties.

GROUP 43

This group traveled some distance to meet us at Kamwathu Primary School. They say it takes 5 hours to walk there! They come from an area near where the Kathita and Thanantu Rivers meet. The group started in 1986, and the participants say that it registered in 1987, although records cannot be found. There were 10 members when the group started, and now there are 21. The group farms a shamba of 1.5 acres. This is clan land which they first cultivated in 1987. They grew green grams (using local seeds), which they sold and used the money to buy each member a sufuria and kettle, and to buy goats and chickens for the group. They have 5 local goats and 4 chickens which are kept by members. The group helps members by paying school fees when a child is expelled from school. The group has received neither visits nor assistance of any kind.

The group aims to raise money to build a nursery school at Kangiri. In the meantime, their priorities are to provide sprayers for members (there seems to be a problem with pests here), and to build a house for the group.

The group is made up of older women than 42; most of the women appear to be in their 40s. All the respondents described a "traditional" division of labour, with men taking responsibility for land preparation, and planting and weeding shared by women and men. In this dry region (classified as Zone V) no maize is grown; only millet, sorghum and green grams. Smallstock are especially important in this area; goats sales were the main source of income for all the respondents.

GROUP 44

This group is based at Manduru, and cultivates a shamba by Manduru Primary School. The group started in 1984 with 8 members, and now has 25 members. They were registered in 1987, although the group cannot be traced in the records. They merged with another local group in November 1988 (there were only 5 members in the other group so they thought that they could do better together). The 2 acre shamba has been first planted this season. They have planted cotton and green grams. They want to raise money to buy a Galla goat. So far the group has 10 local goats, which are kept by members, and 12 chickens. The group wants to build a canteen at Manduru, and to help each other to build houses with mabati roofs. The group has received no visits or

assistance from development agencies.

The chairlady of the group has access to land in a more fertile area. She is aged 35 with 5 children, a total of 11 people in the household. They farm 8 acres at Manduru, growing millet, sorghum, green grams, pigeon peas and cotton, and one acre at Mukothima where they grow maize and beans. They use no inputs and have never received extension advice. The respondent said that the assistance needed on her farm were fertilisers and improved seed; maize, green gram, cow peas and sorghum. Despite having access to land at Mukothima, the family still needs to buy maize and beans. Division of labour is "traditional"; husband carrying out land preparation and helping with weeding, children tending livestock. No labour is hired. Water availability is a big problem in this area, with this woman reporting spending three hours collecting water from the Thanatu River. The family's income is from selling goats. However, there are still problems raising money for school fees (three children attend primary school), and money was collected at local Harambee to pay fees, which are the household's greatest expense. A member interviewed reports that the major source of income in her household is selling goats, and the main expense, buying goats.

GROUP 45

This group is situated near Kamwathu Primary School, about 2.5 hours walk from Gatunga. The group started in 1986 and registered in 1987. There are 25 members. They have a shamba, 5 acres of clan land. Here they grow green grams, sorghum, cow peas and maize. They sell the produce and use money to buy goats. They have 10 local goats which are looked after by members, and 5 chickens. The group was visited by the Assistant Chief last year. They want to have pangas for the members, and also improved seeds; sorghum, cow peas, and green grams.

The group is traditional in nature; the members are older, and most appear very poor. Water is a big problem in the area; women report having to travel to the Tana River. The members of the group are able to help each other; they say that they assist members with weeding, and can contribute money when needed.

GROUP 46

This group is also near Kamwathu. The group started in 1984, and members say that they have recently registered, in September 1988. There were 10 members when they started, and now there are 22. They have farmed 2 acres at Kamwathu since 1984. They grow green grams (local seeds). They have 6 goats, which are kept by members, and have also bought utensils for members. They have raised money by weeding. They are saving money to build a canteen at Kamwathu. They have had problems with the local goats which died from ticks. The group's other problems are in raising money. One members says that it is difficult to find time to work with the group; during the dry season, it takes all day to collect water. The group wants to borrow a tractor and plough so that the shamba can be levelled. They also think it would be a good idea to

start a canteen, as they have to cross the Thanatu to get to Marimanti Market to buy things like salt and fat. This can be very dangerous during the rainy season.

The women here are very poor, and access to water is a big problem. The group has received no visits or assistance. There is no extension to farmers here. However, despite this a member of the group (who speaks a little English) seems very well informed about improved seeds and soil conservation, and grows Katumani maize.

GROUP 47

This group is based near Manduru, a further 2.5 hours from Kamwathu. The group started in 1985 with 6 members. They say that they registered recently. There are now 20 members. They have a shamba of 2 acres which they have been cultivating for 2 years. They grow green grams which they sell, and have bought 5 goats and 5 chickens, which stay with members. They have received no visits or any kind of assistance. They would like to save money to build a canteen at Manduru Primary School. They also want to buy uniforms, so that they can be recognised! Water availability is a serious problem.

GATUNGA SUBLOCATION

Gatunga Sublocation lies north of Gatue, with Marimanti and Nkondi to the west, Kanjoro and Kathangachini to the north and east. The Thanantu River forms the western boundary. Gatunga Market, the Sublocation and Location centre, is sited on the banks of the Thanantu, by the main road from Marimanti. There are services available here; a secondary school, a health centre run by the catholic mission. The area is arid, and fairly intensively farmed and as a result deforested. Most of the land is classed as Zone V. Water remains a problem away from the rivers. Land is mainly traditional tenure.

GROUP 48

This group is situated about 2 hours walk from Gatunga Market towards Manduru. The group started in 1986 with 8 members, and now there are 19 members. The group say that they have registered recently. The group farms 3 acres at Gituu. They say that they claimed the land in 1984 (this may mean that they worked as another group before 1986 perhaps, it is not clear). They grow green grams and sorghum, using local seed. Proceeds from the sale of produce has been used to buy goats; the group has 19 local goats which are kept on the shamba and looked after by the chairlady. The money is also used to buy food for members. The group also wants to buy chickens, and they need an ox plough and improved goats. The group has never been visited or received any assistance.

The chairlady of the group is only 22 years old, although she has 4 children. She is monogamously married and shares the compound with her in-laws. Again, the household has access to land in a more fertile. They farm 4 acres at Gatunga, and 5 acres at Mukothima where they grow maize and beans. Local informants explained that much land at Mukothima is rented from the local Chief. The respondent is fairly well-off; her husband is a businessmen, and they can afford to hire labour on a permanent basis. Water collection is a big problem, and this woman digs for water near the Mbuuru River.

GROUP 49

This group started and registered recently (1988). There are 20 members and they meet at Upper Kathangachini Primary School on the outskirts of Gatunga Market. They experienced problems in registering and are still waiting for their certificate. They have initiated a number of income generating projects and aim to raise funds to set up a posho mill at Gatunga Market. They are making and selling handicrafts, including baskets and mats, pottery, knitting and crochet, and belts made from Tamarind seeds. They are also helping members with marketing their farm produce, and aim to build a store at Gatunga Market. The group has been visited by the local Maendeleo ya Wananwake coordinator, but has not received any advice or assistance.

The chairlady of the group lives close to Gatunga Market and with her husband runs a lodging house. Her husband is a prominent local businessman. The respondent comes from Chogoria, and speaks good English, having completed secondary school. She is aged 30 and has 4 children; 2 at primary school, one at nursery school, and one infant. She represents a local elite. She farms 3.5 acres and uses all purchased, improved and treated seed. She grows millet, sorghum, cow peas, green grams, pigeon peas. She has planted Cassia trees. Labour is employed. She feels that women can really help each other in groups, particularly through advice and business. The group appears to be made up of younger women who have an interest in business.

GROUP 50

This group also meets at Upper Kathangachini Primary School at Gatunga. The group started in 1984 and is not registered. Originally there were 16 members, now there are 22. The group farms 1 acre which was given to them by a friend this year. They have planted green grams, sorghum and cotton, and want to use the money raised to buy uniforms for the group. The group has bought 4 goats, which are kept by members, and 2 chickens (the rest died). They want to build a meeting house. They have been visited by the CDA in 1984, when they first started.

Although the group does not appear to be very dynamic, and the members appear very poor, the chairlady of the group represents a local elite. She is the Maendeleo ya Wanawake Chairlady for the Sublocation, and is also the local circumcisor. She is aged 31, monogamously married, with 2 children. The family appear well off;

they farm 6 acres at Gatunga, where they grow millet, sorghum, cow peas, green grams and cotton, and 9 acres at Mukothima, growing maize, pigeon peas, beans, mango and paw paw. No improved seeds are used. The most important source of income is from goats, and the main expense is hiring labour. The respondent says that the group helps her with harvesting and processing.

The situation of a member interviewed contrasts markedly. This woman has been deserted by her husband. She is 53 years old with 5 children. 3 attend primary school, but 2 have been expelled because she failed to pay expenses. She collects and sells tamarind seeds (at 50 cents a kilo), and makes and sells baskets as her only source of income. The group sponsored her first daughter for secretarial training.

GROUP 51

The group started in 1986 and is not registered. There were 8 members and now there are 16. The group meets at Marawa Church on Sundays, and on Saturdays at the shamba. The group has a farm at Kamwitha, 1.5 acres which was given to them by friends (the clan?) last season. Last year they grew green grams, but the harvest was not good because they did not spray the crop. They had 6 goats, which were kept by members, but 3 died recently. The group also make bags and baskets. The group has never been visited nor received any assistance from a development agency. The group wants to raise money for an ox plough and also to buy sprayers for members.

Women from this area also cultivate plots in more fertile areas. The chairlady, whose husband works in Meru Town, farms 6 acres in Mukothima. She is 38 years old, with 7 children. She sometimes hires casual labour, but is otherwise responsible for all work on the land. A member interviewed also has access to 5 acres at Kiamwitha, and a further 1.5 acres at Mukothima.

GROUP 52

This group is based in the same area as Group 51. The group started in 1984, and registered in 1985. There were originally 16 members, now there are 20. They have been farming a 2 acre shamba for the last 2 years. They grow green grams and millet, and sell the produce. They have 11 goats which are kept by members, and they also help each other with weeding. They are saving money to build a canteen in a compound next to the shamba. They were visited by the Maendeleo ya Wanawake coordinator and the Assistant Chief in 1987, and received iron sheets from the Government in 1987. They now need timber and nails to build the canteen.

The chairlady is married to the headmaster of Kamwathu Primary School. She appears to have high social status. She is the first wife; her husband has another two. She is 36, with 6 children, 4 of whom go to primary school, and one at secondary school. She farms 3 acres here, growing millet, sorghum and green grams, and one acre at Mukothima where maize and pigeon peas are grown. A member interviewed is much worse off, being a widow with 4

children, who earns money by doing casual farm work.

KATHANGACHINI SUBLOCATION

This area forms the extreme northeastern tip of Tharaka Division. The southern boundary is the Tana River, the northern boundary the Ura River. Beyond this lies Meru National Park. Kanjoro Sublocation bounds Kathangachini to the west. The landscape is dominated by the Gikingo Forest in the south west, and the land slopes east towards the Tana. This area is sparsely populated.

The Sublocation centre lies at Kathangachini Market on the Thangatha River. Here there is a mission, school and dispensary. There is also a permanent military presence guarding these posts because of the dangers posed by shifta. Local administrators appear very supportive of women's groups in the sublocation. The area is very dry and remote. Land is classified as Zone V, and in the extreme northeast, north of the Thangatha, Zone VI.

GROUP 53

This group is based about 3-4 hours walk from Kathangachini Market beneath the Gikingo Forest near Mbuura. They meet each Sunday at Mbuura Primary School. The group started in 1985, and was registered in 1987 (records cannot be found). There were originally 19 members, and now there are 23. The group farms a 1 acre shamba given by the group chairlady. They planted it this season with green grams and cotton. They used local seeds. They will use the money from the sale of harvest to buy mabati for members. They have also bought 10 goats for members in the last year. They raised money from making and selling baskets, and held a Harambee. The group aims to raise more funds, so that they can buy more goats and an ox plough. The group helps members out whenever they have a problem, and also help each other with weeding and planting. Its main problem is a lack of funds, but nevertheless, the group seems well organised and well motivated.

More land is available in this area, and again we see households having access to land in higher potential regions. For example, the chairlady's household farms 4 acres at Kathangachini, growing millet, sorghum, green grams and cotton, and another 3 acres at Kathithine, close to the National Park, where maize is grown. She uses fertilisers and pesticides, but no hired labour. No one spoken to had received agricultural extension advice. A member interviewed expressed a need for Katumani maize. Both respondents say that their main source of income is from cash cropping. Water is a big problem, and women report spending as much as 5 hours collecting water.

GROUP 54

This group is based about 2 hours from Kathangachini Market towards Maragwa in Gatue. The group started in November 1987, and is not registered. In the last year, membership has risen from 17 to 23 women. The group farms a 3 acre shamba which they bought in 1987 at 100KSh an acre. This area is classified as Ecological Zone V, Land Use and Vegetation 2/H; long fallows required, and steep, stoney hillsides. Agricultural Capability is N: unreliable rainfall and shallow soils implying only very localised potential for rainfed farming. On the shamba the group grows cotton and green grams. Money from proceeds is used to buy goats for members. So far they have bought 20 local goats. They raised money to buy the land from making and selling baskets, and held a Harambee. They aim to build a canteen, but at the moment they need money to hire someone to look after livestock and to help weed the shamba. The group has never been visited nor received any assistance of any kind.

This group seems to be made up of younger women; the chairlady is 24 years old, and a member interviewed 25. The member speaks a little English and is married to the headmaster of Manduru Primary School. Again, the women here farm larger areas of land. The member farms 7 acres, and the chairlady has 3 acres of food crops, and 1 acre of cash crops. Both women have planted Cassia trees. Both say that cash crops are their main source of income. The member says that she borrowed money from the group in 1988 to buy food. She used to be in group 55, but left when they did not register in 1987 (presumably when Group 54 started).

GROUP 55

This group is centred close to Kathangachini Market. It started in 1984, and the group says that they registered in August 1988. There were originally 15 members, and now there are 25. The group farms a 3 acre shamba which they claimed last year. They grow cotton and green grams. Last year they harvested 15 bags of cotton. The group has bought 3 goats, which are looked after by members. They raised money by selling baskets and held a Harambee. They are saving money to build a store, so that they can store and then sell food. They also aim to buy an ox plough and to buy a spray pump for the cotton. They were visited by the Maendeleo ya Wanawake Coordinator in 1987 who gave them advice on organising the group.

Again, this group seems to be made up of younger women; the chairlady is only 22, and a member interviewed 25. Both their husbands are working in formal sector employment; the Chairlady's husband works in Nairobi, and the member's husband is a field educator in Tharaka. The chairlady farms plots in different areas; she has 5 acres in Kathangachini, and 7 acres near the National Park. She says that she does not hire any labour to help her!

IRUNDUNI SUBLOCATION

Irunduni Sublocation is in complete contrast to Kathangachini, and is indeed very different to most of Tharaka. Irunduni forms part of what was previously Kanjoro Sublocation, in the northwest of the Division, bordering Tigania Division. There are disputes raging here about the boundary between the Divisions. The main market in Irunduni is at Mukothima, near the Thanantu River. The road from Mukothima leads to Mikinduri in Tigania. This area receives considerably higher rainfall, and soils are fertile and deep. Most of the land is classified as Zone III, with little Zone IV. Here farmers grow a whole range of crops, including maize and vegetables. Land is in private ownership, with reputedly much of the land belonging to the local chief, from whom farmers from other areas in Tharaka rent plots.

In consequence, wood collection is a greater problem than water, as there is no common land around, and farmers are only permitted to collect wood from their own land. The CANSAVE field animator is based here and spends much of his time working with women's groups. Here they are able to construct rainwater tanks. Farmers use many inputs in the area. Kamujene Farmers Training Centre is close by. The area is generally much more prosperous than the rest of Tharaka.

GROUP 56

This group meets at Thangatha Church on Fridays, and on Sundays after church. It was started in 1984, and registered in 1987. There were 26 members when it started, and now there are 22. They have a 1 acre farm, given to them by a friend. They grow maize, cotton and green grams. They sell the produce, and use money to buy cows and goats for members and put remainder in the bank. They use local seeds, and apply fertiliser and pesticide on maize, and spray the cotton. The group needs money to build a store, and they want to buy utensils and mabati for members.

The CDA visited when the group started, and advised them to hold a Harambee and to build a house for the group. The CANSAVE field animator visited the group last year, but it is not clear what advice was given.

The chairlady is 39 and monogamously married. Her husband works the other side of Meru Park. She farms 6 acres here, growing maize, millet, cow peas, green grams, pigeon peas, beans and sunflower, and another 1 acre plot at Kindani growing cotton. She uses improved seed for maize and sunflower, and uses pesticides on maize, millet and cotton. The household is able to sell surplus, and employs one permanent, and five casual labourers, and the group helps with harvesting and processing. She also hires a tractor for land preparation. She was once visited by the agricultural extension officer some time ago concerning cotton.

GROUP 57

This group meets at Irunduni Church, close to Mukothima. The group started in 1983 and was registered in 1985 (records could not be found). In the beginning there were 26 members and now there are 22. The group keeps chickens; they have 20 kept in a chicken house. They are also planning to build a store; they have mabati and nails, but need timber. They would also like to build a bakery and get tools in order to construct terraces on members farms. They need timber, and also a loan to stock the store.

The CDA visited the group in 1985 and advised them to register. CANSAVE field animator and an Extension Worker from Kamujene Farmers Training Centre have visited a number of times. In 1984 the group was given 1000 tree seedlings by Kamujene FTC. They distributed these amongst members, and sold the remainder.

The chairlady of the group is married to the local Chief. She is 38 years old and has 4 children at primary school. She is a teacher at Irunduni School, and is active in the local Teacher's Society. She speaks English. She farms 8 acres, growing maize, millet, green grams, beans, cotton and sunflower, and has planted Cassia and mango trees on her farm in 1984. Casual labour is employed on the farm. The AEO visited in March 1988, advising on maize. This woman is the only respondent who has received a loan in order to buy land. Members of the group also appear to be of high social and economic status. A member interviewed, whose husband is employed as a mason, farms 7 acres, employing 4 labourers.

GROUP 58

This group is situated close to Mukothima, on the Mikinduri road. The group started in 1979, with 12 members, and registered in 1983. There are now 37 members. The group farms a 2 acre shamba which belongs to Malindi Catholic Church. They have been cultivating this since 1985, and grow sunflower and green grams. Produce is sold, and money used to educate members children at secondary school. They use local seeds, and no fertilisers or pesticides. The group also has 12 local goats which are kept with members' herds. They have also got an ox plough, although unfortunately their ox died. The members also help each other with weeding on their farms.

The group has received inputs from a number of sources. In 1980 the County Council gave them two lorry loads of sand to build a nursery school at Mukothima. They were not able to raise enough money for other building materials, so in the end gave the sand to the local primary school. They would still like to start up a nursery school if they can raise the money. In 1983 the CDA arranged a loan of 8000KSh, which they used to buy goats and the ox plough. In 1985 CANSAVE visited, and in September 1988 someone from Kamujene FTC came and taught them to make fuel efficient clay jikos. The group says that it needs more land.

The group appears to be made up of better off women. The chairlady is 28 and monogamously married with 3 children at primary school. She farms 7 acres, growing maize, millet, cotton and sunflower. She hires 5 labourers, and the household's main source of income is from cash crops. The farm was visited by the AEO in 1987 giving advice on cotton. The respondent sprays cotton, and planted mango trees in 1986. A member interviewed is equally well-off. She speaks English, and is married to a local councillor. She is 27, and has 5 children, 3 of whom attend primary school. The household farms 7 acres, growing maize, millet, green grams, beans, cotton, sunflower, banana. Cassia trees were planted in 1988. 5 labourers are employed.

KANJORO SUBLOCATION

Lying at the northern edge of the Division, Kanjoro borders Kathangachini to the east, Gatunga to the south, Irunduni to the west, and Meru National Park to the north. The land varies in potential from III to V. Areas near the Ura River, Gathithini in the north, and towards Irunduni, are wetter and more fertile, whereas parts towards Gatunga and Kathangachini considerably drier. There are still problems with shifta in the eastern parts of the Sublocation.

The main market is at Gaciongo, just off the main road from Gatunga. There is a school here, and each Saturday, a large market which is well known for livestock. Traders and butchers come from upper Meru to buy goats here.

GROUP 59

This group meets at Kabambau Primary School near Gatithini. It is not known when the group started, but it registered in 1987. Membership has increased from 5 to 29. The group farms one half acre, the plot given to the group by the local Catholic Church. The group grows cotton and sunflower, and proceeds from sales are used to buy utensils for members. The group uses local seeds and no inputs are applied. The group has never been visited or received any advice or inputs. They aim to build a store so that they can store produce and sell when the prices are higher. The group says that they don't need any assistance, and don't have any problems.

The chairlady of the group is 40 years old and has 8 children. 5 children attend primary school. The household farms 14 acres, but this is divided among 3 sons. They grow millet, cow peas, green grams, cotton and sunflower; spray is used on cotton. The respondent is responsible for all the labour on her own plot of about 1.5 acres, sometimes assisted by younger children. Her husband doesn't help (she is second wife). Main source of income is from cash crops. The group also help with weeding.

A member interviewed is also 40 years old and is a second wife with 7 children, 2 at primary school. She farms 4 acres at Gatithini, growing sorghum, green grams, pigeon peas, cotton and sunflower, and another 2.5 acres at Thangata, growing maize and

millet. Labour is shared with her husband, and farming provides their income. The respondent says that the women in the group advise and help each other with farming and home economics - "they learn from each other". This group seems well organised, and self-reliant, neither expecting nor wanting help from outside. Their plan to build a store and keep their farm produce seems economically viable, and appears a relatively simple innovation which would require no extra labour, but could increase members' incomes.

GROUP 60

This group meets at the Methodist Church at Usueni about 1Km from Gaciongo Market each Saturday. The group started in 1984 with 13 members, and now there are 25 members. The group is not registered. The group has been farming a 1 acre shamba, given to them by a "friend", since 1987. Last season they grew green grams. they sold the harvest and put the money in a bank account. They also bought 1 goat. They would like to raise money to buy each member a cow. This group too says that it is saving to build a store at Gaciongo Market so that they can store maize and millet and sell when the price goes up.

The group was visited by the CDA in 1986, and were given home economics advice. They have received no other visits or assistance of any kind.

The chairlady of the group is married to the headmaster of Gaciongo Primary School. She has 6 children, 1 at secondary school, and 3 at primary school. The family farms 9 acres at Irunduni where they grow Katumani maize, employing permanent and casual labour. The respondent speaks English, and runs a duka at Gaciongo Market and is also building lodgings at the Market. This woman seems to represent a social and economic elite.

A member interviewed has recently moved from Kathangachini because of raids by shifta. She is a widow with 8 children; one child is at secondary school, and another attends St Lucy's School for the Blind at Igoji. She works very hard farming 5 acres, growing millet, sorghum, cow peas, green grams, cotton and sunflower. Her main source of income is from cash crops, although she sometimes has to do casual farm work.

GROUP 61

This group is based near Gatithini, about 5 hours walk from Gaciongo towards Irunduni. This is a more fertile area, classified as Zone III, where farmers are able to grow maize. The group started in 1986 with 5 members. Now there are 24 members. The group is not registered. The group recently bought a 2 acre plot at Riamikwa Primary School for 2600KSh. They will plant sunflower, cotton and green grams this season. They will save money to buy members goats and cows. They aim eventually to build a house for the group and buy mabati. They also plan to hire or buy an ox plough for members to use on their farms. The group was visited by the CANSAVE field animator in August 1988, and they want to learn

more about constructing a bakery. There has been no other visits and the group has received no assistance from outside.

This group seems to be made up of younger women of relatively high status. The chairlady is 30 years old, with 5 children, 2 at primary school. Her husband is a Pastor at Maua. She farms 6 acres and grows a variety of crops, including maize, cotton and sunflower, and lots of different vegetables. She has planted many trees. The households income sources include sales of surplus, cash crops, and remittances from the husband. Casual labour is hired. A group member is not so wealthy; she farms 1.5 acres, and earns money from weeding. She had to borrow money from the group when her child was ill recently.

GROUP 62

This group is based about 2 hours from Gaciongong towards Gatunga. The group started in 1985, and is not registered. Membership has risen from 5 to 50! They have a 2 acre shamba which was donated to them by a member this season. They have planted green grams and will use the money raised to buy chickens for the group. In 1985 they built a clinic for child immunisation. This is serviced as a mobile clinic by the Catholic Mission in Gatunga. The group has received no visits or help from any development agency. The group says that they need more money so that they can help members when they have problems, and that they can learn from each other.

The chairlady is a widow aged 50. She has two adult children; her daughter works as a teacher in Chaikariga and sends money to her mother. She farms 5 acres, helped by her son. A member interviewed appears better off; her husband works at a local school, and farms 4 acres here, and a further 1 acre at Mukothima where she grows maize, cow peas, green grams, onions, and has planted mango and paw paw trees. The farm at Mukothima was visited by Soil Conservation Extension Officers in 1987, and they were advised about tree planting. Labour is shared by husband and wife, and the respondent says that the group helps with crop processing.

GROUP 63

The group started in 1983, and registered in 1985. There were originally 6 members, and now there are 13. They meet at Karangakuru Primary School at Kauthani, about 1.5 hours from Gaciongong. They farm a one acre shamba, land donated by the group chairlady. They grew cotton last season and used money from sale of harvest to buy each member a kettle and a headsquare. The group also has 12 local goats which are kept with members. They aim to breed from these, so that each member can be given a goat, and then sell the rest and save the money in the bank. They also help each other with weeding on their shambas.

The group has been visited on three occasions. In 1984 the CDA visited and advised them to register. In 1985 the AEO advised about tree planting. In 1987 the Maendeleo ya Wanawake coordinator visited and gave advice on cooperation. The group has received no inputs.

Once again women here cultivate land in more fertile regions. Land here is classified as Zone V. The chairlady farms 2 acres at Kauthani, growing millet, sorghum, cow peas and cotton, and another acre near the National Park, where she grows maize, green grams and pigeon peas. She has also planted lots of trees, including Cassia in 1987. All labour is provided by the family; the respondent and her husband, assisted by the children in school holidays (there are 5 children all at primary school). Most of their income is from goat sales. A member interviewed is a widow of 40 with 4 children at primary school. She farms 5 acres here, growing millet, sorghum and cow peas, and one acre at Mukothima, growing maize and beans. She has also planted mango and cassia trees. She hires no labour, so only the children help her.

GROUP 64

This group is sited near Kanjoro village, about 5 hours walk from Gaciongo toward Meru National Park. It is not clear when the group started, and they say that they registered in 1987. There were 10 members when the group started, and now there are 42.

They farm a 3 acre shamba by the National Park which was given to them by a friend. They grow cotton. They save money from sale of harvest "to help when members have a problem". They also have 25 chickens which are kept in a chicken house at a member's home. They help each other with farm work, and visit members and buy them utensils. They also help when a member has a baby, and buy clothes for the baby. A member interviewed said that the group had bought an umbrella for her when she had a baby recently. The group has received no visits or any kind of help. The women in the group appear quite poor, but the group seems to function well on a self-help and mutual aid basis.

APPENDIX 2

SURVEY QUESTIONNAIRE

PART ONE - ALL RESPONDENTS

RESPONDENT'S POSITION:

WOMEN'S GROUP:

SUBLOCATION:

1. WHERE DO YOU LIVE? (name of nearest village)
HOW FAR IS THIS FROM THE NEAREST MARKET - how long does it take to walk to the market?
2. WHERE WERE YOU BORN - which Sublocation?
3. HOW OLD ARE YOU?
4. ARE YOU MARRIED? - Does your husband have another wife?
Are you the first wife?
Have you ever been married?
Are you widowed, divorced or separated?
5. HOW OLD WERE YOU WHEN YOU FIRST MARRIED?
6. DOES YOUR HUSBAND STAY AT HOME WITH YOU. OR DOES HE WORK AWAY FROM HOME - Where does he work?
How often does he come back home?
7. DO YOU HAVE ANY CHILDREN?
-Do you have any children at primary school? How many?
Do you have any children at secondary school? How many?
Do you have any children who stay at home? How many?
Do you have any grown up/adult children? How many?
8. HOW MANY PEOPLE ALTOGETHER LIVE IN YOUR COMPOUND?
Who are they?
9. HOW BIG IS THE PLOT WHICH YOU CULTIVATE?
10. DOES YOUR HOUSEHOLD/MEMBERS OF YOUR HOUSEHOLD CULTIVATE ANY OTHER PLOTS? - How big are they?
Where are they?
Who cultivates them?
11. WHICH CROPS DO YOU GROW ON YOUR PLOT?
12. DO YOU USE ANY IMPROVED SEED? - Which crops?
13. DO YOU USE ANY FERTILISERS? - Which crops?

- 14.DO YOU USE ANY PESTICIDES? - Which crops?
- 15.DO YOU APPLY MANURE? - Which crops?
- 16.HAVE YOU PLANTED ANY TREES ON YOUR PLOT?
What kind of trees?
When did you plant them?
- 17.DO YOU KEEP ANY CATTLE? Are they local or improved cattle?
- 18.DO YOU KEEP ANY GOATS? Are they local or improved goats?
- 19.DO YOU KEEP ANY SHEEP?
- 20.DO YOU USUALLY GROW ENOUGH FOOD TO FEED YOUR FAMILY THROUGHOUT THE YEAR? - NO- What food do you have to buy?
YES- Are you able to sell any surplus crops -what?
- 21.WHO ON THE FARM IS RESPONSIBLE FOR THE FOLLOWING TASKS?
Who does the.....LAND PREPARATION
PLANTING
WEEDING
TENDING LIVESTOCK
HARVESTING
PROCESSING
MARKETING
Do you hire any labour?
Do the children help?
- 22.WHICH IS THE BUSIEST TIME OF THE YEAR FOR YOU ON THE FARM -
When do you have to work hardest and why?
- 23.HOW LONG DOES IT NORMALLY TAKE YOU TO COLLECT WOOD?
Do you do this every day?
- 24.HOW LONG DOES IT NORMALLY TAKE YOU TO COLLECT WATER?
Do you do this every day?
- 25.DO YOU HAVE ANY KIND OF BUSINESS OR JOB - is there anything you do to earn money?
- 26.WHAT ARE YOUR HOUSEHOLD'S MAIN SOURCES OF INCOME - where does most of your family's money come from?
- 27.WHAT ARE YOUR HOUSEHOLD'S MAIN EXPENSES - What do you spend most of your money on?
- 28.DO YOU EVER HAVE TO BORROW MONEY?
-YES- When, who from, what for?
- 29.HAS YOUR FARM EVER BEEN VISITED BY THE AGRICULTURAL EXTENSION OFFICER?
-YES- When, What was the subject of the visit?
- 30.WHAT SORT OF ASSISTANCE WOULD YOU LIKE ON YOUR FARM - What would be most useful?

31. WHAT DO YOU THINK IS THE BIGGEST PROBLEM IN THARAKA - What needs to be done in Tharaka?
32. ARE YOU A MEMBER OF ANOTHER GROUP IN THE COMMUNITY?
-YES- Which group, where, activities
33. WHAT DO YOU THINK ARE THE BENEFITS OF BEING IN A WOMEN'S GROUP
- Why do you think so many women in Tharaka join women's groups - what's good about them?

NON-PARTICIPANTS ONLY

34. HAVE YOU EVER BEEN IN A WOMEN'S GROUP?
-YES-Where, which groups, when, why left
35. WHY AREN'T YOU IN A WOMEN'S GROUP NOW?

PART TWO - MEMBERS AND GROUP LEADERS

36. WHERE DOES YOUR WOMEN'S GROUP MEET?
How far is this from your home?
37. WHAT DAY DOES THE GROUP MEET?
38. HOW LONG HAVE YOU BEEN A MEMBER OF THE GROUP?
39. HAVE YOU EVER BEEN IN ANOTHER WOMEN'S GROUP?
-YES-Which group, where, when?
40. WHICH IS THE BUSIEST TIME OF THE YEAR FOR THE GROUP?
When does the group have to work hardest together?
Is this the same time as when you are busiest on your farm?
41. HOW DO YOU THINK THIS GROUP COMPARES WITH OTHER GROUPS IN THARAKA - Why?
42. WHAT PROBLEMS HAS THE GROUP ENCOUNTERED?
43. WHAT SORT OF ASSISTANCE DOES THE GROUP NEED?
44. WHAT ARE THE FUTURE PLANS OF THE GROUP?

PART THREE - GROUP LEADERS ONLY

45. PLEASE TELL ME ALL ABOUT THE GROUP'S ACTIVITIES

FARM: Do you farm a group plot?

Where is this plot?

How big is this plot?

Where did you get the plot from - does the group own the land? Is it borrowed?

How long have you cultivated the plot?

What crops do you grow?

Do you use any improved seed?

Do you use fertiliser?

Do you use pesticides?

Do you use manure?

Have you planted any trees on this plot?

Do you sell all the produce from the plot - what do you do with the money?

LIVESTOCK: What animals does the group keep?

- how many are there, where are they kept, are they improved stock?

Has the group bought any stock for members?

- how many, where kept, are they improved stock?

46. WHAT OTHER ACTIVITIES IS THE GROUP INVOLVED IN - full details

47. IS THE GROUP REGISTERED WITH THE DEPARTMENT OF SOCIAL SERVICES?

- YES - When did the group register?

How many members were there when it registered?

48. WHEN DID THE GROUP FIRST START?

49. HOW MANY MEMBERS WERE THERE WHEN IT FIRST STARTED?

50. HOW MANY MEMBERS ARE THERE NOW?

51. WHEN DID YOU BECOME GROUP LEADER?

52. HAS THE GROUP EVER BEEN VISITED BY THE AGRICULTURAL EXTENSION OFFICER? - YES - When, subject of visit

53. HAS THE GROUP EVER BEEN VISITED BY THE SDA?

- YES - When, subject of visit

54. HAS THE GROUP BEEN VISITED BY ANYONE ELSE?

- YES - Who, when, subject of visit

55. HAS THE GROUP RECEIVED ANY LOANS OR GRANTS?

- YES - From whom, when, amount, terms, purpose

56. HAS THE GROUP RECEIVED ANY OTHER INPUTS (eg: tools, seeds)?

- YES - What, from whom, when

57. WHAT SORT OF ASSISTANCE WOULD THE GROUP LIKE - WHAT WOULD BE MOST USEFUL TO THE GROUP?

APPENDIX 3

EXPLANATION OF AGRO-ECOLOGICAL POTENTIAL CLASSIFICATION

An Agro-Ecological Zone (AEZ) is a zone which is defined by its relevant agro-climatic factors (in the Tropics mainly moisture supply) and differentiated by soil pattern. The aim is to provide a framework for the ecological (natural) land use potential.

Generalised AEZ were established by the FAO in 1978. They are suited to make decisions in international and long term agricultural policy. In order to give advice to farmers in the district a more differentiated system showing yield probabilities and risks as well had to be developed (Jaetzold and Schmidt, 1983).

Figure 4.2 shows the agro-ecological zones in Meru District and was adapted from Jaetzold and Schmidt (1983). The zones in Meru District are outlined below.

TA = TROPICAL-ALPINE ZONE

- TA 0 = Rocks and Glaciers: no land use, National Park
- TA I = Tropical-Alpine Cattle and Sheep Zone: National Park, limited grazing allowed in some parts
- TA II = Tropical-Alpine Sheep Zone: National Park, very limited grazing potential

UH = UPPER HIGHLAND ZONE

- UH 0 = Forest Zone: Forest Reserve
- UH 1 = Sheep and Dairy Zone: Forest Reserve, important as a catchment area
- UH 2 = Pyrethrum-wheat Zone: Steep slopes, Forest Reserve
- UH 3 = Upper Wheat-barley Zone: Good yield potential for wheat, barley, vegetables
- UH 4 = Upper Highland Ranching Zone: not suitable for rainfed agriculture

LH = LOWER HIGHLAND ZONES

- LH 1 = Tea-Dairy Zone: Partly Forest Reserve
- LH 2 = Wheat/Maize-Pyrethrum Zone: Wheat, barley, sunflower, potatoes
- LM 3 = Wheat/Maize-Barley Zone: Maize, beans, potatoes, vegetables
- LH 4 = Cattle-Sheep-Barley Zone: Barley, wheat
- LH 5 = Lower Highland Ranching Zone: Not suitable for rainfed agriculture; short grass savanna, erosion danger if overgrazed

UM = UPPER MIDLAND ZONES

- UM 1 = Tea-Coffee Zone: Maize, finger millet, beans, potatoes
- UM 2 = Main Coffee Zone: Finger millet, potatoes, cabbages, sweet potatoes
- UM 3 = Marginal Coffee Zone: maize, sorghum, beans, sunflower good yield potential
- UM 4 = Sunflower-Maize Zone: Yield potential for Katumani maize, early maturing sorghum, beans and sunflower
- UM 5 = Livestock-Sorghum Zone
- UM 6 = Upper Midland Ranching Zone: Not suitable for rainfed agriculture

LM = LOWER MIDLAND ZONES

- LM 3 = Cotton Zone: Early maturing millet and dwarf sunflower
- LM 4 = Marginal Cotton Zone: Millet and dwarf sunflower; cotton fair to poor yield
- LM 5 = Lower Midland Livestock-Millet Zone: Early-maturing millet and dwarf sunflower; black and green gram, fair yield
- LM 6 = Lower Midland Ranching Zones: Not suitable for rainfed agriculture

IL = INNER LOWLAND ZONES

- IL 5 = Lowland Livestock-Millet Zone: as LM5
- IL 6 = Lowland Ranching Zone: Not suitable for rainfed agriculture

For analysis of groups in Tharaka, more detailed, largescale maps produced by ODA were used. The classifications are explained in the text. The Zones III, IV, V and VI roughly correspond to Jeazold and Schmidt's Zones LM3, LM4 ,LM5/IL5 and IL6.

APPENDIX 4

CLASSIFICATION OF SELF-HELP GROUP ACTIVITIES

Self-help group activities specified on the self-help registration application forms listed over one hundred different activities. These were classified into nineteen categories for analysis. These categories are shown below. Please note that no women's groups were registered as being active in Category Seventeen, sports.

01 FARMING

- 40 ANIMAL FEEDS
- 107 ARABLE FARMING
- 11 BEES
- 09 CATTLE
- 07 CHICKENS
- 111 COFFEE HARVESTING
- 140 COTTON GROWING
- 12 DAIRY
- 129 DIGGING
- 15 FARM PRODUCE
- 29 FISH
- 28 FISH POND
- 04 GENERAL FARMING
- 06 GOATS
- 12 GRADE COWS
- 19 GRAIN STORE
- 57 GRAIN STORE BUILDING
- 113 GRAZING
- 65 GROUP SHAMBA
- 125 HARVEST GROUP
- 16 HORTICULTURE
- 10 LIVESTOCK
- 16 MARKET GARDENING
- 142 MIRAA
- 126 PASSION FRUIT GROWING
- 17 PIGS
- 41 POSHO MILL
- 05 POULTRY
- 08 RABBITS
- 128 RANCHING
- 87 SHEEP
- 115 TEA BANDA
- 20 TEA BUYING CENTRE
- 121 TEA FARMING
- 144 TOBACCO
- 94 TRACTOR
- 18 VEGETABLE FARMING
- 14 WEEDING
- 13 ZERO GRAZING

02 CATTLE DIPS

103 CATTLE CRUSH
30 CATTLE DIP

03 SOIL CONSERVATION

23 SOIL CONSERVATION
85 TERRACING
22 TIMBER
21 TREE NURSERY
78 TREES
22 WOOD

04 NON-FARM INCOME GENERATING

46 BAKERY
131 BASKETS, BAGS
47 BOOKSHOP
51 BUILDING
141 BUTCHERY
51 CONSTRUCTION
108 COOKING
84 FOOD STORE, PRODUCE STORE
48 HANDICRAFTS
143 KIOSK
62 MAT MAKING
92 MATATU
112 PARAFFIN PUMP, SELLING PARAFFIN
110 PETROL STATION
100 SEWING, KNITTING
44 SHOP
45 STORE
81 STORE BUILDING
50 TOOL MAKING
90 TRADING
43 TRANSPORT
148 TRANSPORTING FARM PRODUCE
135 WEAVING

05 WATER

27 BORE HOLE
106 IRRIGATION
25 PIPED WATER
24 WATER
26 WATER TANKS

06 EDUCATION

91 ADULT EDUCATION
89 ADULT LITERACY CLASS
34 DAY CARE CENTRE
82 EDUCATION
35 EDUCATION FUND
93 LIBRARY
33 NURSERY SCHOOL
32 PRE-PRIMARY SCHOOL
86 PRIMARY SCHOOL
35 SCHOLARSHIPS FUND
79 SCHOOL
74 SCHOOL BUILDING
38 SCHOOL FEES
36 SECONDARY SCHOOL
136 TEACHERS ADVISORY CENTRE
138 TRADE SCHOOL
37 YOUTH POLYTECHNIC, VILLAGE POLYTECHNIC
49 YOUTH TRAINING CENTRE/EDUCATION

07 HEALTH

97 CLINIC
56 DISPENSARY BUILDING
80 HEALTH CENTRE
123 HEALTH COUNCIL
72 HEALTH EDUCATION
134 HOSPITAL

08 ENERGY

139 BIOGAS
31 ELECTRICITY, RURAL ELECTRIFICATION
109 FUEL
69 KEROSENE AND OIL
133 RENEWABLE ENERGY
146 STOVES

09 HOME IMPROVEMENTS, HOUSING

03 HOME IMPROVEMENTS
88 HOUSING
58 CHURCH BUILDING

10 CHURCH

132 CHOIR
83 CHURCH GROUP, MOSQUE
54 PRIMARY SCHOOL BUILDING
61 RELIGIOUS

11 WELFARE

116 CRIPPLES AND ORPHANS HOME
68 DISABLED
63 FOSTERING
147 HOME FOR GIRLS IN DESPAIR
130 WELFARE, HELPING THE NEEDY

12 SPECIFIC GROUPS

137 COMMUNITY GROUP
122 CONSUMER GROUP/SHOP
117 MOTHERS UNION
119 PARENTS GROUP
124 STUDENTS ASSOCIATION
95 TEACHERS GROUP

13 SOCIAL ACTIVITIES

104 DANCING
64 DRAMA
105 HAIR SALON
101 MUSIC
67 SOCIAL HALL
102 YOUTH CLUB

14 LAND

59 BUY PLOT
60 BUY PLOT TO BUILD SHOP
76 HIRE LAND
120 LAND BUYING
127 MOLE KILLING

15 CONSTRUCTION, BUILDING

39 ACCESS ROADS
149 BRICK MAKING
96 BRIDGE
52 HOUSE BUILDING
58 OFFICE BUILDING (CHIEF AND ASSISTANT CHIEF)
42 QUARRY, STONE CUTTING
145 ROAD BUILDING
55 SUBLOCATION OFFICE BUILDING

16 FUND RELATED

73 DIVISION/SUBLOCATION COMMITTEE FUND
114 LOAN FUND
70 REVOLVING LOAN FUND
118 SAVINGS AND CREDIT

17 SPORTS

77 DARTS CLUB
75 FOOTBALL
66 SPORTS CLUB
71 VIDEO SPORTS

18 MULTIPURPOSE

02 GENERAL
01 MULTIPURPOSE

19 NOT SPECIFIED

99 NOT SPECIFIED

TABLE 1 RESPONDENTS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
GROUP LEADER	1	64	33.7	33.7	33.7
GROUP MEMBER	2	61	32.1	32.1	65.8
NON-PARTICIPANT	3	65	34.2	34.2	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 2 RESPONDENTS' SUBLOCATION

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
KAMANYAKI	1	17	8.9	8.9	8.9
CHIAKARIGA	2	16	8.4	8.4	17.4
TUNYAI	3	13	6.8	6.8	24.2
MARIMANTI	4	26	13.7	13.7	37.9
TURIMA	5	25	13.2	13.2	51.1
NKONDI	6	15	7.9	7.9	58.9
KANYURU	7	13	6.8	6.8	65.8
GATUE	8	15	7.9	7.9	73.7
GATUNGA	9	23	12.1	12.1	85.8
KATHANGACHINI	10	6	3.2	3.2	88.9
IRUNDUNI	11	8	4.2	4.2	93.2
KANJORO	12	13	6.8	6.8	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 3 RESPONDENTS' CHILDREN

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	8	4.2	4.3	4.3
	1	13	6.8	7.0	11.2
	2	15	7.9	8.0	19.3
	3	27	14.2	14.4	33.7
	4	39	20.5	20.9	54.5
	5	29	15.3	15.5	70.1
	6	29	15.3	15.5	85.6
	7	13	6.8	7.0	92.5
	8	8	4.2	4.3	96.8
	9	2	1.1	1.1	97.9
	10	1	.5	.5	98.4
	11	3	1.6	1.6	100.0
	.	3	1.6	MISSING	
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	187	MISSING CASES	3		

TABLE 4 SIZE OF RESPONDENTS' HOUSEHOLDS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	2	3	1.6	1.6	1.6
	3	2	1.1	1.1	2.6
	4	7	3.7	3.7	6.3
	5	24	12.6	12.6	18.9
	6	25	13.2	13.2	32.1
	7	20	10.5	10.5	42.6
	8	31	16.3	16.3	58.9
	9	25	13.2	13.2	72.1
	10	16	8.4	8.4	80.5
	11	10	5.3	5.3	85.8
	12	9	4.7	4.7	90.5
	13	5	2.6	2.6	93.2
	14	3	1.6	1.6	94.7
	15	5	2.6	2.6	97.4
	17	1	.5	.5	97.9
	19	2	1.1	1.1	98.9
	20	1	.5	.5	99.5
	27	1	.5	.5	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 5 PLOT CULTIVATED BY RESPONDENTS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
0	1	1	.5	.5	.5
LESS THAN 2.5ac	2	57	30.0	30.0	30.5
LESS THAN 5ac	3	67	35.3	35.3	65.8
LESS THAN 7.5ac	4	38	20.0	20.0	85.8
LESS THAN 10ac	5	13	6.8	6.8	92.6
LESS THAN 15ac	6	7	3.7	3.7	96.3
AT LEAST 15ac	7	4	2.1	2.1	98.4
DK/NA	9	3	1.6	1.6	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 6 RESPONDENTS PLANTING TREES

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NO	2	114	60.0	60.3	60.3
YES MANGO	3	18	9.5	9.5	69.8
YES FRUIT	4	14	7.4	7.4	77.2
YES CASSIA	5	22	11.6	11.6	88.9
YES NON-FRUIT	6	2	1.1	1.1	89.9
YES FRUIT + NONFRUIT	7	19	10.0	10.1	100.0
	.	1	.5	MISSING	
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	189	MISSING CASES	1		

TABLE 7 YEAR TREES PLANTED

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NS/DK	1	13	6.8	6.9	6.9
NA	2	114	60.0	60.3	67.2
LESS THAN 2 YRS AGO	3	22	11.6	11.6	78.8
2-5 YRS AGO	4	9	4.7	4.8	83.6
MORE THAN 5 YRS AGO	5	31	16.3	16.4	100.0
	.	1	.5	MISSING	
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	189	MISSING CASES	1		

TABLE 8 PEAK LABOUR TIME

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
LAND PREPARATION	1	12	6.3	6.3	6.3
PLANTING	2	9	4.7	4.7	11.1
WEEDING	3	69	36.3	36.3	47.4
HARVESTING	4	27	14.2	14.2	61.6
PROCESSING	5	4	2.1	2.1	63.7
ALL THE TIME	6	37	19.5	19.5	83.2
DK	7	7	3.7	3.7	86.8
PLANTING & WEEDING	8	7	3.7	3.7	90.5
HARVEST & WEEDING	9	18	9.5	9.5	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 9 WATER COLLECTION

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
TIME SPENT COLLECTING WATER MINUTES	5	1	.5	.5	.5
	10	2	1.1	1.1	1.6
	15	4	2.1	2.2	3.8
	16	1	.5	.5	4.3
	20	5	2.6	2.7	7.0
	25	1	.5	.5	7.6
	30	15	7.9	8.1	15.7
	60	42	22.1	22.7	38.4
	90	9	4.7	4.9	43.2
	120	50	26.3	27.0	70.3
	150	4	2.1	2.2	72.4
	180	23	12.1	12.4	84.9
	210	1	.5	.5	85.4
	240	19	10.0	10.3	95.7
	300	4	2.1	2.2	97.8
	360	4	2.1	2.2	100.0
	.	5	2.6	MISSING	
TOTAL		190	100.0	100.0	
VALID CASES	185	MISSING CASES	5		

TABLE 10 TIME SPENT COLLECTING WOOD

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
MINUTES	10	14	7.4	7.7	7.7
	15	4	2.1	2.2	9.9
	20	20	10.5	11.0	21.0
	30	55	28.9	30.4	51.4
	35	2	1.1	1.1	52.5
	40	8	4.2	4.4	56.9
	60	37	19.5	20.4	77.3
	90	9	4.7	5.0	82.3
	120	15	7.9	8.3	90.6
	150	4	2.1	2.2	92.8
	180	7	3.7	3.9	96.7
	210	2	1.1	1.1	97.8
	240	2	1.1	1.1	98.9
	270	1	.5	.6	99.4
	300	1	.5	.6	100.0
	.	9	4.7	MISSING	
TOTAL		190	100.0	100.0	
VALID CASES	181	MISSING CASES	9		

TABLE 11 RESPONDENTS RECEIVING CREDIT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
YES, NOT SPECIFIED	1	2	1.1	1.1	1.1
NO	2	167	87.9	88.4	89.4
YES, FORMAL	3	1	.5	.5	89.9
YES, INFORMAL	4	17	8.9	9.0	98.9
YES, FROM GROUP	5	2	1.1	1.1	100.0
	.	1	.5	MISSING	
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	189	MISSING CASES	1		

TABLE 12 USE OF CREDIT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NOT SPECIFIED	1	2	1.1	1.1	1.1
SCHOOL FEES	2	11	5.8	5.8	6.9
FOOD	3	2	1.1	1.1	7.9
MEDICAL & EMERG	4	6	3.2	3.2	11.1
FARM & LAND	5	1	.5	.5	11.6
NA	8	167	87.9	88.4	100.0
	.	1	.5	MISSING	
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	189	MISSING CASES	1		

TABLE 13 CLASSIFICATION OF RESPONDENTS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
FEMALE HOUSEHOLD HEAD	1	35	18.4	18.4	18.4
FEMALE FARM MANAGER	2	53	27.9	27.9	46.3
JOINT FARM MANAGER	3	93	48.9	48.9	95.3
LIVING IN FEMALE HEADED HH	8	4.2	4.2	99.5	
DK	5	1	.5	.5	100.0
		-----	-----	-----	
	TOTAL	190	100.0	100.0	
VALID CASES	190	MISSING CASES	0		

TABLE 14 CROPS GROWN BY RESPONDENTS

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
COTTON	COTTON	66	7.9	35.3
SUNFLOWER	SUNFLO	55	6.6	29.4
MAIZE	MAIZE	69	8.2	36.9
MILLET	MILLET	181	21.6	96.8
SORGHUM	SORGHU	128	15.3	68.4
COW PEAS	CPEAS	126	15.0	67.4
GREEN GRAM	GGRAM	136	16.2	72.7
PIGEON PEAS	PPEAS	46	5.5	24.6
BEANS	BEANS	21	2.5	11.2
CASSAVA	CASSAVA	4	0.5	2.1
VEGETABLES	VEGS	3	0.4	1.6
OTHERS	OTHER	3	0.4	1.6
		-----	-----	-----
	TOTAL RESPONSES	838	100.0	448.1

3 MISSING CASES

187 VALID CASES

TABLE 15 PARTICIPATION IN FARM TASKS BY RESPONDENTS

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
LAND PREPARATION	LANDP	72	11.5	43.1
PLANTING	PLANTG	75	12.0	44.9
WEEDING	WEEDG	68	10.8	40.7
LIVESTOCK	LIVEST	60	9.6	35.9
HARVEST	HARVST	142	22.6	85.0
PROCESSING	PROCES	160	25.5	95.8
MARKETING	MRKTG	50	8.0	29.9
		-----	-----	-----
TOTAL RESPONSES		627	100.0	375.4

23 MISSING CASES

167 VALID CASES

TABLE 16 RESPONDENTS' MAIN SOURCES OF INCOME

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
CASH CROPPING	CASHCR	71	30.1	37.6
LIVESTOCK	LIVESK	50	21.2	26.5
SURPLUS	SRPLUS	15	6.4	7.9
RESPONDENTS JOB	RESJOB	16	6.8	8.5
RESP. CASUAL	RESCAS	43	18.2	22.8
CASH REMITTENCES	CSHREM	5	2.1	2.6
HUSBAND	HUSBND	33	14.0	17.5
OTHERS	OTHERS	3	1.3	1.6
		-----	-----	-----
TOTAL RESPONSES		236	100.0	124.9

1 MISSING CASES

189 VALID CASES

TABLE 17 RESPONDENTS' MAIN HUSEHOLD EXPENSES

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
SCHOOL FEES	SCHFEE	114	25.4	60.0
MEDICAL	MEDICL	8	1.8	4.2
FOOD	FOOD	145	32.3	76.3
CLOTHES	CLOTHS	151	33.6	79.5
FARM EXPENSES	FARMEX	18	4.0	9.5
OTHERS	OTHR	13	2.9	6.8
		-----	-----	-----
TOTAL RESPONSES		449	100.0	236.3

0 MISSING CASES 190 VALID CASES

TABLE 18 PROBLEMS IN THARAKA IDENTIFIED BY RESPONDENTS

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
WATER	WATR	171	53.4	91.9
COMMUNICATIONS	COMM	24	7.5	12.9
HEALTH	HEALTH	10	3.1	5.4
DROUGHT	DROGHT	96	30.0	51.6
OTHERS	OTERS	19	5.9	10.2
		-----	-----	-----
TOTAL RESPONSES		320	100.0	172.0

4 MISSING CASES 186 VALID CASES

TABLE 19 BENEFITS OF PARTICIPATING IN WOMEN'S FARMING GROUPS

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
CONTINGENCY	CONT	48	11.1	25.5
HOME IMPROVEMENT	HIMP	63	14.5	33.5
FARM IMPROVEMENT	FIMP	44	10.2	23.4
SOCIAL	SOCIAL	95	21.9	50.5
INCOME GENERATING	INCOGG	95	21.9	50.5
SCHOOL FEES	SFEES	50	11.5	26.6
COMMUNUAL LABOUR	COMLAB	26	6.0	13.8
OTHERS	OTHERS	12	2.8	6.4
		-----	-----	-----
TOTAL RESPONSES		433	100.0	230.3

2 MISSING CASES

188 VALID CASES

TABLE 20 MARITAL STATUS OF RESPONDENTS

	COUNT EXP VAL STD RES	RESPON		ROW TOTAL
		PARTICIP	NON-PART	
		ANT	ICIPANT	
		1	3	
MARITAS	-----	-----	-----	-----
	1	2	11	13
SINGLE/NEVER MAR		8.6	4.4	6.8%
		-2.2	3.1	
	2	10	9	19
WIDOW		12.5	6.5	10.0%
		-.7	1.0	
	3	10	1	11
SEP/DIV		7.2	3.8	5.8%
		1.0	-1.4	
	5	83	27	110
MONOGAMOUS MARRI		72.4	37.6	57.9%
		1.2	-1.7	
	6	9	7	16
POLYGAMOUS MARRI		10.5	5.5	8.4%
		-.5	.7	
	7	11	10	21
POLY. MARRIED 2+		13.8	7.2	11.1%
		-.8	1.1	
	COLUMN	125	65	190
	TOTAL	65.8%	34.2%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.< 5
26.11016	5	0.0001	3.763	2 OF 12 (16.7%)

STATISTIC	VALUE	SIGNIFICANCE
-----	-----	-----
KENDALL'S TAU B	-0.06161	0.1795
KENDALL'S TAU C	-0.06548	0.1795
NUMBER OF MISSING OBSERVATIONS =	0	

TABLE 21 AGE OF RESPONDENTS

		RESPO		
	COUNT	PARTICIP	NON-PART	ROW
	EXP VAL	ANT	ICIPANT	TOTAL
	STD RES	1	3	
AGEI				
	1	2	0	2
15-19 YRS		1.3	.7	1.1%
		.6	-.8	
	2	13	8	21
20-24 YRS		13.7	7.3	11.2%
		-.2	.3	
	3	31	16	47
25-29 YRS		30.7	16.3	25.1%
		.1	-.1	
	4	13	7	20
30-34 YRS		13.0	7.0	10.7%
		.0	.0	
	5	26	17	43
35-39 YRS		28.1	14.9	23.0%
		-.4	.5	
	6	13	11	24
40-44 YRS		15.7	8.3	12.8%
		-.7	.9	
	7	10	5	15
45-49 YRS		9.8	5.2	8.0%
		.1	-.1	
	8	14	1	15
50 YRS AND OVER		9.8	5.2	8.0%
		1.3	-1.8	
	COLUMN	122	65	187
	TOTAL	65.2%	34.8%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.
8.14374	7	0.3201		0.695
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		-0.03374		0.3007
KENDALL'S TAU C		-0.04141		0.3007
NUMBER OF MISSING OBSERVATIONS =		3		

TABLE 22 RESPONDENTS WITH HUSBANDS WHO WORK AWAY FROM HOME

HUSBWA	COUNT		RESPON		ROW TOTAL
	EXP VAL	STD RES	PARTICIPANT	NON-PARTICIPANT	
			1	3	
YES LOCALLY	1		11	1	12
			7.9	4.1	6.3%
			1.1	-1.5	
NO	2		76	41	117
			77.0	40.0	61.6%
			-.1	.2	
N/A	3		22	21	43
			28.3	14.7	22.6%
			-1.2	1.6	
YES FARAWAY	4		16	2	18
			11.8	6.2	9.5%
			1.2	-1.7	
COLUMN			125	65	190
TOTAL			65.8%	34.2%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
11.96097	3	0.0075		4.105	1 OF 8 (12.5%)
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.05401		0.2173	
KENDALL'S TAU C		0.05407		0.2173	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 23 RESPONDENTS' HOUSEHOLDS

HHCLAS	COUNT	RESPON		ROW TOTAL	
	EXP VAL	PARTICIP	NON-PART		
	STD RES	ANT	ICIPANT		
		1	3		
	1	9	5	14	
FEMALE-HEAD NUCL		9.2	4.8	7.4%	
		-.1	.1		
	2	12	14	26	
FEMALE HEAD EXTE		17.1	8.9	13.7%	
		-1.2	1.7		
	3	42	9	51	
MONO NUCLEAR		33.6	17.4	26.8%	
		1.5	-2.0		
	4	41	20	61	
MONO EXTENDED		40.1	20.9	32.1%	
		.1	-.2		
	5	6	4	10	
POLY NUCLEAR		6.6	3.4	5.3%	
		-.2	.3		
	6	15	13	28	
POLY EXTENDED		18.4	9.6	14.7%	
		-.8	1.1		
	COLUMN	125	65	190	
	TOTAL	65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
12.74566	5	0.0259		3.421	2 OF 12 (16.7%)
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.03252		0.3095	
KENDALL'S TAU C		0.03845		0.3095	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 24 RESPONDENTS' SELF-SUFFICIENCY

		RESPO			
SELS	COUNT	PARTICIP	NON-PART	ROW	
	EXP VAL	ANT	ICIPANT	TOTAL	
	STD RES	1	3		
JUST ENOUGH	1	24	0	24	
		15.8	8.2	12.6%	
		2.1	-2.9		
BUY FOOD	2	83	64	147	
		96.7	50.3	77.4%	
		-1.4	1.9		
SELL SURPLUS	3	18	1	19	
		12.5	6.5	10.0%	
		1.6	-2.2		
COLUMN		125	65	190	
TOTAL		65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F	CELLS WITH E.F.< 5	
25.23550	2	0.0000	6.500	NONE	
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.06617		0.1751	
KENDALL'S TAU C		0.05440		0.1751	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 25 INCOME GENERATING ACTIVITIES BY RESPONDENTS

	COUNT	RESPO		ROW TOTAL
		PARTICIP	NON-PART	
	EXP VAL STD RES	ANT	ICIPANT	
		1	3	
INCOGR				
	2	89	36	125
NO		82.2	42.8	65.8%
		.7	-1.0	
	3	6	0	6
FORMAL		3.9	2.1	3.2%
		1.0	-1.4	
	4	23	15	38
CASUAL-FARM		25.0	13.0	20.0%
		-.4	.6	
	7	7	14	21
BUSINESS/MARKET		13.8	7.2	11.1%
		-1.8	2.5	
	COLUMN TOTAL	125	65	190
		65.8%	34.2%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.< 5
15.04223	3	0.0018	2.053	2 OF 8 (25.0%)
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		0.19305		0.0028
KENDALL'S TAU C		0.18571		0.0028
NUMBER OF MISSING OBSERVATIONS =		0		

TABLE 26 CASUAL INCOME GENERATING BY RESPONDENTS

		RESPO			
RESCAS	COUNT			ROW TOTAL	
	EXP VAL	PARTICIP	NON-PART		
	STD RES	ANT	ICIPANT		
		1	3		
	1	27	16	43	
YES		28.3	14.7	22.6%	
		-.2	.3		
	2	98	49	147	
NO		96.7	50.3	77.4%	
		.1	-.2		
	COLUMN	125	65	190	
	TOTAL	65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F. < 5
0.08324	1	0.7730		14.711	NONE
0.22206	1	0.6375		(BEFORE YATES CORRECTION)	
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		-0.03419		0.3192	
KENDALL'S TAU C		-0.02715		0.3192	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 27 RESPONDENTS CLASSIFICATION

		RESPO		
RESPCL	COUNT	PARTICIP	NON-PART	ROW
	EXP VAL	ANT	ICIPANT	TOTAL
	STD RES	1	3	
	1	20	15	35
FEMALE HH		23.0	12.0	18.4%
		-.6	.9	
	2	33	20	53
FEMALE MANAGER		34.9	18.1	27.9%
		-.3	.4	
	3	69	24	93
JOINT MANAGER		61.2	31.8	48.9%
		1.0	-1.4	
	4	3	6	9
LIVING IN FEMALE		5.9	3.1	4.7%
		-1.2	1.7	
	COLUMN	125	65	190
	TOTAL	65.8%	34.2%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.
8.58601	3	0.0353		3.079
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		-0.07015		0.1522
KENDALL'S TAU C		-0.07568		0.1522
NUMBER OF MISSING OBSERVATIONS =		0		

TABLE 28 STOCK KEPT BY RESPONDENTS

	COUNT EXP VAL STD RES	RESPO		ROW TOTAL
		PARTICIP ANT	NON-PART ICIPANT	
		1	3	
LIVIND				
	1	73	7	80
CATTLE&SHEEP&GOA		52.6	27.4	42.1%
		2.8	-3.9	
	2	12	3	15
CATTLE & GOATS		9.9	5.1	7.9%
		.7	-.9	
	3	13	8	21
GOATS & SHEEP		13.8	7.2	11.1%
		-.2	.3	
	4	10	5	15
GOATS		9.9	5.1	7.9%
		.0	-.1	
	7	9	8	17
CATTLE & SHEEP		11.2	5.8	8.9%
		-.7	.9	
	8	8	34	42
NONE		27.6	14.4	22.1%
		-3.7	5.2	
	COLUMN TOTAL	125 65.8%	65 34.2%	190 100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.< 5
66.55040	5	0.0000	5.132	NONE
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		0.51622		0.0000
KENDALL'S TAU C		0.59634		0.0000
NUMBER OF MISSING OBSERVATIONS =		0		

TABLE 29 LABOUR USE BY RESPONDENTS

		RESPO		ROW TOTAL	
	COUNT	PARTICIP	NON-PART		
	EXP VAL	ANT	ICIPANT		
	STD RES	1	3		
LABOUR		-----+-----+-----+-----+-----			
RESPONDENT	1	15	21	36	
		23.7	12.3	18.9%	
		-1.8	2.5		
		-----+-----+-----+-----+-----			
FAMILY ONLY	2	54	25	79	
		52.0	27.0	41.6%	
		.3	-.4		
		-----+-----+-----+-----+-----			
FAMILY & CASUAL	4	16	1	17	
		11.2	5.8	8.9%	
		1.4	-2.0		
		-----+-----+-----+-----+-----			
FAMILY & REGULAR	5	17	0	17	
		11.2	5.8	8.9%	
		1.7	-2.4		
		-----+-----+-----+-----+-----			
FAMILY HIRES OUT	6	23	18	41	
		27.0	14.0	21.6%	
		-.8	1.1		
		-----+-----+-----+-----+-----			
COLUMN		125	65	190	
TOTAL		65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
-----	-----	-----		-----	-----
26.15111	4	0.0000		5.816	NONE
STATISTIC		VALUE		SIGNIFICANCE	
-----		-----		-----	
KENDALL'S TAU B		-0.14220		0.0161	
KENDALL'S TAU C		-0.16288		0.0161	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 30 RESPONDENTS' INCOME SOURCES

		RESPO		ROW TOTAL	
	COUNT	PARTICIP	NON-PART		
	EXP VAL	ANT	ICIPANT		
	STD RES	1	3		
INCOSO					
RESPONDENT	1	19	23	42	
		27.6	14.4	22.1%	
		-1.6	2.3		
RESP&HH	2	3	0	3	
		2.0	1.0	1.6%	
		.7	-1.0		
HOUSEHOLD	3	18	1	19	
		12.5	6.5	10.0%	
		1.6	-2.2		
LIVESTOCK ONLY	4	20	14	34	
		22.4	11.6	17.9%	
		-.5	.7		
FARM ONLY	5	41	21	62	
		40.8	21.2	32.6%	
		.0	.0		
RESP&FARM	6	7	3	10	
		6.6	3.4	5.3%	
		.2	-.2		
HH&FARM	7	11	0	11	
		7.2	3.8	5.8%	
		1.4	-1.9		
ALL	8	1	0	1	
		.7	.3	.5%	
		.4	-.6		
OTHERS	9	5	3	8	
		5.3	2.7	4.2%	
		-.1	.2		
COLUMN		125	65	190	
TOTAL		65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
23.60889	8	0.0027		0.342	7 OF 18 (38.9%)
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		-0.13739		0.0171	
KENDALL'S TAU C		-0.16432		0.0171	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 31 AREA CULTIVATED BY RESPONDENTS

PLOTSI	COUNT EXP VAL STD RES	RESPO		ROW TOTAL
		PARTICIP	NON-PART	
		ANT	ICIPANT	
		1	3	
LESS THAN 2.5ac	2	23	35	58
		38.2	19.8	30.5%
		-2.5	3.4	
2.5 - LESS THAN 5	3	43	24	67
	5	44.1	22.9	35.3%
		-.2	.2	
5 - LESS THAN 10	5	46	5	51
	10	33.6	17.4	26.8%
		2.1	-3.0	
10 - LESS THAN 15	6	7	0	7
	15	4.6	2.4	3.7%
		1.1	-1.5	
AT LEAST 15ac	7	4	0	4
		2.6	1.4	2.1%
		.8	-1.2	
DK/NA	9	2	1	3
		2.0	1.0	1.6%
		.0	.0	
COLUMN		125	65	190
TOTAL		65.8%	34.2%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F.< 5
36.89704	5	0.0000	1.026	6 OF 12 (50.0%)

STATISTIC	VALUE	SIGNIFICANCE
KENDALL'S TAU B	-0.39696	0.0000
KENDALL'S TAU C	-0.44831	0.0000
NUMBER OF MISSING OBSERVATIONS = 0		

TABLE 32 RESPONDENTS' BIRTHPLACE

BIRTHP	COUNT EXP VAL STD RES	RESPO		ROW TOTAL	
		PARTICIP	NON-PART		
		ANT	ICIPANT		
		1	3		
THIS SUB-LOCATIO	1	57	19	76	
		50.0	26.0	40.0%	
		1.0	-1.4		
THIS LOCATION	2	18	13	31	
		20.4	10.6	16.3%	
		-.5	.7		
THIS DIVISION	3	36	12	48	
		31.6	16.4	25.3%	
		.8	-1.1		
THIS DISTRICT	4	5	2	7	
		4.6	2.4	3.7%	
		.2	-.3		
OUTSIDE DISTRICT	5	9	19	28	
		18.4	9.6	14.7%	
		-2.2	3.0		
COLUMN		125	65	190	
TOTAL		65.8%	34.2%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
19.67864	4	0.0006		2.395	2 OF 10 (20.0%)
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.18785		0.0024	
KENDALL'S TAU C		0.21485		0.0024	
NUMBER OF MISSING OBSERVATIONS =		0			

TABLE 33 CASH CROPS GROWN BY RESPONDENTS

	COUNT	RESPO		ROW TOTAL
		PARTICIP	NON-PART	
		ANT	ICIPANT	
	EXP VAL STD RES	1	3	
CASHC				
	1	30	3	33
COTTON&SUNFLOWER		21.7	11.3	17.4%
		1.8	-2.5	
	2	31	4	35
COTTON ONLY		23.0	12.0	18.4%
		1.7	-2.3	
	3	12	10	22
SUNFLOWER ONLY		14.5	7.5	11.6%
		- .7	.9	
	8	52	47	99
NONE		65.1	33.9	52.1%
		-1.6	2.3	
	9	0	1	1
		.7	.3	.5%
		- .8	1.1	
	COLUMN TOTAL	125 65.8%	65 34.2%	190 100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
28.22072	4	0.0000	0.342	2 OF 10 (20.0%)

STATISTIC	VALUE	SIGNIFICANCE
KENDALL'S TAU B	0.33006	0.0000
KENDALL'S TAU C	0.35734	0.0000
NUMBER OF MISSING OBSERVATIONS =	0	

TABLE 34 RESPONDENTS USING IMPROVED SEEDS

		RESPO		
	COUNT	PARTICIP	NON-PART	ROW
	EXP VAL	ANT	ICIPANT	TOTAL
	STD RES	1	3	
IMSEED				
YES	1	40	7	47
		31.1	15.9	24.9%
		1.6	-2.2	
NO	2	85	57	142
		93.9	48.1	75.1%
		-.9	1.3	
	COLUMN	125	64	189
	TOTAL	66.1%	33.9%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.
CELLS WITH E.F. < 5				
8.95474	1	0.0028		15.915
10.05044	1	0.0015		(BEFORE YATES CORRECTION)
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		0.23060		0.0008
KENDALL'S TAU C		0.18868		0.0008
NUMBER OF MISSING OBSERVATIONS = 1				

CELLS WITH E.F. < 5

NONE

(BEFORE YATES CORRECTION)

TABLE 35 TREES PLANTED BY RESPONDENTS

	COUNT	RESPO		ROW TOTAL
		PARTICIP	NON-PART	
		ANT	ICIPANT	
		1	3	
FERTS				
	1	12	1	13
YES		8.6	4.4	6.9%
		1.2	-1.6	
	2	113	63	176
NO		116.4	59.6	93.1%
		-.3	.4	
	COLUMN	125	64	189
	TOTAL	66.1%	33.9%	100.0%

CHI-SQUARE	D.F.	SIGNIFICANCE	MIN E.F.	CELLS WITH E.F. < 5
3.10648	1	0.0780	4.402	1 OF 4 (25.0%)
4.26911	1	0.0388	(BEFORE YATES CORRECTION)	

STATISTIC	VALUE	SIGNIFICANCE
KENDALL'S TAU B	0.15029	0.0197
KENDALL'S TAU C	0.07200	0.0197
NUMBER OF MISSING OBSERVATIONS =	1	

TABLE 36 PESTICIDE USE BY RESPONDENTS

PESTS	COUNT	RESPO		ROW TOTAL	
	EXP VAL	PARTICIP	NON-PART		
	STD RES	ANT	ICIPANT		
		1	3		
YES	1	72	5	77	
		50.9	26.1	40.7%	
		3.0	-4.1		
NO	2	53	59	112	
		74.1	37.9	59.3%	
		-2.4	3.4		
	COLUMN	125	64	189	
	TOTAL	66.1%	33.9%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
41.42164	1	0.0000		26.074	NONE
43.45938	1	0.0000		(BEFORE YATES CORRECTION)	
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.47952		0.0000	
KENDALL'S TAU C		0.44601		0.0000	
NUMBER OF MISSING OBSERVATIONS =		1			

TABLE 37 USE OF MANURE BY RESPONDENTS

MANURE	COUNT	RESPO		ROW TOTAL	
	EXP VAL	PARTICIP	NON-PART		
	STD RES	ANT	ICIPANT		
		1	3		
YES	1	54	1	55	
		36.4	18.6	29.1%	
		2.9	-4.1		
NO	2	71	63	134	
		88.6	45.4	70.9%	
		-1.9	2.6		
COLUMN		125	64	189	
TOTAL		66.1%	33.9%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
33.57806	1	0.0000		18.624	NONE
35.56750	1	0.0000		(BEFORE YATES CORRECTION)	
STATISTIC		VALUE		SIGNIFICANCE	
KENDALL'S TAU B		0.43381		0.0000	
KENDALL'S TAU C		0.37300		0.0000	
NUMBER OF MISSING OBSERVATIONS =		1			

TABLE 38 TREES PLANTED BY RESPONDENTS

		RESPO			
TREES	COUNT	PARTICIPANT	NON-PARTICIPANT	ROW TOTAL	
	EXP VAL				
	STD RES				
		1	3		
YES	1	65	10	75	
		49.6	25.4	39.7%	
		2.2	-3.1		
NO	2	60	54	114	
		75.4	38.6	60.3%	
		-1.8	2.5		
COLUMN		125	64	189	
TOTAL		66.1%	33.9%	100.0%	
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.	CELLS WITH E.F.< 5
-----	-----	-----		-----	-----
21.90366	1	0.0000		25.397	NONE
23.39870	1	0.0000		(BEFORE YATES CORRECTION)	
STATISTIC		VALUE		SIGNIFICANCE	
-----		-----		-----	
KENDALL'S TAU B		0.35186		0.0000	
KENDALL'S TAU C		0.32586		0.0000	
NUMBER OF MISSING OBSERVATIONS =		1			

TABLE 39 EXTENSION VISITS RECEIVED BY RESPONDENTS

		RESPO		
EXTVIS	COUNT			ROW TOTAL
	EXP VAL	PARTICIP	NON-PART	
	STD RES	ANT	ICIPANT	
		1	3	
YES	1	24	3	27
		17.8	9.2	14.2%
		1.5	-2.1	
NEVER	2	101	62	163
		107.2	55.8	85.8%
		-.6	.8	
COLUMN		125	65	190
TOTAL		65.8%	34.2%	100.0%
CHI-SQUARE	D.F.	SIGNIFICANCE		MIN E.F.
CELLS WITH E.F.< 5				
6.31294	1	0.0120		9.237
7.46132	1	0.0063		(BEFORE YATES CORRECTION)
STATISTIC		VALUE		SIGNIFICANCE
KENDALL'S TAU B		0.19817		0.0032
KENDALL'S TAU C		0.13130		0.0032
NUMBER OF MISSING OBSERVATIONS =		0		

TABLE 40 INNOVATIONS ADOPTED BY RESPONDENTS

DICHOTOMY LABEL	NAME	COUNT	PCT OF RESPONSES	PCT OF CASES
USE OF IMPROVED SEED	IMSEED	47	17.6	37.9
FERTILISER USE	FERTS	13	4.9	10.5
PESTICIDE USE	PESTS	77	28.8	62.1
MANURE USE	MANURE	55	20.6	44.4
TREES PLANTED	TREES	75	28.1	60.5
		-----	-----	-----
TOTAL RESPONSES		267	100.0	215.3

66 MISSING CASES

124 VALID CASES

