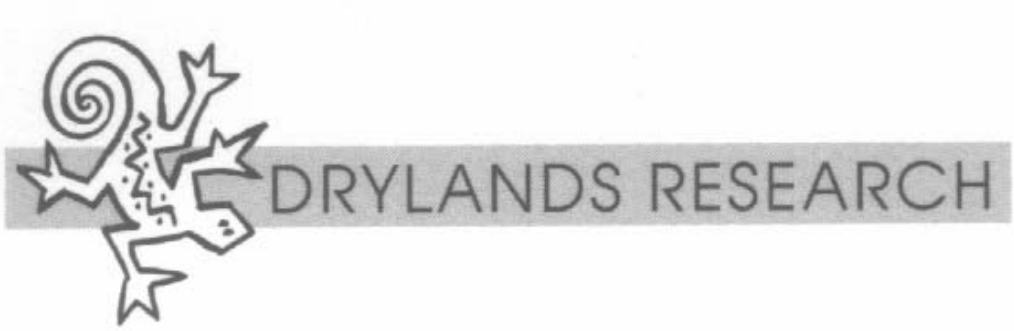


Drylands Research Working Paper 9

MAKUENI DISTRICT PROFILE: HUMAN RESOURCE MANAGEMENT, 1989-1998

Charles Nzioka

2000

Drylands Research
Crewkerne
Somerset UK

*This paper was first presented at a workshop on **Policy Requirements for Farmer Investment in Semi-Arid Africa**, held on 16-17 November, 1999 at Wote, Makueni District, Kenya*

ISSN 1470-9384

Typeset at Drylands Research and printed at Press-tige Print, Crewkerne.

The research reported in the working paper forms a part of a study on ***Policy requirements for farmer investment in semi-arid Africa***, which was funded by the Natural Resources Policy Research Programme of the Department for International Development (DFID), United Kingdom (Project R 7072 CA). DFID can accept no responsibility for any information provided or views expressed.

Preface

Drylands Research Working Papers present, in preliminary form, research results of studies carried out in association with collaborating researchers and institutions.

This working paper is part of a study which aims to relate long-term environmental change, population growth and technological change, and to identify the policies and institutions which are conducive to sustainable development. The study builds upon an earlier project carried out by the Overseas Development Institute (ODI) in Machakos District, Kenya, whose preliminary results were published in a series of *ODI Working Papers* in 1990-91. This led to a book (Mary Tiffen, Michael Mortimore and Francis Gichuki, *More people, less erosion: environmental recovery in Kenya*, John Wiley, 1994), which was a synthesis and interpretation of the physical and social development path in Machakos. The book generated a set of hypotheses and policy recommendations which required testing in other African dryland environments. Using compatible methodologies, four linked studies are now being carried out in:

Kenya	Makueni District	
Senegal	Diourbel Region	
Niger	Maradi Department	*(in association with ODI)*
Nigeria	Kano Region	*(in association with ODI)*

For each of these study areas, there will be a series of working papers and a synthesis, which will be reviewed at country workshops. An overall synthesis will be discussed at an international workshop in London in 2000.

The Kenya series updates the previous study of Machakos District (which included the new Makueni District) and examines this more arid area in greater depth. The Research Leader for these studies is Michael Mortimore. The Leader of the Kenya Team is Francis Gichuki of the University of Nairobi. Michael Mortimore, Mary Tiffen or Francis Gichuki may be contacted at the following addresses.

Michael Mortimore
Cutters Cottage, Glovers Close, Milborne Port
Somerset DT9 5ER, UNITED KINGDOM

Mary Tiffen
Orchard House, Tower Hill Road,
Crewkerne, Somerset TA18 6BJ,
UNITED KINGDOM

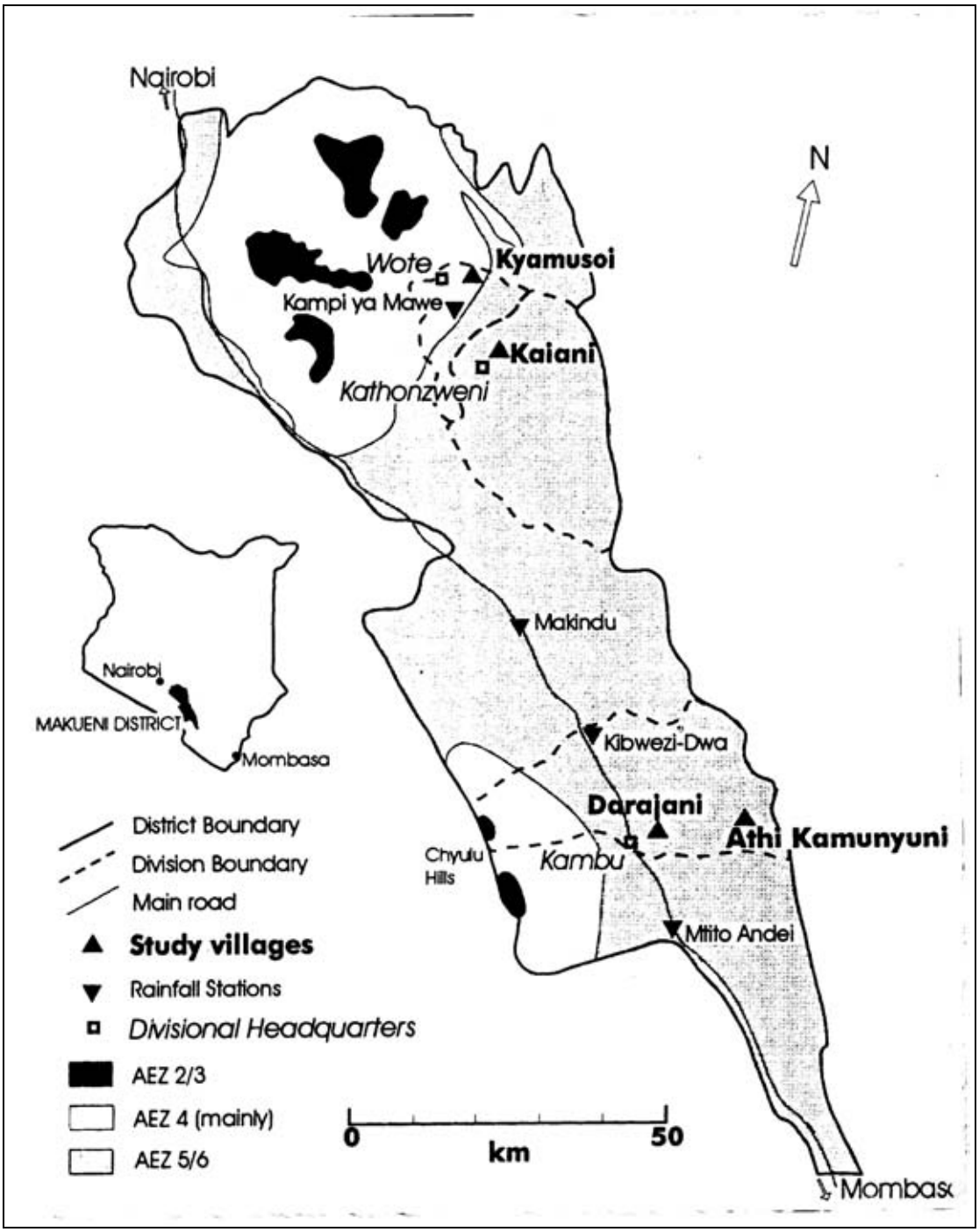
Email:
mikemortimore@compuserve.com
mary@marytiff.demon.co.uk

Website:
www.drylandsresearch.org.uk

Francis Gichuki
Department of Agricultural Engineering
UNIVERSITY OF NAIROBI
PO Box 30197
Nairobi
KENYA

Email:
fgichuki@cgiar.org

Preface map


Nairobi
N
Wote
Kyamusoi
Kampi ya Mawe
Kaiani
Kathonzweni
Makindu
Nairobi
MAKUENI DISTRICT
Mombasa
Kibwezi-Dwa
Darajani
Athi Kamunyuni
Chyulu Hills
Kambu
Mtito Andei
District Boundary
Division Boundary
Main road
Study villages
Rainfall Stations
Divisional Headquarters
AEZ 2/3
AEZ 4 (mainly)
AEZ 5/6
0
50
km
Mombasa

Abstract

This paper sets out the results of a survey conducted in four villages in Makueni District, Kenya that was used to examine the nature of the family and its decision-making, and to test hypotheses on the linkages between family investments in education and its income-earning strategies and investments. The average size of the resident family in the District is small, and is closely linked to two non-residents. The average farm labour force in households surveyed was only 2 adults, typically middle aged or elderly. Many adult children now working outside the homestead provide some financial support to their original households. Education for the young is seen as an investment priority and, for many households, it is more important now than 20 years ago. Although households in Makueni District have incomes lower than the average Kenyan income the numbers of primary and village polytechnic places in the zone has risen over the last ten years. This has happened in spite of the fact that, apart from teacher salaries, there is no longer any government financial support for these schools, and the upkeep of schools falls to the local communities. Despite increasing worries amongst many parents that their educated children will not find work, Makueni District has some of the most impressive national examination records in Kenya, and secondary education, which costs parents much more, is just maintaining recruitment levels, with the proportion of girls enrolled rising. Involvement in self-help or *mwethya* groups is widespread, but concentrated in the older age groups, as the young are at school or away. Many groups are small and informal, and the funds derived from them are used for a wide range of purposes, including consumption needs and investing in both farming and non-farm businesses. The family is set to experience more change in the future, since parents now aim for much smaller families than in the past, illustrated by survey data which shows the size of families that young people and parents now prefer. The changes in attitudes towards family size are attributed to the rising costs of living, rather than to the impact of family planning programmes.

Resumé

L'auteur présente les résultats d'une enquête entreprise dans quatre villages du district de Makueni, au Kenya, afin d'examiner la nature de la famille et des prises de décisions familiales et de tester des hypothèses sur les liens entre les investissements de la famille en matière d'éducation et ses stratégies et investissements destinés à produire des revenus. En moyenne, la famille résidant dans le district est de taille réduite (5,8 personnes) mais elle maintient des liens étroits avec deux non-résidents – un mari ou un fils travaillant à l'extérieur (tableaux 1 et 5). Comme les ménages comptent une forte proportion d'enfants et d'étudiants, la main-d'œuvre agricole dans les ménages étudiés a été en moyenne de deux adultes, du sexe féminin plus souvent que masculin, et généralement d'âge moyen ou avancé (tableaux 5 et 6). Chez les Akamba, les normes sociales font que les hommes dominent les prises de décisions, mais les résultats de l'enquête révèlent qu'en pratique les décisions sont souvent prises conjointement par les époux, surtout depuis que les femmes bénéficient d'un meilleur niveau d'instruction (tableau 3). Beaucoup d'enfants adultes qui travaillent désormais hors de l'exploitation fournissent un appui financier au ménage d'origine.

Considérée comme une priorité d'investissement, l'éducation des jeunes joue désormais pour de nombreux ménages un rôle beaucoup plus important qu'il y a 20 ans. Beaucoup

de ménages estiment en effet que l'éducation peut ouvrir la porte à des emplois non agricoles susceptibles d'offrir une certaine garantie contre les risques climatiques de l'agriculture qui affectent la population du district (tableau 9). Les ménages estiment en outre qu'une meilleure éducation permet d'obtenir au-delà du niveau local une information qui serait sinon demeurée inaccessible (tableau 10). Bien que les ménages du district disposent d'un revenu inférieur au revenu kényan moyen, le nombre de places dans les écoles primaires et les écoles techniques villageoises de la zone a augmenté au cours des dix dernières années. Hormis les salaires des enseignants, le gouvernement n'accorde pourtant plus d'appui financier à ces écoles, dont les autres frais incombent aux parents. Presque tous les enfants du district fréquentent l'école maternelle et primaire, bien que la maternelle ne soit pas obligatoire. De nombreux parents s'inquiètent de plus en plus des possibilités d'emploi de leurs enfants une fois leur éducation terminée, mais les résultats des élèves du district aux examens scolaires nationaux n'en figurent pas moins parmi les meilleurs du Kenya. Le niveau de recrutement est juste maintenu dans l'éducation secondaire, qui coûte beaucoup plus cher aux parents, mais la proportion des filles inscrites augmente. Certains parents commencent à penser qu'il vaut mieux investir dans l'éducation des filles que dans celle des garçons, estimant que ces derniers sont plus aptes à gagner leur vie tôt sans qualifications.

La participation aux groupes d'entraide ou *mwethya* est répandue, mais elle concerne surtout les classes d'âge plus mûr, car les jeunes sont en phase de scolarisation ou partis ailleurs (tableau 14). Ces groupes sont souvent petits et informels, et les fonds qu'ils procurent sont utilisés à des fins très diverses, dont la satisfaction de besoins de consommation et des investissements dans des activités agricoles ou non (tableau 15). Comme les aides du gouvernement pour l'emploi d'agents aptes à former les groupes à des activités de gestion plus élaborées ont beaucoup diminué, les projets un peu complexes qui peuvent engendrer des difficultés entre les membres d'un groupe sont souvent voués à l'échec.

On peut s'attendre à ce que l'unité familiale connaisse de nouvelles évolutions à l'avenir, car les parents désirent moins d'enfants qu'auparavant. L'enquête indique ainsi la taille d'unité familiale préférée par les jeunes et les parents (tableau 16). L'évolution des attitudes à l'égard de la taille de la famille est attribuée à la hausse du coût de la vie plutôt qu'à l'impact des programmes de planning familial.

CONTENTS

Author's acknowledgements

The author wishes to acknowledge the assistance of Dr. Benjamin Nganda of the Department of Economics, University of Nairobi and Isaac Muasya of the College of Education, University of Nairobi. However, all the shortcomings of this paper remain the sole responsibility of the author.

About the author

Dr Charles Nzioka is Senior Lecturer in the Department of Sociology, University of Nairobi. His recent research interests, deriving from Ph.D. work at the University of London, have been in family planning and reproductive health, and he is a consultant to the Population Council in Nairobi. His participation in this study marks a return to an earlier research interest in education in his home district.

Contact address: University of Nairobi, Department of Sociology, PO Box 30197, Nairobi, Kenya.
Email: cnzioka@uonbi.ac.ke

List of acronyms and abbreviations

DANIDA	Danish International Development Agency
DEO	District Education Officer
DSDO	District Social Development Officer
KANU	Kenya African National Union
MCSS	Ministry of Culture and Social Services
NCPD	National Council for Population and Development
NGO	Non-Governmental Organisation
PTA	Parent Teacher Association
SDA/CDA	Social/Community Development Assistants
SAP	Structural Adjustment Programme
TFR	Total Fertility Rate

1 INTRODUCTION

1.1 Study objectives

The overall objective of the study is to examine the effects of policy on farmers' management of their farms and livelihoods. It follows up a previous study of change in Machakos District, 1930-1990 (Tiffen *et al.*, 1994). This had shown that during the period 1930-1990 there had been a reversal in environmental degradation, better land management practices, increased value of output per acre, and increased per capita incomes. This was accompanied by, and facilitated by, increased investment in education, leading to better management on-farm and more options for off-farm employment. The present study examines Makueni District, carved out of southern Machakos District in 1992. It has multiple disadvantages when compared with the northern half which now constitutes the new Machakos District, in relation to climate, infrastructure and access to markets. This profile first looks at the nature of the management units (the Akamba family and the village community) and then, in conjunction with other profiles in the study, seeks to test the following two hypotheses:

1. That by promoting education, self-help organisations and the free flow of information, policy can increase the capacity of rural people to select and manage their investments in their natural resource endowment effectively;

2. That investment in children's education increases their earning power in off-farm jobs and facilitates the recycling of funds into farm investments. Government policies on education and community development can help or hinder this development.

Three methods of data collection were used. These included (1) semi-structured interviews with government officials at Wote District headquarters, (2) group interviews with selected respondents in the sampled areas, and (3) household surveys using a questionnaire in four study villages (see Preface map).

1.2 The district and the study areas

The present study focuses on the drier part of Makueni District - a relatively newly settled area which is dry, with erratic and unreliable rains. The district lacks basic infrastructure. There is only a total length of 155 km of classified and unclassified roads of which 16 percent is of bitumen (all a section of the Nairobi-Mombasa highway which passes through the east of the district), five percent gravel, while the rest (79 percent) are earth roads (Kenya, MPND, 1997b:51). During rainy seasons, most of the roads are impassable and the maintenance cost of vehicles is very high. Wote town only got power supply and STD telephone facilities in March 1999, and the effects of these are yet to be realised. Wote has no piped water supply and most of the water is drawn from the riverbeds of streams and transported by donkey. There are few banks, which limits access to credit by farmers and other entrepreneurs in the region. Only the state-owned Kenya Commercial Bank has sub-branches in Wote, Kibwezi, Nunguni, Emali and Mtito Andei. The cotton ginnery in Wote is closed (Mbogoh, 2000). Other minor centres of trade and industry lie on the Nairobi-Mombasa rail or road routes. Of these, Emali and Sultan Hamud have adequate water for industries (Kenya, MPND, 1997b:

17). Mtito Andei Urban Centre has power, as do 4 other market centres (Kenya, MPND, 1997b: 33).

2 THE RURAL HOUSEHOLD AND THE FAMILY

2.1 Resident and non-resident family members

The 1989 census showed that 97 percent of the population of the former Machakos District were Akamba (Kenya, 1994, Table 6-20). Among the Akamba people, the family is the basic economic unit for production, consumption, investment and insurance (Tiffen *et al.*, 1994: 132). Stable marriages are valued. The nature of the family unit in Ukambani[1] has, however, undergone some changes over time, enabling it to adjust to new economic and social circumstances.

In our survey, we enquired first about members of the household, and then asked which of these normally slept in the house. The average family size was 7.8, while the average number of resident household members was 5.8, (see Table 1). Thus for every 10 people whom the respondents listed as belonging to the household, eight were residents and two were non-residents.

Table 1 shows that there were 91 non-residents out of the total 350 (26 percent). These included students as well as persons working away. There were more husbands than wives non-resident than resident (9 vs. 1) and more non-resident sons than daughters (51 vs. 30). This is linked to social factors, migration for work and marriage customs. Traditionally, more men than women go out to seek employment.

Table 1: Residential status and position of family members

	Non-resident		Resident		Total	
Position	Number	Percent	Number	Percent	Number	Percent
Husband	9	21.4	33	78.6	42	100.0
Wife	1	2.5	39	97.5	41	100.0
Son	51	36.7	88	63.3	139	100.0
Daughter	30	27.8	78	72.2	108	100.0
Mother	0	0.0	1	100.0	1	100.0
Other relative	0	0.0	15	100.0	15	100.0
Daughter-in-law	0	0.0	2	100.0	2	100.0
Other	0	0.0	3	100.0	3	100.0
Grand total	91	26.0	259	74.0	350	100.0

Source: Field questionnaires, November, 1998.

In regard to marriage, daughters marry away into other families, since the Akamba

[1] Ukambani – the home land of Kikamba speakers.

family system is patriarchal and patrilocal. Normally, a married son establishes his own household, which explains why there were few daughters-in-law resident in the family. In exchange, the family receiving the bride pays bride wealth to compensate the family from which the daughter comes.

Traditionally, the bride wealth consisted of a mandatory three goats, known as *mbui sya ntheo*. One of the goats will normally be slaughtered for feasting on the day of engagement, and the other two (a he- and she-goat) would be retained by the daughter's family. It is expected that after the she-goat gives birth, one of its offspring would be given back to the married couple and they are expected to keep it so that it can breed. The other part of the dowry, comprising 40 goats and 7 heads of cattle, would then be paid over a long period of time. However, given the dwindling number of animals and the inconvenience of moving them around, dowries are now paid in cash, except for the first three goats. A price is fixed for each animal supposed to be delivered. In the Akamba community, dowry payment is perpetual, in order to safeguard inter-familial ties. Dowry should be paid throughout the life of a marriage, even in death, because among the Akamba, marriage is a permanent bond between families which can not be dissolved, even by the death of one of the couple. Nowadays, however, sons in-laws hardly pay much beyond the initial three goats.[2]

With many young people meeting in urban areas and having children even before the marriage is solemnised, demands for a dowry have decreased lest it generates problems within the young couples' marriage. Parents are caught in the dilemma of whether to risk the disruption of a new partnership by insisting on the payment of a dowry. They fear that such a demand might weaken or even ruin the marriage, resulting in the return of both daughter and children to the parents' home. Thus, rather than a dowry, many parents opt to demand that their daughter gets good care from the in-laws.[3] Such practices are the consequence of rapid socio-economic changes and urbanisation taking place in Kenya. One of the economic consequences of this is that among the Akamba marriage costs take a smaller proportion of young people's resources than in some other African cultures.

Daughters-in-law are viewed as part of the family they are married into and as wives, women have a right to inherit family property through their husbands. Sons, however, have a continuing obligation to their parents, and in return, they can expect to inherit a share of the parental property such as land, livestock or a business (Murton, 1997:126). Hence many of the families interviewed counted sons as part of the family household, even if non-resident. Formerly, each son was entitled to a piece of land of comparable size and quality (Murton, 1997), but farmers in Makueni argued that this is not necessarily the case at present. Currently the size of land a son inherits is largely dependent on the amount of assistance he give his parents in the course of their life. In

[2] This was already noted in Kitui, Lower Embu and Lower Meru, Machakos District, in the late 1980s: '...the bride-price was usually paid over a number of years, and there was a mutual understanding that the bride's father would not make demands for payment during times of crisis (i.e. drought). The bride-price was not upheld in Machakos in the traditional manner of the other areas, but was interpreted more as a recognition that the brides' parents needed and required continual support through time.' (Ockwell *et al.*, 1990).

[3] In some places such as Kangundo, we were told, a few kilos of sugar may do for dowry.

one focus group discussion in Kamunyolo, the respondents observed that 'A son who works in Nairobi must share his income with his parents or be threatened with eviction [from the family land]'. These threats are a strategy aimed at pressuring sons to continue rendering assistance to their parents. Sons who are seen to have the means but not the will to assist are also threatened with a curse by their parents, known locally as *kiumo*. A cursed son and his heirs are expected to suffer bad luck and misfortunes till the fourth generation. This social sanction is no longer viewed as effective by either parents or their children, hence the use of persuasion and tenure rights.

Daughters, once married, have obligations to their husbands, children and parents-in-law. This is, however, changing to some degree since the ties of affection between a daughter and her parents mean that in practice she may help them if she can, and some daughters are more reliable than sons. Her natural affection is supported by her husband's obligations to his parents-in-law, in lieu of bride wealth. Not all families counted daughters married away as in their households, although some did. This is the probable cause of the sexual imbalance in the household data tables.

The Akamba family structure has undergone tremendous changes in the recent past, one of which has seen a greater emphasis on the nuclear (as opposed to extended) family. This is an increasingly observable phenomenon in Makueni and has been encouraged both by Christianity and Western education (Mbula, 1977). Most of the Makueni residents are immigrants from the upper and highly populated region of Machakos who moved into this new area because of population pressure and land shortage. Most couples only came with their children, leaving most of the extended family in their place of origin. Those settlers who share a common ancestral clan linkage from Machakos tend to see themselves as a newly constituted family in this area. Clan links are relatively weak in modern times, as was already observable in the previous Machakos study.

2.2 Farm managers

A sample of 45 respondents were randomly sampled and interviewed. The respondents were either the household head, or the member in daily charge of the farm (where the household head was a non-resident or a non-farmer). Of the respondents 90 percent reported they were in marital unions. The distribution of farm managers by age group and marital status is shown in Table 2. The sample had a mean age of 53.6 years, and 28 percent were over 60. Some of the older people had retired from non-farm jobs, and had brought back to the farm not only higher than average educational qualifications, but also skills and contacts acquired through work. The day-to-day manager was in 38 percent of the cases a woman. About 40 percent of husbands had a main occupation off farm, not always local. In 60 percent of the cases the farm was managed by a resident husband.

Table 2: Family status of respondents by age group

Marital status	Age group				Total	
	20-59	%	60+	%		%
Divorced/single (female)	2	(4)	0	(0)	2	(4)
Husband	18	(42)	9	(21)	27	(63)
Wife	11	(26)	3	(7)	14	(33)
Totals	31	(72)	12	(28.0)	43	(100)

Source: Field questionnaires, November, 1998.
*Two respondents did not provide their ages

Traditionally, within the Akamba family structure, a divorced or a single female parent had no capacity to assume family leadership. Such a woman remained under the authority of her father or in his absence, of her brothers. There is a saying that *musyi wi kamwana ndwiyiaawa ni mundu muka.* (A woman has no say in a household which has a boy child, regardless of the age of that child). However, with modernisation and increased levels of education, the Akamba woman is gaining greater autonomy and individual freedom. Divorce and unmarried motherhood are still rare in rural areas but in the two cases encountered both women saw themselves as household heads.[4] One woman respondent (a divorcee) at Athi Kamunyuni told us she had moved from Kathonzweni and bought her own land at Athi because she could not stand her husband. She therefore saw herself as the household head, since she made all decisions related to her household. Similarly, a single female parent in Wote saw herself as the head of her household because she was fully in charge of supporting her children. If a daughter is unable to find a husband, her father should give her a piece of land, as in this case. Widows, according to the village meeting at Kaiani, generally retain the land registration deed, which would be in her husband's name, thus keeping control over the land till she wishes to retire. Hence there was only one dependent 'mother' in the sample (Table 1).

The exercise of power within the household is invariably intertwined with material endowment. Authority in Ukambani largely depends on one's ability to provide for the family needs. Men who are less endowed with resources are therefore losing power to women. Even in situations where couples are in stable marital unions, the locus of power lies with whoever is controlling family resources. The household head, however, is not the sole decision maker in farm and family matters. We asked specifically who made certain decisions, and the results are shown in Table 3.

Overall most decisions within the household were said to be made by men alone (49 percent), followed by joint decision-making (37 percent). Women alone made only 14 percent of the major household decisions. In a Kenya-wide study Bahemuka (1986) found that men reported that husbands made the major household decisions in 65

[4] The 1994 Welfare Monitoring survey, with its larger sample, found 82% of Makueni households headed by men (70% in monogamous marriages and 5% in polygamous ones, and a few widowers and divorced men). Of the 18% headed by females, 13% were widows. Only 4% of married females claimed to be heads of households, and single and divorced together were only 1.7% (Kenya, CBS, 1996, Table 3.80).

percent of cases, wives in six percent and both together in 20 percent (study also cited in Tiffen *et al.*, 1994:133). Our study shows a trend of increased power-sharing through joint decision-making between men and women at the household level. Of the nine activities investigated, this study found that men dominated in five (buying and selling cattle, buying goats, land and terracing) women in none, while joint-decision-making was reported in four activities (planting trees, selling food, making the choice of new crops, and in deciding whether a child should go to secondary school).

Table 3: Main decision maker by gender

Decision	Male		Female		Both		Totals	
Buy cattle	26	(57.8)	6	(13.3)	13	(28.9)	45	(100)
Sell cattle	25	(55.6)	7	(13.3)	14	(31.1)	45	(100)
Buy goats	21	(46.7)	8	(17.8)	16	(35.6)	45	(100)
Plant trees	18	(40.0)	7	(15.6)	20	(44.4)	45	(100)
Sell food	19	(42.2)	5	(11.1)	21	(46.7)	45	(100)
New crop	6	(35.6)	7	(15.6)	22	(48.9)	45	(100)
Terracing	25	(55.6)	6	(13.3)	14	(31.1)	45	(100)
Child to secondary school	17	(37.8)	6	(13.3)	22	48.9)	45	(100)
Buy land	30	(66.7)	7	(15.6)	8	(17.8)	45	(100)
Average	22	(48.7)	6	(14.3)	17	(37.0)	45	(100)

Source: Field questionnaires, November, 1998.

The edge men have in household decision-making is not unexpected because Akamba society is patriarchal and men have to be seen to dominate in decision-making. A man's inability to make decisions is associated with irresponsibility or personal inadequacy. Such expectations can create a discrepancy between what is reported and what actually takes place. For example, even a habitual drunkard who has abdicated his decision-making role within the household would still claim to be the principal decision-maker when asked by outsiders, lest he be ridiculed. Even his wife might claim her husband is the major decision-maker in order to conform to societal expectations.

The results of this study, however, show increasing evidence of decision-making partnerships between men and women. This arises out of increased levels of education among most couples. Women are also able to make decisions on certain issues, owing to the absence of their husbands from the homestead (many of whom are employed outside the home area). The managers of the farm enterprise can therefore be considered as both husband and wife. Their educational level is important because it affects their capacity to manage their investments. The findings on Table 4 below show that in Makueni most of the farmers (men and women) have primary education and an important minority have some secondary education. Farmers need at least to be able to read instructions on fertiliser or seed packets, and to calculate profit and loss. Illiterate farmers tend to rely on oral messages which may be distorted, and on visits rather than letters to keep in touch with distant relatives. This might compromise the quality of decisions and the speed with which farmers make on farm investment decisions.

Table 4: Education level of head of household and spouse (with percentages)

Education level	Husband		Wife		Total	
None	11	(25.0 %)	12	(32.4 %)	23	(28 %)
Primary	24	(54.0 %)	20	(54.0 %)	44	(54 %)
Secondary	7	(15.9 %)	2	(5.4 %)	9	(11 %)
Tertiary	2	(4.5 %)	2	(5.4 %)	4	(6 %)
Adult literacy	0	(0 %)	1	(2.7 %)	1	(1 %)
Total	44	(100%)	37	(100 %)	81	(100%)

Source: Field questionnaires, November, 1998.

A recent policy study found that successful innovations spread rapidly from better educated farmers to their neighbours. It observed that in neighbouring Tanzania the move by farmers into higher paying crops and livestock was hindered not only by faulty macro-economic policies (especially on pricing), but also by a rationing of secondary education. This meant that there were few people with this level of education actively engaged in farming, either as farm heads or as labourers. The existence of a leavening of educated, innovative farmers was in many ways more important than the formal extension service. The research and extension services, which in any case tended to concentrate on the better educated, more innovative farmers, did nevertheless play a role (Bevan *et al.*, 1993). In Makueni, extension services have been greatly hampered by a lack of adequate staff and transport for regular visits to farmers, making the presence of educated farmers even more important for the spread of new information.

Our findings show that husbands had higher educational achievements than their wives. Given that the mean age for our sample was 53.6 years, it is plausible that these couples grew up when the education of women was less valued or when male children received priority in schooling, hence the differentials. By African standards, however, these farm managers were well-educated.

2.3 Age, education and occupations

Age structure

Table 5 shows that 259 of the 350 family members counted (74 percent) lived locally. The age structure of the residents and non-residents was different. Amongst the residents, 32 percent were under 15, compared with 2.2 percent of non-residents. The non-residents were mainly in the 15-39 age group (71 percent), compared with 39 percent of residents. The age group 50+ included 5.5 percent of the non- residents and 11 percent of the residents. The number of non-residents declines after age 40, making the rural labour force predominantly middle-aged and elderly. Non-residency was particularly high for the age group 20-35.

Table 5: Age and residence of family members: numbers and percentages

	Non-resident		Resident		Total	
Age group	Number	Percent	Number	Percent	Number	Percent
<5	0	0.0	23	8.9	23	6.6
5-9	0	0.0	49	18.9	49	14.0
10-14	2	2.2	37	14.3	39	11.1
15-19	8	8.8	34	13.1	42	12.0
20-24	18	19.8	14	5.4	32	9.1
25-29	18	19.8	23	8.9	41	11.7
30-34	12	13.2	11	4.2	23	6.6
35-39	9	9.9	10	3.9	19	5.4
40-45	6	6.6	6	2.3	12	3.4
45-49	3	3.3	11	4.2	14	4.0
50-54	3	3.3	19	7.3	22	6.3
>60	2	2.2	15	5.8	17	4.9
n.a.*	10	11.0	7	2.7	17	4.9
Total	91	100.0	259	100.0	350	100.0

Source: Field questionnaire, November, 1998.
*Age was not recorded in 2 families

Table 6: Occupation, gender and residence of family members

Occupation	Non-resident				Resident				Grand Total	
	Male	Fem.	Total	%	Male	Fem.	Total	%	No.	%
1. Family farm	5	16	21	23.1	38	60	98	37.8	119	34.0
2. Farm labourer	0	0	0	0.0	1	0	1	0.0	1	0.3
3. Rural non-farm employee	1	1	2	2.2	0	0	0	0.0	2	0.6
4. Urban private employee	21	3	24	26.4	0		0	0.0	24	6.9
5. Govt.-rural	0	1	1	1.1	3	7	10	3.9	11	31
6. Govt.-urban	8	1	9	9.9	1		1	1.5	10	2.9
7. Own business-rural	1	2	3	3.3	4	1	5	1.5	8	2.3
8. Student	10	6	16	17.6	55	46	101	13.0	117	33.4
9. Job-seeker	11	2	13	14.3	2	2	4	1.5	17	4.9
10. Not in labour force/ domestic work only	1	0	1	1.1	2	2	4	1.5	5	1.4
11. Young child	1	0	1	1.1	22	13	35	13.5	36	10.3
Total	59	32	91	100	128	131	259	100	350	100

Source: Field questionnaire, November, 1998.

Table 7: Occupation, gender and level of education of family members available for employment

Education		None		Primary		Secondary		Tertiary		Other		Total	
Male	*Occupation*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*
	Family farm	8	80.0	28	60.9	7	20.0	0	0.0	0	0.0	43	44.8
	Labourer	0	0.0	0	0.0	1	2.9	0	0.0	0	0.0	1	1.0
	Rural non-farm employee	0	0.0	1	2.2	0	0.0	1	33.3	0	0.0	1	1.0
	Urban private employee	1	10.0	4	8.7	15	42.9	0	0.0	1	33.3	21	21.9
	Govt. - rural	0	0.0	0	0.0	2	5.7	1	33.3	0	0.0	3	3.1
	Govt. - urban	0	0.0	2	4.3	5	14.3	0	0.0	2	66.7	9	9.4
	Own business - rural	1	10.0	2	4.3	1	2.9	1	33.3	0	0.0	5	5.2
	Job-seeker	0	0.0	9	19.6	4	11.4	0	0.0	0	0.0	13	13.5
Total		10	100.0	46	100.0	35	100.0	3	100.0	3	100.0	96	100.0
Female													
	Family farm	20	95.2	45	90.0	9	50.0	1	20.0	1	50.0	76	79.2
	Rural non-farm employee	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	1	1.0
	Urban private employee	0	0.0	2	4.0	1	5.6	0	0.0	0	0.0	3	3.1
	Govt. - rural	0	0.0	0	0.0	3	16.7	4	80.0	1	50.0	8	8.3
	Govt. - urban	0	0.0	0	0.0	1	5.6	0	0.0	0	0.0	1	1.0
	Own business - rural	1	4.8	1	2.0	1	5.6	0	0.0	0	0.0	3	3.1
	Job-seeker	0	0.0	1	2.0	3	16.7	0	0.0	0	0.0	4	4.2
Total		21	100.0	50	100.0	18	100.0	5	100.0	2	100.0	96	100.0

Source: Field questionnaires November, 1998.

Dependency and occupations

Table 6 shows that two thirds of the non-residents were male. This is related to the pattern of employment. Because men have had access to education for longer than women, more of them are in formal, urban-based employment (lines 4 and 6). Women are better represented in government rural-based employment (line5) but this sector is small. Not all the non-residents were working - 17.6 percent were in educational institutions and 13.4 percent were looking for work.

It must be assumed that the non-resident family farm workers were sons and daughters on their own farms, or provided with a subdivision of the parental holding on marriage. Amongst the residents 98 (38 percent) worked on the family farm, and of these 60 were women and 40 men. This confirms that farming is the leading occupation in rural areas in Kenya (see Kenya, CBS, 1996: 96). It also suggests that other occupations are less accessible to women than to men, either as a result of limited education amongst the older ones or because child care and certain societal gender-role expectations inhibit their occupational mobility. The other large categories of rural household members were students (line 8, 39 percent) or those below the age for schooling (line 11, 13.5 percent). The farm labour force is relatively small. With 38 men and 60 women on the 45 farms surveyed, the average adult labour force was 2.1 adults per farm, supplemented, of course, by children when not at school.

The age dependency ratio is officially defined as the ratio of those under 15 years and those above 64, to those in the working age population aged 15 - 64 (Kenya, CBS, 1996). This definition, however, is not totally realistic, since many of those aged 15 + are still in educational institutions. Table 6 shows that amongst rural residents, only 115 (lines 1-7) were in productive occupations (i.e. 44 percent). Each working adult is supporting 1.2 other rural residents, although, of course, children and young people contribute to farm and domestic tasks after school and during holidays. The heavy investment in education is not only financial but has other costs in the labour forgone and the heavier burden on working adults. The small labour force limits the possibilities of undertaking operations or investments with heavy labour requirements, especially since the vigorous age groups, those between 20-35, are under represented.

Education and employment

The distribution of family members available for employment is shown in Table 7. It excludes all students and young people, but includes job-seekers. Our findings show that, amongst those with no education or only primary, most were working on the farms. Secondary education seems to have paid off in the past, since about two-thirds of the males with it obtained jobs with state or private sector firms. However, nine of the 18 women who had secondary education were working on farms. These figures on women, however, need to be treated cautiously, in that daughters who married away from home are not included in the sample to the same extent as sons, and some of the women who are now back on the farm may have retired from a professional occupation (like some of the men). Table 7 also shows that the attainment of secondary education is now no guarantee of a job, as some of those who had it were still job-seekers.

Age, gender and education of family members

Table 8 shows the changing gender balance in education. It is somewhat distorted by the habit of not counting all daughters married out. The few whose secondary schooling led on to tertiary education are also not included. Nevertheless, it is fairly clear that, amongst those over 60, few had any education, and more older men than women had attended primary school. Amongst those aged 50-60, primary education was more common for males. For those aged 40-50 (i.e. being educated in the 1960s), primary for females was becoming common, but secondary remained rare. This began to change in the 1970s, and for those in the 20-29 age group, secondary education was becoming as common for girls as boys. In the youngest age group, 10-19, our sample picked up more boys than girls with no education. This will be discussed later, in relation to district educational statistics.

Table 8: Age, gender and education to secondary level

Educational status		Age groups						
		10-19	20-29	30-39	40-49	50-59	60+	Total
None	Male	4	0	0	2	1	6	13
	Female	0	0	1	4	6	5	29
Primary	Male	34	15	6	5	9	4	73
	Female	34	25	11	6	4	2	82
Secondary	Male	6	12	16	8	1	1	44
	Female	6	11	5	1	0	0	23
Total		84	63	39	26	21	18	251

Source: Field questionnaire, November, 1998.

Parental views of education and employment

One third of the parents interviewed saw education as enabling the children to be self-reliant. One fifth saw their children as developing the capacity to assist them at some time, while one-fifth saw their educated children as having both capacities. These capacities are, however, not completely unlinked because, as they put it, *vaii mundu utetheeasya ungi atetonya* ('nobody can assist another if they are incapable of helping themselves'). The benefits do not only come in old age. For example, one retired teacher in Kyamusoi village, with two boys at University was happy to report he was only able to educate them through the financial assistance he got from his two elder sons (an engineer and an architect).

Educating children now is more expensive, due to the cost-sharing policy and the new 8: 4: 4 system (8 years primary, 4 secondary, 4 university – see next section). In two villages in Kathonzweni and Kambu people at the group interview thought this had increased the burden on parents and reduced flexibility in deciding how long a child would benefit from education. The previous system was 7 years of primary, 4 years to a recognised secondary qualification, two years of pre-university preparation and 3 years of University.

Education, at whatever level, can no longer guarantee a child employment as would probably have been the case some 20 years ago. This realisation has not yet dampened parental desire to educate their children in Makueni. Firstly, any parent who does not send his or her children to school is publicly scorned. Illiteracy is generally associated with backwardness. This public pressure ensures that all parents send their children to primary school, be they boys or girls. As some parents said: 'A child needs some education - at least to a level where they can either read a letter or road signs'. Another parent said:

> Education is so important today, even herdsmen need to be educated to know how to feed cattle well. Without education, do not expect your son to get any job.

Secondly, continuing education to a level where a good job can be secured, is viewed as a good education. There was also agreement that education abandoned halfway is valueless (interviews at Kaiani, Kathonzweni Sublocation, October 18, 1998). There is always ready public sympathy and support, through the *harambee* spirit, to enable financially incapacitated parents to educate their child. Thirdly, the general public view is that an educated child is a valuable asset to the community as well as to the family. Educated children assist local development through *harambee* contributions, building schools, churches and getting other local children jobs. They also serves as symbols of progress for a particular area, a source of pride for local people. Fourthly, education to most Wakamba is the best tool for survival in a harsh agro-ecological environment. As one teacher said:

> When there is drought, I lose as a farmer, but as a teacher, I never experience that drought. I still get my salary and can survive better than if I was only a farmer.

In Kathonzweni, the group still felt a son was best educated for employment, because if he stays on the farm 'if it stops raining, the family goes hungry'. A similar observation has been made by Munguti (1998) who quotes one district leader in Makueni as remarking that 'The only rain the people of the district can be sure of is education'. Educating children is seen as warding off poverty so that they do not find themselves in *ukya wa kitianio* (the vicious cycle of poverty) (Munguti, 1998:100). For this reason, the Akamba of Makueni aspire to send all their children to school for as long as they can afford. Despite the increasing levels of unemployment among the educated (even university graduates), education is still considered the most valuable asset a child can inherit from a parent. At the Wote workshop, it was evident that education was still one of the farmers' major investment priorities. Emphasising the importance of education, one farmer noted:

> Education is important because it helps in everything from looking after children to business. We must sell our cows to educate our children.

Boys used to get preference in receiving secondary education because of limited resources, but there is now greater appreciation of having girls educated. There is a shared view that girls are less likely to 'get lost in the cities and forget their parents like boys'. Other parents argued that, while working girls may not bring home a lot of money for investments on the farm like boys because they also have to invest on their

husband's side, they nonetheless remit money or cater for food and other 'little needs' within the household which boys tend to ignore or overlook. Examples given of what girls assist in acquiring included food, medicine or clothes. In Makueni, parents also educate girls because of the fear of being viewed as backward by other members of the community. In a case in Wote, one parent observed that parents who do not educate girls are generally viewed as 'primitive' and are the laughing stock of the community. Interestingly, according to the district statistics, there are now more girls than boys enrolled in both primary and secondary schools and in youth polytechnics. It is observed that 'boys drop out in schools early to look for employment to support their families' (see Kenya, MPND, 1997b: 35-36). It was, however, not possible to validate this claim on the basis of our evidence. Nonetheless, in a drought prone area like Makueni it is possible that during times of extreme weather conditions and severe food shortages, boys would move out and look for jobs to assist their families.

Table 9: Rating of educational importance now compared to 1970's (with percentages in brackets)

Reason	Rating of educational importance now compared to 1970s				Total	
	Less important		More important			
Easy employment	2	(4.4)	20	(44.4)	22	(49.0)
No jobs now	16	(35.6)	5	(11.1)	21	(47.0)
Self-reliance	0	(0.0)	2	(4.4)	2	(4.0)
Total	18	(40.0)	27	(60.0)	45	(100)

Source: Field questionnaire, November, 1998.

However, there is a large minority who are beginning to doubt the value of education, especially secondary. Table 9 above shows that the majority (60 percent) of the respondents view schooling as more important in the 1990s than it was in the 1970s. Of these, 44 percent saw education as the only avenue to employment in a competitive environment. Of the 40 percent who thought education was less important now than in the 70s, 36 percent were of the opinion that education is less important because schooling at whatever level cannot guarantee employment as probably was the case in the 1970s. In the group interviews it was apparent how much parents worry about balancing the increased costs of education, especially at the secondary stage and above, with their children's employment prospects. Asked about the value of education, a leading man in Darajani asked whether this was with reference to a good year or a bad year. It is still better to send a son to Nairobi, because of poor farming conditions. One woman referred to the different costs. Every parent could manage primary and village polytechnic. But four years of secondary and even university might bring no employment these days. A graduate agreed: 'You come back home to your problem'. Every one agreed with a woman in Athi Kamunyuni, who said: 'It is better to return home and do something than stay in Nairobi, bringing nothing.'

Parental views on their own education

Respondents seemed to have more difficulty in analysing the benefit of their own education. Table 10 above shows that 40 percent of the respondents either saw no benefits to themselves or gave no response to our question on what they considered as the greatest benefit of education to themselves. Some respondents in this study were not educated and perhaps on this basis did not see the relevance of this question to them. Others had only had a very limited primary education. This did not by any means suggest that the respondents did not value education. Those who responded, reported finding education useful in facilitating communication (oral or written), and in gaining employment.

Table 10: Perceived benefits of educated self

Benefits of education (to respondents)	Frequency	Percentage
None/no response	18	40.0
Easy communication	16	36.0
Get job	10	22.0
Other benefits	1	2.0
Totals	45	100

Source: Field questionnaire, November, 1998.

Parents interviewed by Newman in Machakos in the 1970s indicated some of the benefits of their own education as:

> Education helped me a great deal as I was able to read and write letters. It also led me to be acquainted with the land adjudication people when they came here, and to work out the benefits and costs of bench terraces and of the farm itself [A man].
>
> Education helped me; I can read the Bible to guide me and I have educated my children. My son .... was the first man in Kiteta to get a degree. I got my own shop at Tawa and I could know how much I spent and how much I gained; also on the farm. Education also led me to be selected for some committees in the area [A woman]. (Newman 1974).

Some parents interviewed in Makueni did, however, appear to down-grade the value of their own education. Some of their arguments were as follows: *Kisomo kyakwa no kyauvoya kiw'u* ('My education is only enough to enable me to ask for water in a strange land'). It is a sign of backwardness in Ukambani not to be able to communicate - at least to be able 'to read your letters, otherwise you have no secrets'. The 22 percent who reported having benefited from their education were either working or had worked, as teachers or artisans (jobs accessed through education). Mkamba parents take great pride in children with more education than themselves. Most parents still lament the poor schools they went through or the time they lost herding cattle (arguably because their own parents did not know the value of education).

Nursery schools

Despite the increased costs of education, nursery schooling is expanding and has become near universal, even in poor rural areas. Table 11 shows why parents in our sample sent their young children to nursery.

Table 11: Nursery school attendance

Nursery	Frequency	Percentage
Good basis for schooling	20	44.0
Must (it is mandatory)	25	56.0
Totals	45	100

Source: Field questionnaire, November, 1998.

There is no explicit formal government policy obliging attendance at nursery school in Kenya, although it is strongly supported. However, it is now a normative expectation for all parents to send their children to nursery school. In this study, all the respondents (100 percent) reported that they send their children to nursery. The majority (56 percent) felt it was mandatory. Primary school heads insist on children first going through nursery school because it enables children to make a better start than those who have not. Parents agreed and 44 percent of the respondents took children to nursery school so to provide their children with a strong and sound basis. From the group talks, it was apparent that some parents (especially the relatively poor with inadequate labour) might prefer their children to stay home and perform household chores, such as grazing. The community, however, generally views such attitudes negatively. Public pressure therefore compels most parents to take their children to nursery school. My informal talks with parents in Wote town showed that parents in salaried employment also put their children in nursery schools so as to leave them with time to attend to their jobs, since having the children at home requires an expensive house-help.

3 THE SCHOOL SYSTEM AND FINANCING

3.1 Government policies on education

The 8: 4: 4 education system

The Kenyan education system has undergone major structural changes since the 1950s. In the pre-independence period, the 8: 4: 2: 3 education system was in place. In this system the primary school segment had two phases of four years each. At the end of the first phase, pupils sat the Common Entrance Examination. Those who performed well were then admitted into Intermediate Schools for the next phase of 4 years. They could then be admitted to secondary school for four years, then two years for ‘A’ levels, followed by 3 years of university education. Following independence, the Government

adopted the 7: 4: 2: 3 education system in 1964, on the recommendations of the Ominde Commission on Education (i.e. seven years primary, followed by four years of secondary, two of 'A' level and three of university). This was replaced by the 8:4:4 education system in 1985.

The aim of the 8:4:4 system was to enable primary school leavers to be self-reliant by training them in practical skills such as carpentry and metal work, which were added to the curriculum. However, the system has never been seen to have accomplished this objective. First, the teachers were not adequately trained for these new tasks. Second, the schools did not have the necessary equipment for such skills as masonry or carpentry, let alone basic teaching and reading materials. Some parents had to buy items to pass off as their children's work (with teacher connivance) to get through the exams. Since the 8:4:4 education system was introduced as a presidential decree, it was never subjected to scrutiny or debate. Teachers have only been trying to implement it and ensuring that their students pass well so that their schools can be well rated, either locally or nationally. Likewise, parents have also supported the new primary curriculum only so their children can go to good secondary schools where they can pursue 'academic' work. There is a Presidential Commission of Inquiry, which is looking into ways of restructuring the entire education system in Kenya.

Nursery schools were originally run by local communities, supervised and aided by the county councils. Now all nursery schools are run by local communities and the county councils do not have any role in them. All the nursery school teachers and their supervisors have been withdrawn by the county councils and those formerly employed by the councils are now manning road blocks and markets as revenue clerks.

Village Polytechnics (now Youth Polytechnics) were begun in the mid 1960s to meet the need for training of primary school drop-outs and leavers in practical skills such as in catering, carpentry, metal work, tailoring, masonry and dress-making. The Youth Polytechnics have a symbiotic relationship with the local community. The community provides students who are then trained in skills relevant to community needs. The Youth Polytechnics were expected to win contracts to supply goods and services produced by their students, thus generating financial resources to pay the instructors and subsidise the trainees' fees. Such experiences also provide a forum for teaching practical business skills to trainees. Since most of the Youth Polytechnics were constructed on a self-help basis, they fell under the purview of the Ministry of Culture and Social Services (MCSS). Others are under non-governmental organisations (NGOs) and church organisations. The Youth Polytechnics are now being brought under the Ministry of Education (Ministry of Education official, Nairobi workshop, November, 1999).

Cost-sharing

The Kenyan Government's policy of cost-sharing was introduced in 1988. This policy shifted the whole burden of constructing and equipping public educational institutions to parents and local communities. To date, government subsidies are largely in the form of teachers' salaries. This policy of cost-sharing has, however, led to problems for poor students, who cannot afford to pay for books and equipment (Kenya, MPND, 1997a:136) although the Government avers that 'every Kenyan has the inalienable right,

no matter his or her socio-economic status, to basic education' (see Kenya, MPND, 1997a: 133). However, the bursaries for the educational needs of the poor provided by county councils in the 1960s and 1970s, are no longer available, as virtually all councils are cash-strapped. Parents are well aware of the change. From this study, 87 percent of those interviewed reported the only positive thing the Government was doing for education was to provide salaries for teachers (see Table 12).

The provision of 'free primary education' was only mentioned by one person. There was, however, a general feeling that Government claims of 'free' primary education were rather misleading. Most parents are shouldering a much heavier responsibility than in the 1970s, when they paid only tuition fees while the Government provided other inputs. Today parents pay for everything (stationery, construction of classes, furniture, equipment) including tuition for extra tutoring/coaching of their children by the teachers (interview at Kaiani, Kathonzweni Sublocation, 1998). Only one parent in Wote (a retired primary school teacher) praised the Government for increasing the number of national universities. Yet even he acknowledged that education was expensive, since he could only pay for his two children's' university education with the assistance of his two elder sons.

Table 12: Any positive action by the Government on education

Positive government action	Frequency	Percentage
None/no response	3	7.0
Bursary	1	2.0
Free primary education	1	2.0
Increased universities	1	2.0
Pay teachers	39	87.0
Totals	45	100

Source: Field questionnaires, November, 1998.

The Kenyan Government has withdrawn from the responsibility of constructing and managing local educational institutions. All schools are run by PTAs (parent teacher associations) and a board of governors, selected from among local prominent personalities and approved by the Ministry of Education. To promote local participation, the Government has introduced a quota system which demands that 85 percent of students admitted into local educational institutions originate from the local area (location, division, district or province) and only 15 percent can be admitted from outside.

The capacity to construct new schools and equip them largely depends on parental incomes, which are in turn determined by the agro-ecological potential of the areas in question. Under the new government policy of cost sharing, parents in low potential districts like Makueni are bound to have a less than average capacity to construct new schools or even to equip the existing ones. Nevertheless, official statistics show parents have increased provision of primary and youth polytechnics. In 1995 Makueni had 912

pre-primary, 767 primary, 125 secondary and 44 youth polytechnics, a substantial increase over the 1989 position, as shown in Table 13. They are well spread out over the district, and even our most disadvantaged village had its own eight-class primary school.

Table 13: Educational facilities by type and division

Division	Pre-primary	Primary	Secondary	Youth Poly.
Wote	192	167	22	15
Kibwezi	151	141	14	5
Makindu	56	47	6	2
Mulala	55	48	9	2
Kilome (h.p*)	123	104	22	9
Kaiti	92	75	14	2
Mbooni (h.p*)	117	80	23	3
Matiliku	64	58	8	4
Kisau	62	47	7	2
Total, 1995	912	767	125	44
Total, 1992	880	743	124	?
Total, 1989	?	690	110	17

Source : Kenya, MPND, 1997b: 35; 1989: 22-28; 1994: 45 (1989 data relates to the four divisions of Machakos District that became Makueni District in 1992).
h.p.* = high potential areas

Parents either mobilise their own resources or appeal to their friends, relatives and neighbours to finance the education of their children at all levels, through the *harambee* spirit. The alternative has been to look for non-governmental organisations interested in helping them either to pay school fees or to construct schools/classrooms. In our sample villages, we found DANIDA (Danish International Development Agency) and the Anglican Church assisting in paying for the education of children. However, the number of such sponsors is too limited to serve as a good alternative to local efforts.

The burden of the effort to finance education has led to criticism of the present political regime's policies. One opposition civic leader remarked:

> Unless the present system changes, we are likely to end up very soon with two types of poor people in each household - a poor old person, and a poor young person *(Ngya imwe nguu, na ngya ingi nzomu)*.

The quota system

Makueni District has no institution of higher learning such as a university, a technological institute or even a teacher training college at present. This means that those from the district who wish to pursue educational training beyond secondary school have to look for places outside the district. Admission to most higher educational

institutions is, however, pegged to a national quota system in which 85 percent of those admitted must be local residents. This policy, which was introduced by the Government in 1989, implies that students from such districts as Makueni which have no universities or national polytechnics, increasingly find their access to higher education highly competitive. This perhaps explains the drive for excellence in examination results.

Language of education

In Kenya, the English is the official language, while Kiswahili is the *lingua franc*. In rural schools pupils in primary 1 through 3 are taught in English, Kiswahili and in their vernacular (Kikamba). The reason for being taught in Kikamba at this level is:

- to ensure that they are able to appreciate and communicate in Kikamba. There is always a fear of cultural alienation - where a pupil is capable of communicating in other languages but not their own;
- the strong belief that if children are taught in their native/first language, they develop a better capacity to master and appreciate other languages.

The knowledge of and mastery of other languages is viewed as very important in enabling one to communicate effectively locally and with strangers to the district.

3.2 School quality

Average enrolment per school in 1995 was 37 at pre-primary, 257 at primary, 148 for secondary and 56 for Youth Polytechnics. Evidently most of the schools were quite small. They have a limited catchment area, as most children have to walk to school. However, some parents send children away to school even though this means they shoulder the extra costs of boarding. This price is considered worth paying if the quality of education is thought to be high. Examples of such schools include those that have excelled in previous national examinations. Such schools are also thought to have better discipline.

Makueni District has one of the most impressive national examination records in Kenya. According to information from the District Education Office, the district held position five nationally in the Kenya Certificate of Primary Education (KCPE) examinations in 1992 and in 1993. In 1994 and 1995, it posted the best results in the country. In 1996, however, it did not perform so well and held position four, then in 1997, 1998 and 1999 it was back to position one. The reason for the strong performance in the KCPE examinations was a realisation by teachers, students and parents alike that the district's most reliable resources were its human resources. According to the District Education Officer (DEO) the people of Makueni 'are running away from poverty by educating their children'. To help achieve better results, the district has organised very strong parent teacher associations (PTAs), and strengthened the school inspectorate. The burden of buying books is not left to the individual parent, but is a shared activity, funded collectively. Teachers are also paid by schools so as to motivate them to offer tuition to all the children. *Harambees* are held to cushion children from the poorer families (see section 4).

3.3 School enrolment

Data on school enrolment within the district in Table A1 of the Appendix shows the changing relationship between male and female attendance. A recent trend shows more girls than boys enrolled at primary and secondary levels. The reason advanced for this is that boys are increasingly dropping out of schools early to look for employment to support their families (Kenya, MPND, 1997b: 35). Officials observed that boys were 'an endangered species'. This is interesting, given that formerly more boys were in school than girls, as shown in our sample, and in the 1989 census data for Machakos District (Table A2, Appendix 1).

3.4 Youth Polytechnics

The Youth Polytechnic programme was started in Kenya in the mid 1960s, following a realisation that there was an increasing number of primary school leavers unable to find white collar jobs in urban areas. The initial aims were firstly, to assist primary school leavers to develop skills and attitudes that will lead them into income-generating activities in the rural areas, and secondly, to help these school leavers to use their skills and talents for developing the rural communities (see Nzioka, 1986). Despite these noble intentions, studies have shown that this an incomplete solution to the issue of unemployment in Kenya. As early as the 1980s, unemployment rates of 33 percent among male and 71 percent among female youth polytechnic graduates were reported (see Orwa, 1982; Ongolo, 1983 and Nzioka, 1986).

A number of factors have, in effect, diminished the value of polytechnic training for most parents and potential trainees. Firstly the number of polytechnic graduates exceed local demand. In 1995, the informal sector in Makueni District was estimated to provide employment for only 1,611 youths, compared to the 2,084 youth polytechnic graduates that year (Kenya, MPND, 1997b: 40). Second, the average salary for a youth polytechnic graduate in Makueni is Ksh 1,200 (US$ 20) per month, which is too little to sustain a reasonable standard of living (Kenya, MPND, 1997b: 40). Thirdly, under the 8: 4: 4 education system, the primary school was meant to offer similar skills such masonry, carpentry, dress-making, rope-making and basic agriculture. This has further undermined the value and role of the youth polytechnic.

There is also a general feeling that youth polytechnics are for academic failures and this has created resentment amongst both parents and prospective students. To most farmers we talked to, skills that lead to manual jobs are not particularly attractive to them and their children. Such training is viewed as a last resort. In any case, these polytechnics are poorly equipped and are manned by poorly trained, primary school-educated tutors, who theoretically teach the so called 'practical subjects'. As most farmers in Kenya see the value of education in terms of its potential for employment, if the skills in question are wanting in quality or do not offer the prospects of employment, then the utility of such education is put into question. In fact, the very future of the Youth Polytechnic programme in Kenya is in question.

4 THE VILLAGE AND NEIGHBOURHOOD SELF-HELP

4.1 The *utui* and its associations

Apart from the family, the second important social grouping amongst the Akamba is the neighbourhood or village (*utui*). This is the lowest unit of administration, which is normally headed by the village headman (*mutumia wa utui*).Within the *utui* there is a strong feeling of mutual inter-dependence and co-operation, expressed amongst other ways by membership of various groups and associations. Those who fail to participate in these groupings are isolated or ostracised by their communities.

In Ukambani, three forms of mutual assistance groups used to be distinguished: the *mwilaso*, *mwethya* and *vuli*. *Mwilaso* comprised a small group of friends and neighbours who helped each other with farm work on a rotational basis. The *mwethya* was a one-off occasion called by an individual who needed assistance with a definite task such as house construction. *Mwethya* was an *utui* organisation since all the participants were drawn from the neighbourhood. When many *mwethya* groups joined in the execution of a monumental task, this was known as *vuli*. The *vuli* was used by relatively wealthy persons for bigger tasks. All these social groupings are nowadays generally referred to as *mwethya*, or, in English, as self-help groups, or, if predominantly for women, women's groups.

We enquired as to the nature of current *mwethya* activities in the four villages. In some ways the responses differed from the common perception of them as work groups engaged in communal investments. We therefore sought to understand how they have changed over time, and also, the differing level of support over time given by Government.

4.2 Participation in self-help

We asked respondents if they had participated in self-help groups (*mwethya*), either for farm or non-farm activities. Tables 14 shows that just over 70 percent of the households in this study reported having been involved in on-farm self-help groups. Farm activities included bush-clearing, cultivation and terracing, so they have been one means of establishing new farms, and improving them (Gichuki, 2000). The great majority of the participants in these groups were women, which was as expected because more women than men are engaged in farming. The husband and wife, whose average age was in the 50s, were much more often involved than younger members of the household.

Most families (just over 80 percent) also had a participant in a non-farm *mwethya*. About a quarter were using this *mwethya* to make an investment, and this applied equally to men and women. However, the nature of the investment differed, with the men more engaged in acquiring a water facility, or a business, and the women engaged in what might be smaller investments, such as acquiring goats and tools or, more adventurously, buying plots (probably for constructing a building for rent or for a business activity). In many markets in Makueni, it is easy to notice shops or rental/commercial houses owned by women's groups. This is a relatively new

development. Akamba women believe strongly in an old saying that *kyaa kimwe kiyuaa ndaa* (one finger cannot crush a louse), hence the energy invested in such commercial enterprises. These new developments seek to mobilise group resources and take advantage of new opportunities offered by the state and donor organisations.

Table 14: Participation in on-farm *mwethya* groups

Participant in farm *mwethya* groups	Frequency	Percentage
Husband and wife	5	11.0
Daughter	1	2.0
Husband	3	7.0
Wife	24	53.0
None	12	27.0
Total	45	100

Source: Field questionnaires, November, 1998.

However, most of the non-farm activities were focussed on current or social needs (42 percent and 13 percent respectively). Women were much engaged in rotational savings groups, which finance current needs like clothing, domestic utensils, and in fewer cases, school fees. Activities referred to as 'contributions' might also be for similar purposes, but as these were not defined we have classed them under *Savings and social*, which are connected with more occasional needs, such as the cost of dowries, illness and bereavement.

We enquired as to whether the groups had had external support, since donors and external NGOs may pledge to provide a given percentage of the project costs. Six of the 37, or 16 percent, had received such help – from Action-Aid and DANIDA in the Kathonzweni area, where they were assisting in dam and bore-hole construction, and the Anglican Church and World Vision around Wote, with community mobilisation and group training. The possibility of getting such help is a motive for shifting from an informal *modus operandi* to a more formal structure. There were other NGOs operating outside the study villages.

4.3 The history of self help

In the 1950s informal, traditional groupings were used and supported by the Community Development Department and the Agricultural Department for building terraces and making other rural improvements (Tiffen *et al.*, 1994). After independence in 1963, there were very active groups for community projects. They became part of the national *harambee* self-help concept (pull together in self-help) - which has been used by the Kenya Government from independence as the motor for rural development (Republic of Kenya, 1965; Mbithi, 1977; Tiffen *et al.*, 1994). The *harambee* self-help strategy has been:

> ....based on local initiative ... virtually all rural residents have been in it both as financial/or labour contributors and as users of completed projects (Holmquist, 1984:73).

Harambee projects soon accounted for 30 percent of rural development investment in the country (Mbithi and Rasmusson, 1977:13) They were actively promoted by the Community Development Department and its successor, the Ministry of Culture and Social Services (MCSS). Their trained groups in project planning, committee work, accounts, etc., enabling them to undertake terracing, school building, water projects, etc. more effectively, by pooling financial resources as well as labour.

Table 15 : Participation in off-farm *mwethya*

Activity	Both spouses	Daughter	Husband	Wife	Total
Investments					
Bore-hole			1		1 (2.2%)
Dams			2		2 (4.4%)
Buying goats	1			1	2 (4.4%)
Buying plots				4	4 (8.9%)
Business			2		2 (4.4%)
Farm tools				1	1 (2.2%)
Sub-total	1		5	5	12 (26.7)
Current needs					
Clothing and utensils	3	1	1	13	18(40.0%)
Fees payment	1				1 (2.2%)
Sub-total	4	1	1	13	19 (42.2)
Savings & social					
Contributions				3	3 (6.7%)
Dowry	2		1		3 (6.7%)
Sub-total	2		1	3	6 (13.3)
No participation					8 (17.8)
Totals	7	1	7	22	45
	(15.6%)	(2.2%)	(15.6%)	(48.9%)	(100%)

Source: Field questionnaire, November, 1998.

The Government recognised women groups as good vehicles for rural development and for attracting foreign funds. The creation of a Women's Bureau in the MCSS followed the UN Women's conference in Mexico in 1975, and was a manifestation of the Government’s commitment to the improvement of the welfare of women. Donor funds earmarked for gender-oriented rural development can now be easily channelled through women groups. This has led more women’s self-help groups to register with the MCSS. Such groups have elected officials, drawn up a constitution, keep accounts books and

make annual returns to the Ministry. This enables them to attract or solicit external material and financial assistance from politicians or donor agencies. However, as our data above shows, there are also many more informal groups which pursue traditional welfare and social purposes.

From about 1985 there was a decline in the commitment of government resources, particularly for training, as detailed below. Some groups maintain their momentum due to the accumulated know-how passed down amongst committee members. Some get continuing support from NGOs and the churches, but this is necessarily more patchy than a national service.

However, the self-help movement has also been affected by social change. More and more young people are spending most of their time in schools or in employment, so are no longer brought up to participate. Much of the kind of capital improvement once done by *mwethya* on a rotational basis round members' farms (e.g. terracing) is now done by individual families, often with hired labour (Gichuki, 2000). Other groups can be considered to have passed to a further stage of formalisation, becoming, for example, parent teacher associations or water user associations, with support from the appropriate ministry. But the workshop at Wote in 1999 suggested that many villagers feel the need for more management training if they are to try to solve some of their problems by this method - for example, in respect to organising a grain bank, or a marketing organisation (see its recommendations, in Mbogoh, 2000). Perhaps there has not been sufficient acknowledgement by Government of the need to support self-help organisations through training community efforts in "cost-sharing" and problem solving. Instead, it has diminished the resources available to the county councils and the MCSS for this purpose.

4.4 The official perception of the role of self-help

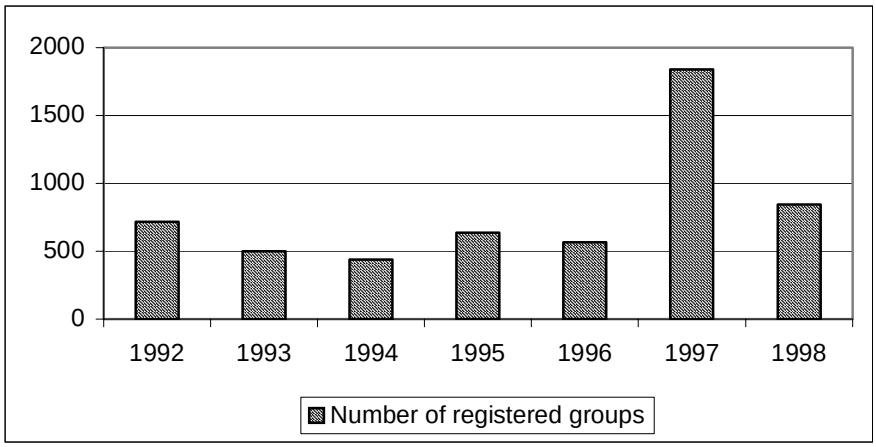
In the 1997/2000 Makueni District Development Plan, the potential for the *harambee* movement is acknowledged, and it is intended that this will be exploited in future. Past contributions have been recorded. In 1993 and 1995, some Ksh 8,848,816 and Ksh 18,184,650 respectively were raised through the *harambee* movement (Kenya, MPND, 1997b:46). Health facilities and schools were said to be the biggest beneficiaries. Many *harambees* go unrecorded.

According to the Wote office of the MCSS, at the close of 1998 Makueni had 5,533 registered groups (women's, self-help and youth groups). We do not know how many of these were active, but almost certainly those formed for political motives were short-lived. On the other hands, the less formal groups escape registration.

Recent changes in the number of self-help groups (which have members of either sex) are shown in Figure 1. The sharp increase in the number of registered groups in 1992 when the District had just been inaugurated may be associated with the posting of new social services staff when the new district was formed. Since then an average of 790 new groups have been registered annually. This average is, however, distorted by the unusually larger number of groups registered in 1997. In 1997 President Moi organised a national *harambee*, ostensibly to raise funds for women and youth-oriented income-generating projects but actually to raise the ruling KANU party's popularity in the lead-up to the 1997 general elections. Since prospective beneficiaries had to be in organised

groups, those who wanted to access this money quickly constituted themselves into groups and registered with the MCSS for the sole purpose of getting that money. According to an official at the MCSS Wote office, it is possible that the same people could form different groups, hence the high number of registered groups. As their main purpose was to access the money from the Presidential Fund, no sooner had the money been received than the groups disbanded. We cannot therefore rely on official figures as a measure of self-help activity.

Figure 1: Number of registered self-help groups



Source: MCSS, Wote office, 1998.

4.5 Training of SDAs and self-help group leadership

The Community Development Assistants (CDAs) or, as they later became, Social Development Assistants (SDAs), were originally paid for by the county councils and supervised by the Ministry of Culture and Social Services (MCSS). Later, they were regarded as seconded to the Ministry. One was posted to each location. However, by the late 1980s the training of CDAs at the Institute of Administration had ceased and most of the courses supported by the county councils closed. According to the DSDO in Wote, the arrangement of seconding SDAs to the MCSS ceased in 1998 when the Makueni County Council argued that with its declining budget, it could no longer afford to pay for employees who were working for another employer (MCSS). The SDAs, like all nursery school teachers, have been re-deployed by the County Council as revenue clerks.

By 1999, Makueni District had one DSDO, one Deputy DSDO and one SDA (for Kibwezi). The DC had also seconded seven clerical officers to the MCSS to act as SDAs in Wote, Matiliku, Kalawa, Kathonzweni and Nguu Divisions. Two of the seven clerks are receiving training in Social Work at the Embu Social Development Institute. Some NGOs have also found it useful to work through self-help groups and have provided them with training on leadership skills, book-keeping, accounts and conflict resolution. However, now that there are no longer any locational SDAs, coverage is more patchy.

It is difficult to see how the MCSS can meet the felt need for management training to run complex activities like grain banks and marketing societies, with their inherent danger of quarrels over resources, given its poor level of trained staff at a local level.

5 CHANGES IN FAMILY STRUCTURE AND SIZE

Kenya is one of the few Sub-Saharan African countries to have experienced remarkable declines in human fertility rates in the recent past. According to the Kenya Demographic and Health Survey data, mean children per family dropped from 6.2 in 1978 to 4.2 in 1989 and 3.7 children in 1993. The total fertility rate (TFR) declined from 7.7 per woman in 1984 to 6.7 in 1989 and 5.4 per woman in 1993 (NCPD *et al.*, 1989 and 1993) to 4.7 in 1998 (NCPD *et al.*, 1998). This remarkable decline has been attributed to increased contraceptive use and improvements in the acceptability of family planning, especially the pill and injectables (Nzioka, 1998).

Table 16: Household size and ideal family size by gender

Present household size	Desired (ideal) family sizes:								Grand total
	Male respondents				Female respondents				
	1-4	*5-9*	*10+*	*Total*	*1-4*	*5-9*	*10+*	*Total*	
4-5	3	1	0	4	2	0	0	2	6
	(12.0)	(4.0)	(0.0)	(16.0)	(10.0)	(0.0)	(0.0)	(10.0)	(13.0)
6-7	7	1	1	9	5	2	2	9	18
	(28.0)	(4.0)	(4.0)	(36.0)	(20.0)	(10.0)	(10.0)	(45.0)	(40.0)
10+	8	3	1	12	3	5	0	9	21
	(32.0)	(12.0)	(4.0)	(48.0)	(15.0)	(25.0)	(0.0)	(45.0	(47.0)
Totals	18	5	2	25	11	7	2	20	45
Col %	(72.0)	(20.0)	(8.0)	(100)	(45.0)	(35.0)	(10.0)	(100)	(100)
Row %	41.0	11.0	4.0	56.0	24.0	16.0	4.0	44.0	100

Source: Field questionnaire, November, 1998.

The Machakos study revealed a general desire for large families in the newly settled areas such as the present Makueni District because the family was a reservoir for labour. However, the macro-economic changes which have taken place in Kenya (particularly in the 1990s) seem to have contributed to a rapid fertility transition, leading to a desire for smaller families. Data from this study show that 87 percent of the respondents had family sizes of between 6 to 10 or more (this figure is crude in that it included other relatives living with them). Families were categorised into small, medium and large while controlling for sex of respondent. The findings showed that the percentage of men who desired small families of up to 5 children was about three times that of women (41 percent vs. 16 percent). This is not unexpected, because men in general tend to shoulder more of the family expenses than women. In each of the two sexes, most of the

respondents indicated a desire for small families (72 vs. 45 percent). In our talks with most respondents, the desire for small families was reiterated with 2-4 children being considered the ideal family size now - provided that a couple had children of both sexes.

The main reason advanced for the desire for smaller families was the high cost of living cited by 34 (78 percent) of the respondents. Interestingly only one respondent argued that she had changed her ideal family size due to knowledge of family planning. We can therefore dismiss family planning as the key contributory factor to the transition to smaller families in Makueni. It may assist, but it does not by itself change intentions. What then are the reasons for the smaller family sizes, and is this desire uniform across Makueni?

First, the rapid macro-economic changes which have occurred since the early 1990s coupled with the introduction of Structural Adjustment Programmes (SAPs) have impacted negatively on standards of living in Kenya. The costs of bringing up children and educating them have made children more of a liability than an asset. With the removal of government subsidies from social amenities, such as hospital and schools, parents have had to shoulder a much heavier responsibility in social provisioning. Those with many young children seemed to express regrets. Those with many working, grown up children seemed happy because such children were assisting them. However, a retired man from Kathonzweni sympathised with young people who were now trying to raise children. He said:

> At our time, life was easy. We had land to farm and graze. We also had lots of livestock. You only sold one bull and could afford to pay school fees for five children and sometimes have surplus, but now we neither have such land or even livestock. The price of everything is high. We pay for everything. Long time ago (1960s and 1970s) the Government paid teachers and provided stationery, but now we pay for everything from primary to the university. Only the sons and daughters of the rich get educated. (Field interviews, November, 1999.)

Those who expressed the desire for more than 6 children usually already had large families and did not wish to be seen as regretting having so many children. To express such regrets in the Akamba society is like refusing to acknowledge 'God's blessings'.

6 DISCUSSION OF FINDINGS

This study sought to contribute to testing two major hypotheses:

1. By promoting education, self-help organisations, and the free flow of information, farmers' access to new technologies can be extended, and their capacity to select and manage investments in natural resources can be increased.
2. Off-farm work is both a possible generator of investment capital, and potential spin-off from more productive farming. Investment in children's education increases earning power in off-farm jobs and facilitates the recycling of funds into farm investments.

The assembled qualitative and quantitative data show that parents in Makueni are

convinced that a good education is essential to enable their children to support themselves and to help their families. An important motivation is to help them get a remunerative non-farm job, seen as an essential adjunct to highly variable farm income, at the mercy of erratic rains. Other papers (Nelson, 2000, Mbogoh, 2000) will show that part of these non-farm earnings are used to improve the farm. However, the additional costs of education, occasioned by macro-economic changes and shifts in government policies over the last ten years, and a shrinking job market have led to a reassessment of the value of more expensive forms of education, especially for boys. Thus future trends may not simply be a continuation of those seen in the past. Indeed, trends show that girls are increasingly receiving priority in schooling and Makueni seems to have a higher enrolment of girls in school than boys, at all levels.

On self-help organisations, the picture is mixed. Local group organisations such as church-based and self-help groups in the area are numerous and expanding into some new fields. Initially these organisations were encouraged and supported by the local authorities, who saw them as vehicles for development in the rural areas. However, with diminished resources, training is being neglected (except by some NGOs) and many projects fail to get started, or if started fail to succeed, because of a felt lack of the necessary managerial expertise.

The family has changed from an extended to a nuclear one, and it is about to experience more change in the future, as the number of children per family declines. This is bound to affect significantly the way local farmers invest in education and in their farms, the diversity of incomes within the family and the amount of labour available.

ANNEX

Table A1: Children in school, Makueni District, 1992-1998, and gender (M= male, F=female)

	1992		1993		1994		1995		1996		1997		1998	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Nursery	16823	16246	17116	16190	17514	16715	17891	16852	19011	17799	17718	19581	18047	16815
Pre. sch	94101	97739	93973	90946	98453	101300	107579	107904	98771	100049	99635	102637	102349	104007
Sec. sch	13398	10085	11677	10448	9412	9054	10428	9875	10166	10048	10485	10126	10720	11374

Source: Kenya, Ministry of Education, Wote office.

Table A2: Machakos District school population by sex and age-group, 1989

Age	Male	%	Female	%	Both	%
6 - 9	60,317	25.0	62,108	27.0	122,425	26.0
10 - 14	97,727	41.0	96,903	42.0	194, 630	42.0
15 - 19	67, 935	28.0	60,496	27.0	128,431	27.0
20 - 24	14,896	6.0	9,107	4.0	24,003	5.0
Totals	240, 875	100	228, 614	100	469,489	100

Source: Kenya, CBS, 1994.

REFERENCES

Bahemuka, Judith. (1986) *Social anthropological survey of small-scale farming in Kenya.* On-farm grain storage project, Ministry of Agriculture, Nairobi.

Bevan, D., Collier, P and Gunning, J. (1993) *Agriculture and the policy environment: Tanzania and Kenya.* OECD, Paris.

Gichuki, F (2000) 'Makueni District profile: Farm development, 1946-1999, *Dryland Research Working Paper 1*. Drylands Research, Crewkerne, United Kingdom.

Holmquist, F (1984) 'Self-help: the state and peasant leverage in Kenya', *Africa* 54/3: 73.

Kenya, (1965) *African socialism and its application to planning in Kenya*. Government Printer, Nairobi.

Kenya, CBS (1994) *Kenya National Census, 1989.* Central Bureau of Statistics, Nairobi.

Kenya CBS, (1996) *Welfare monitoring survey II: Basic report 1994.* Central Bureau of Statistics, Ministry of Planning and National Development, Nairobi.

Kenya, Ministry of Education, Wote office (unpublished records).

Kenya, MPND (1997a) *National Development Plan 1997/2001*. Ministry of Planning and National Development, Nairobi.

Kenya, MPND (1997b) *Makueni Development Plan 1997/2001*. Ministry of Planning and National Development, Nairobi.

Mbithi, P. M. (1977) *Rural Sociology and Rural Development.* East African Literature Bureau, Nairobi.

Mbithi, P. M and Rasmusson, R. (1977) *Self-reliance in Kenya: the case of harambee.* Scandinavian Institute of African Studies, Uppsala.

Mbogoh, S.G. (2000) 'Makueni District profile: Crop production', *Dryland Research Working Paper 7.* Drylands Research, Crewkerne, United Kingdom.

Mbula, Judith (1977) *The impact of Christianity on family structure and stability: the case of the Akamba of Eastern Kenya.* PhD dissertation, University of Nairobi.

Munguti, K. (1998) 'The face of rural poverty: the case of Makueni District, Kenya', in Bahemuka, J., Nganda, B. and Nzioka, C. (eds.) *Poverty revisited: Analysis and strategies towards poverty eradication in Kenya.* Ruaraka Printing Press, Nairobi.

Murton, J. (1997) *Coping with more people: population growth, non-farm income and economic differentiation in Machakos District, Kenya.* PhD thesis, University of Cambridge.

National Council for Population and Development, Central Bureau of Statistics and Macro-International (1989) *Kenya demographic and health survey*. Macro-International, Calverton, Maryland.

National Council for Population and Development, Central Bureau of Statistics and Macro-International (1993) *Kenya demographic and health survey.* Macro-International, Calverton, Maryland.

Nelson, J. (2000) 'Makueni District profile: Income diversification and farm investment, 1989-1999', *Drylands Research Working Paper 10.* Drylands Research, Crewkerne, United Kingdom.

Newman, J.R. (1974) 'The Ukamba members association', *Transafrica Historical Papers 3.* Transafrica Publishers, Nairobi.

Nzioka, C. (1986) *Vocational training and rural employment: An investigation into some of the factors which influence the local employment of youth polytechnic*

graduates in Machakos District, Kenya. Unpublished MA thesis, University of Nairobi.

Nzioka, C. (1998) 'Factors influencing male involvement in family planning', *African Journal of Reproductive Health*, 2/2: 122-141.

Ockwell, A.P., Parton, K.A., Nguluu, S. and Muhammad, L. (1990) *Relationships between farm household and adoption of improved practices in the semi-arid tropics of eastern Kenya*. Paper presented at join KARI-ACIAR-CSIRO Symposium, Nairobi, Dec, 1990.

Ongolo, J.H.O. (1983) *The impact of village polytechnic programme on employment and rural development in Kenya.* Unpublished MBA thesis, University of Nairobi.

Orwa, W.O. (1982) *An investigation of vocational education in Kenya with reference to the village polytechnic programme.* Unpublished MEd thesis, University of Nairobi.

Tiffen, M, Mortimore, M and Gichuki, F. (1994) *More people, less erosion: environmental recovery in Kenya.* John Wiley and Sons, Chichester, United Kingdom.