CROP POST HARVEST PROGRAMME

Overcoming informational constraints: improving horticultural marketing and technical information flows to smallholders

R 7151 (ZB 0126)

TANZANIA COUNTRY REPORT

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R7151 Crop Post Harvest Research Programme

1 Introduction

This Country Report presents the findings of a study on horticultural marketing information constraints in Tanzania conducted by Kingston University and Sokoine University of Agriculture, Morogoro. This study is part of a broader study led by Wye College, University of London, that also covers Ghana and Zimbabwe.

This Country Report contains a number of key sections:

- Introduction and country overview
- A description of the research activities
- The rationale for the selection of survey areas
- Research methods and data collection
- Discussion of findings relating to farming activities
- Discussion of findings relating to farmer marketing
- Summary statistics of the survey of producers
- General discussion issues and recommendations

This Country Report is one of the main outputs from the broader study. In addition, other documents include[1]:

- An abbreviated version of this report is contained in the project Summary Report.
- A full literature review, is published separately
- Country Reports for Ghana and Zimbabwe

Previous reports under this project have identified market information as a key area for agriculture in sub-Saharan Africa that is poorly understood. It is widely accepted that farmers are in a weaker bargaining position in relation to the traders. The research carried out as part of this study, it appeared that part of this weakness was due to farmers having poor access to information about the market. This meant that they were unclear about the details of demands, prices, quality or the location of alternative outlets.

What little literature is available on the subject of access to marketing information suggests that the restrictions on access to market information may be the result of farmer characteristics or due to the structural circumstances in which they find themselves. Interpreting the literature suggests that key individual characteristics that may be influential may include gender, level of education attained, family, ethnicity and social relations. Key structural characteristics that may affect access to useful market information may include distance from the market, size of production scale. In addition, further issues, such as repeat trading ('clientisation'), trust and reputation.

Analysis of these features of the marketing system are focused on helping overcome the outcomes of the market problems they produce. These include periodic gluts and shortages, unexploited opportunities, poor quality produce, poor returns on production and marketing. This is further exacerbated in the horticultural market by the high perishability of most of the produce.

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National governments have attempted to overcome market imperfections through a spectrum of policy responses that include the collection of market price data to active intervention in the marketing process through state owned monopoly marketing boards. There are very few examples of such approaches being successful. The research approach adopted by the full study has therefore been drawn from the New Institutional Economics tradition, which views market problems as being solved through the evolution of institutions to overcome the market uncertainties. The research hypothesis is therefore that reducing informational problems will be brought about through two mechanisms:

- private and voluntary responses to informational requirements: the development of longer term contractual relationships is a way of aligning the incentives faced by different market participants for the private provision of information, and
- co-ordination functions of local government (rather than national institutions).

The full project has focused on vegetable marketing in three SSA countries, Ghana, Zimbabwe and Tanzania. The aim was to find an appropriate balance between the co-ordinating role of the state and spontaneous private sector initiatives to overcome a common but little researched weakness in commercial rural food markets, informational imperfections.

This Country Report discusses primary data collected specifically with the intention of analysing the question of market information available to small-scale producers in Tanzania.

An extensive review of the literature identified the following key data aspects of farmer and trader activity which may influence issue relating to market information:

1. Product specialisation and product characteristics
2. Access to physical infrastructure
   eg distance esp. roads, telephone, radio transmitter/receiver.
3. Market conditions, such as:-
   - The level of demand for the crops produced.
   - Are traders competitive in seeking produce or do producers have difficulty selling at reasonable prices? i.e. is the market vigorous or residual?
   - Trading practices?
   - Is there co-operation among farmers to sell crops?
4. The system of landholding and inheritance as an indicator of access to resources for different social groups?

With these key issues in mind, the following objectives were set:

- Conduct formal surveys among producers to establish farmers' information sources and needs, and test for market orientation and access, focusing particularly on issues of risk management, information strategies and reputation and trust in the trading relationship.
- Analysis of a case study of a successful producer organisation;
- Interviews of traders (small urban-based rather than metropolis-based) to identify the incentives for closer vertical co-ordination with producers
- Collect secondary market information relating to the horticultural markets in the areas under investigation.

2 Country Overview

2.1 Introduction

Tanzania has consistently ranked among the world's poorest economies dropping from 14th lowest GNP per capita in 1982 to second lowest in 1990, with a rate recorded at US$110 (Messkoub, 1996). More recently the GNP per capita has increased to US$210 bringing the country to 127th place out of 133 (World Bank, 1998). Agriculture is the main economic sector, accounting for 17 per cent of the full-time employment, 45 per cent of GDP and 53 per cent of the value of exports (United Republic of Tanzania, 1994). However, the level of technology is relatively low, with low levels of use of both organic and inorganic fertilisers, credit and improved seeds. The agricultural systems however, are highly varied with highly capitalised production mixed with low technology, small scale production.

Bryceson (1993) noted the strategic importance of food marketing to the Tanzanian economy, while at the same time explaining that traders have been seen by Tanzanians as pariahs for decades. She suggested that this contradiction could explain partly why food production in the country has remained primarily a subsistence activity and why surplus production for sale has been difficult to encourage. Hyden (1980) suggested that the difficulties in encouraging smallholders to produce for markets have arisen from a fundamental mis-match between the motivation of the state and the markets on the one hand and the peasant farmers on the other. Much of the activity in relation to horticultural production and marketing is not necessarily motivated by a purely economic logic.

2.2 Horticulture in Tanzania

Horticultural crops are produced throughout Tanzania, mainly on a small scale, with vegetables accounting for an estimated 318,000 hectares in the 1988/89 growing season and fruit for 1,650,000 hectares. The main regions are the coastal belt, the central plateau, the Lake zone and the highlands. This is mainly due to the coincidence of favourable growing conditions, high population densities (providing a concentration of consumers) and relative proximity to large urban markets (FAO, 1994). One of the major problems for producers and traders alike is the seasonal peaks and troughs in the market (Lynch, 1992).

Recent surveys have identified considerable, and as yet relatively untapped, potential for horticultural export production, and there is a growing number of businesses exporting horticulture and processed horticultural products (Minster Agriculture Ltd., 1988; Amka Trust, 1997). The Tanzanian government are increasingly interested in the potential that these 'non-traditional export crops' may afford in extra foreign exchange earning capacity.

Much of the research that has been published on food production and marketing in Tanzania, and indeed throughout the world, focuses on staple foods because of their strategic importance in food security. Fruit and vegetables have been neglected although the sector accounts for half of non-staple food production in Tanzania. In some of the key production areas, such as parts of Morogoro and Tanga Regions fruit and vegetables can represent the dominant crops. This section brings together some of this research with a view to evaluating the post-harvest aspect of the fruit and vegetable supply chain and in particular the role of market information in the marketing of these commodities.

A result of a number of studies of a wide range of urban food markets in Tanzania is that, like Ghana, despite the apparent disorganisation and under-capitalisation of the private markets, they have proved capable of assuring supplies to large urban areas under adverse circumstances and have constantly enabled farmers to adapt to urban consumer demands.

2.3 Constraints and research issues

A recent industry review conducted by the MDB identified the main constraints of fruit and vegetable production as limited supply of good quality seeds, the high costs of agrochemicals, and poor marketing infrastructure and insufficient market information among traders and producers (Mbelwa, 1994: 8). The report goes on to recommend studies to ensure that a more comprehensive understanding is gained of the industry. However, a recent consultants' report on the industry, while presenting a comprehensive study on certain aspects of the industry, devoted only one short paragraph from a 90 page report to the issue of market information (Kiriwaggulu, Mbelwa and Mashamba, 1996).

Among a number of recent studies on urban and peri-urban agriculture and horticulture in Tanzania, some have considered the issue of marketing, but few have devoted time to the issue of market information. Mascarenhas (1984), in particular, argued that the horticultural sector in Tanzania and in other sub-Saharan African countries is of strategic significance to the nutritional status of the population. He argues that there is an urgent need to gain a better understanding of the production and marketing of horticultural crops. An aspect of the current deficiency to which he alludes, is the inadequate information available about the markets.

Research conducted at the end of the 1980s on fruit and vegetable supply to the Dar es Salaam market showed that most farmers found radio broadcasts of market information more or less useless as the price at the Dar es Salaam wholesale market did not necessarily relate to the prices farmers could negotiate with rural buyers (Lynch, 1992). A later study also found that most horticultural traders found such radio broadcasts inadequate to their needs (Marketing Development Bureau, 1993). What traders mainly wanted from market information was the potential of new market opportunities.

The studies on agriculture in Tanzania raise a number of research issues. These include the role of women, access to and control over productive resources, and informational constraints.

2.3.1 Women's role in agricultural production

It is estimated that women constitute about 70-80% of the rural labour force in Tanzania. This figure is not far from the overall picture of women in agricultural production in Africa which stands at 70% (Boserup, 1970; Tadesse, 1984; Dixon-Mueller, 1985). According to available information, it is said that about 70 % of the hoeing is done by women; 60% of the crop harvesting; 80% of the porterage of the crops from the field to hoe or storage; 90% of the food processing; 60% of the marketing of the excess products and 50% of planting (Omari, 1989). Moreover, women's working day is reported to be much longer than men's due to their dual productive role and reproductive roles, both of which are integral to the economic status of the household.

2.3.2 Access to and control over productive resources

Although women may contribute more labour than men, they often do not have control over productive resources. The Ujamaa Village Act gave the *de facto* continuous land

entitlement to the male head of household (Stoas Agriprojects Foundation, 1996), and subordinated women to their husbands. Women have also often lost customary access to land through privatisation programmes which have registered land under the name of the male household head (Platteau, 1996). In times of stress or increased opportunity, women's labour can be appropriated by men for male agricultural enterprises but the reverse is rarely possible. Opportunities for women to supplement their incomes from export and cash crops, and from non-agricultural sources and casual farm work are far less widely available to women than men, because of their household responsibilities. Women also lack access to cooperatives, and to credit and agricultural inputs. In short, women are significantly more vulnerable than men.

The study by Stoas Agriprojects Foundation (1996) in Kipera village, Morogoro, provides valuable insights as regards how great a problem marketing represents relative to supply; and gender-differentiated constraints in production and marketing. PRA techniques were used and constraints ranked.

For both men and women, the biggest was lack of access to credit which limited access to capital for buying inputs, hiring labour and hiring of tractors. Lack of agricultural implements which limited the cultivated farm size and increased the drudgery of cultivation was ranked the second main constraint by both men and women. Extension services were ranked equally as a constraint by both men and women. The little information that was given was usually to men because it was the men who attended village meetings where usually such agricultural information was given. Visits at household premises for the purposes of delivering information were very rare, and when made it was usually the male farmers who were the recipients.

2.3.3 Market access

Poor market was ranked below supply side problems. It was revealed that men did not see poor market as a severe problem because they almost always found a market for their products. Women mentioned poor market as a constraint because of their inability to sell the food surpluses themselves from the farm because most sales were off-farm. Instead men had to carry their food surpluses to markets away from the farms. This reduces women's supply response to food production: since they do not control the income from sales made by men, they do not benefit from surplus food production.

Accessing product markets was also reported to be a problem for women because they usually lacked information on markets due to social factors and time constraints.

3 Discussion of Methods

3.1 Research Activities

The field survey was initiated by a preliminary visit in July 1998 by the Kingston University investigator to Tanzania to work with the Sokoine University of Agriculture (SUA) investigator to identify the field areas. This visit involved visiting a number of areas shortlisted, conducting interviews with key informants (including village leaders, agriculture extensions officers, NGO representatives, and researchers with complimentary interests) as well as participants in the horticultural marketing system. The outcome of this visit was the selection of five villages in two regions, Morogoro and Dodoma, the development of the proposed research plan and the generation of draft interview schedules.

A second visit took place in December 1998 to finalise the interview schedules, pilot the survey and begin the case study interviews. This involved visiting the five study villages, conducting a number of interviews, group discussions and begin the farmer survey. In addition, further key informant interviews were carried out, including more Ministry of Agriculture officers.

The SUA investigator completed the data collection begun in December and supervised the data entry. This was checked and analysed in parallel at Kingston University and SUA.

A third visit took place in July 1999 by the Kingston University investigator and the principal investigator from Wye College to attend a workshop with the project stakeholders. This involved the presentation of the aim of the full project, including the elements in Zimbabwe and Ghana, a presentation of the preliminary results of the Tanzania investigation and discussion among the stakeholders about the key marketing information constraints and possible solutions.

3.2 The Selection of Survey Areas and Production Conditions

An initial short list of areas for focusing was drawn up as a result of the first visit of the Kingston University investigator to Tanzania. These are summarised, with brief details of their characteristics, presented in Table 1.

In the light of the considerations discussed above, it was proposed that the data collection activities focus on :-

1. one case study which is well-linked to the market
2. two contrasting areas which are poorly linked to the market but which show potential for the production of horticultural crops
3. some data collection should take place in the key markets ie Dodoma and Dar es Salaam to see how these affect the production activities of the producers and the local traders

As a result five villages in two areas were identified for the focus of the horticultural producer survey. These were to fulfil the requirement for locations which have the appropriate environmental circumstances for horticultural production but have poor links with markets. These included:

- Mbabala A, Dodoma Urban District, Dodoma Region.
- Mvumi Mission, Dodoma Rural District, Dodoma Region.
- Malui, Kilosa District, Morogoro Region.
- Ulaya Kibaoni, Kilosa District, Morogoro Region.
- Ngole, Kilosa District, Morogoro Region

Table 1 Shortlist of areas for focusing the data collection activities

Location	District	Crops	Characteristics
Mikuyuni	Morogoro Rural	Temperate fruits and vegetables - pineapples, oranges, bananas (ripe), coconuts & black pepper	Well developed links with Dar es Salaam and Dodoma
Malui Village	Kilosa District Morogoro Region	Tomatoes, onions, cabbage, sweet pepper, okra	Environmental potential for horticultural production, with areas not cultivated because of a lack of market, but poor market relations
Mantumbulu Village (Atomic Speed Group)	Dodoma	Tomatoes, onions, bitter tomatoes, sweet peppers, celery, pepper, carrots, grape seedlings	Good environment with dammed reservoir and irrigation system and improved soil; well known by traders who come from a range of urban markets - Dar es Salaam, Dodoma, Morogoro, Tabora
Bihawana	Dodoma	Tomatoes, mlenda, pumpkin	Poorly developed links to market, relies on riverbed water holes in dry season
Dodoma Market	Dodoma City	All according to season	Well developed with links to main producing areas in Dodoma Region as well as Morogoro, Tanga, and Singida (for onions)
Mvumi Mission	Dodoma	Tomatoes, green maize, sweet potatoes, beans, cow peas, pumpkins, mangoes	Good potential benefiting from seasonally flooded depression, but weak market links and reluctance of farmers to organise

In addition, in depth interviews were carried out in the Atomic Speed Garden Group near Mantumbulu Village. This is a group of progressive young farmers who are making use of a dam nearby to supply irrigation to fields they have improved with additional soil from nearby locations. They are using a range of innovative production techniques and are well known to traders from a range of important urban markets.

While collecting data in both Dodoma and Morogoro Regions it became clear from interviewing the farmers that there had been a particularly difficult previous season. A recent FAO (1999) report estimates that 1 million people in thirteen regions, but particularly in Dodoma, Singida and Morogoro, would require food assistance. The reason for this is related to the flooding caused by particularly heavy unseasonal rains during mid 1998, followed by the failure of the *Vuli* rains (the short rains which fall in November and December. It is to be expected that this poor season may affect the results reported by respondents.

For example one farmer in Malui Village, Kilosa District, has 15 orange trees - mainly for home consumption, but last year they were waterlogged by the flooding and his orange harvest was very poor. He also reported harvesting only three bags of maize from three

acres of land because of flooding. Last year he had tried to grow a new variety of tomatoes ('americk') which he had heard about and asked the extension officer about, but the rains have not come as expected and he was not expecting a good harvest. During the previous year the river separating the village from Kilosa burst its banks, affecting the bridge on the most direct route to Kilosa market (5km) where the nearest market is. This meant the farmers had to go to the market via the railway bridge (7km) rather than use the shorter route

4 Research methods and data collection

The research methods were eclectic, employing qualitative methodologies in order to capture the complex and particular characteristics and incentive structures of relational contracting, and will include case studies and key informant interviews. These will build on a variety of existing reports. Existing quantitative data, for example those collected by the Marketing Development Bureau of the ministry of Agriculture, are weak in parts and have not addressed directly the characteristics of producer and trader behaviour. The simply represent the regular collection of price data.

The fieldwork methodology in Tanzania paralleled that in Ghana, where the respective states of the horticultural sectors are comparable. In Zimbabwe, a different methodology was used to test for the potential for formal provision. Further details can be obtained from the relevant Country Reports and the Full and Summary reports of the project.

In Ghana and Tanzania, there were three principal investigative approaches:

- formal surveys were conducted among producers to establish farmers' information sources and needs, and test for market orientation and access, using concepts developed in from the review of the literature relating to factors likely to affect access to information, such as distance from the market, personal aptitudes and attitudes, trust and reputation;
- qualitative data were collected on case studies of successful producer organisations;
- traders (small urban-based rather than metropolis-based) were interviewed to identify the incentives for closer vertical co-ordination with producers.

The total 'sample' aimed to complete 100 interviews, 25 in each of four villages, two relatively close to an urban market Mvumi Mission and Mbabala A, both villages are approximately 45 minutes to one hour by car or bus from Dodoma. A further two villages were selected because they were relatively isolated from a major urban market, Malui and Ulaya Kibaoni both in Kilosa District, Morogoro Region. The fifth village Ngole, was added as it was alongside Ulaya Kibaoni and a number of the farmers interviewed had land in both villages, as they were both in the same ward, and were willing to participate. The three villages in Kilosa District are located at various distances from Kilosa town, there is limited transport infrastructure. Malui has no bus service, and so villagers rely on travelling by foot or bicycle. In the case of the other two villages there are regular services offered by pickups operating as buses which pass between the Morogoro-Iringa Road and Kilosa Town. Table 2 presents the distribution of the respondents among the village locations. Within the villages the investigators attempted to spread 'sample' to ensure that interviews of farmers reflect farmer differentiation within each village as much as possible. This was to reflect features such as gender, level of wealth, access to resources, services and infrastructure.

There was no attempt to use a rigorous sampling method, in order to reduce the time of execution and therefore the cost. The qualitative nature of the data collection makes the problem of bias less severe. The intention is not to draw conclusions for the population, but to investigate the key themes.

Table 2 Distribution of Farmer Respondents by Village and Region

Village	No of Farmers	Region	No of Farmers	Percent
Mbabala A	29	Dodoma	57	27.1
Mvumi Mission	28			26.2
Malui	23	Morogoro	50	21.5
Ulaya Kibaoni	16			15.0
Ngole	11			10.3
Total	*107*		*107*	*100.0*

Three research assistants were recruited and trained to complete the survey. Taking part in various aspects of the first two visits, they were able to clarify the aims and objectives of the project. The SUA investigator supervised their data collection activities and two of the assistant took part in the data entry activities.

A successful producer group was also identified in the first visit as being a useful comparison to the villages, as it clearly has very good links with markets. This is the Atomic Speed Garden group, located close to Mantumbulu Village in Dodoma Urban District. An interview schedule was developed to investigate the relationship between the producers and those who buy from them, their information gathering strategies, how the market influences their production decisions and the relations between the members of the group.

5 Summary Statistics of Survey of Producers

A total of 107 interviews were carried out using the interview schedule. This has provided sets of both qualitative and quantitative data that will be discussed.

Table 3 summarises the general descriptive statistics. This highlights a wide range of respondents active in horticultural production in the villages included in the survey. However, the average level of education is slightly high relative to the general farming population and the mean family size suggested a lower size than the average farming population.

Table 3 General Characteristics of the respondents

	Mean	*Range*	*Min.*	*Max.*	*Std. Deviation*	*N*
Age	37.0	67.0	18.0	85.0	12.7	107
Number of years Education	5.5	16.0	0.0	16.0	3.4	105
Family Size	5.8	18.0	1.0	19.0	2.9	107
Number of acres	5.5	18.75	0.5	19.25	3.2	107

Table 3 provides details of the resources available to the respondents and their households. The data collected mainly concerns their access to land for growing crops. This demonstrates the small scale of most of the farmers questioned, with the mean number of acres available to the households at 2.7. The importance of horticultural crops is clear, as the mean number of crops is 2.0 while the other crops average 3.0. Although there are a greater umber of other crops recorded, many of the households are predominantly subsistence – or at least partly subsistence – production-based. This type of agriculture is normally characterised by a range of crops to spread the risk and meet the household's needs. In such households, income earning crops often account for a relatively less significant size of land.

Table 4 Age distribution of Respondents

Age Group	Number of Farmers	Percent of Farmers
<20	3	2.9
20-35	45	42.9
36-50	46	43.8
50+	11	10.5
Total	*105*	*100.0*

The evidence shows that there is good range of age groups represented in horticultural farming, with almost half of those interviewed being less than 35 years old. This is a relatively young

Table 5 Educational Attainment Among Respondents

Educational Attainment	Number of Farmers	Percent of Farmers
None	19	18.1
Basic Primary	16	15.2
Complete Primary	63	60.0
Secondary and Above	7	6.7
Total	*105*	*100.0*

Education is widely used as an indicator of a farmer's ability to make use of technology. The same could be argued for the farmer's ability to collect, manage and apply information relating to production and marketing activities. A small but significant proportion of the farmers interviewed indicated that they had no formal education. However 63, or 60.0 per cent of those responding had not only attended primary school, but had completed their primary school education. This indicates that the majority of farmers interviewed would be able to carry out basic tasks involving literacy and numeracy. This is high by comparison with broader surveys of farmers in Tanzania as a whole and parallels the findings of Lynch (1992 and 1999) that vegetable producers are better educated than the general farming population.

The size of the agricultural household in rural Tanzania gives an indication of the availability of labour for the production process, particularly where the production is at a low level of capital input. The survey shows that only

Table 6 Size of Household of Vegetable Farms

Size of Household	Number of Farmers	Percent of Farmers
1-5	44	41.1
6-10	56	52.3
1-15	6	5.6
>16	1	0.9
Total	107	100.0

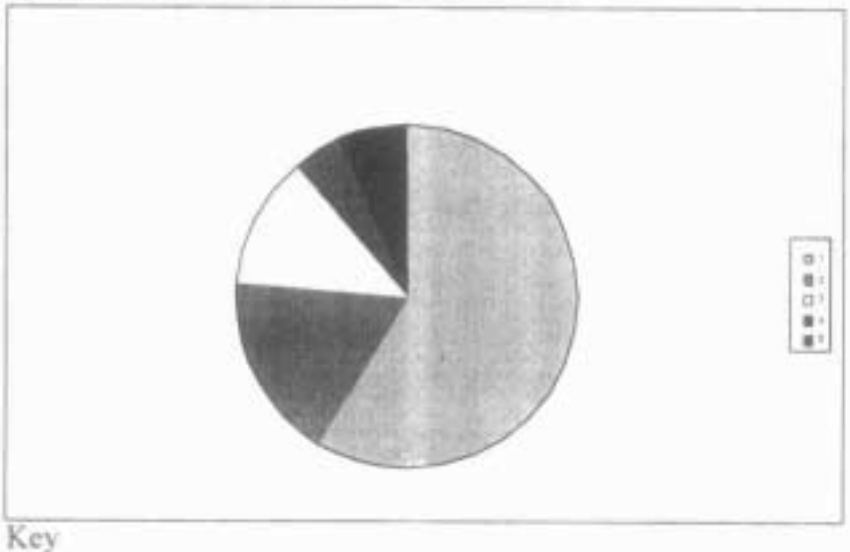
In general the size of the household unit relates strongly with the stage at which the head of household has reached in the lifecycle. More in-depth interviews indicated that there may be relatively complex relationships between households, where sons and daughters families may return to the parents' farm to provide additional labour even as they are setting up their own independent households. Considering each household as a self-contained unit may to some extent be misleading. However, the interviews suggests that many of these arrangements focused on staple foods, rather than more commercially oriented production activities such as vegetables. There may be scope here for further research examine in more detail the relationships formal or otherwise between households involved in vegetable production.

Table 7 Ownership and use of the land resources in survey villages

	Range	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*	*N*
Total farm size	18.75	0.5	19.25	5.5	3.2	107
Husband's Land	18.75	0.5	19.25	5.3	3.8	55
Wife's Land	10.25	0.25	10.25	2.8	1.4	18
Family Land	11.75	1.5	11.75	5.1	3.0	43
Other Land	4.5	0.25	4.5	1.7	0.9	22
Number of Horticultural Crops	4	1	5.0	2.0	1.1	106
Other Crops	6	1	6.0	3.0	1.4	107

Table 7 shows the range of different ways land can be held by a household. The group discussions suggested that practices varied between the regions. The differences mainly revolved around the interface between the private land market and the customary tenure relations. For example the men tended to report all household land as belonging to the household, while women tend to provide a more detailed breakdown of the ownership of the land. Group discussions suggest that male heads of household see the family's land as part of their decision-making process, while the women try to keep some elements separate. The reporting of the internal household tenureship relations suggests diminished trust between the genders, in relation to the distribution of resources.

Figure 1 Relationship with the Head of Household



Key
1. Husband
2. Wife
3. Son
4. Daughter
5. Other

The majority of respondents interviewed were the male heads of household. The commercial production of fruit and vegetables is dominated by men. Although in the past fruits and vegetables were seen as crops that mostly women cultivated to provide for the household, respondents, both male and female reported that since vegetable markets have become more commercial, men have adopted them as cash crops. Women still produce fruits and vegetables, but on a very small scale and tend to only sell to traders who come

to their farms or at local retail and at periodic markets on a very small scale. 71 per cent of the respondents in the survey were women, but the questions asked both men and women about the allocation of land among household members so data has been collected which will yield some results relating to the gender balances within the household. The field data collection attempted to compensate for this by interviewing a number of women farmers either in-depth or in group discussions. Group discussions with women in the survey villages elicited comments on many women's desire to be more involved in fruit and vegetable trading. However, they also commented on the difficulties women faced in attitudes, both from their men and from the male traders in the market. The reason given in the group discussions for the male domination of commercial horticulture, included the intensity of the work – particularly clearing and preparing the land and bucket irrigation. However, in one mixed gender discussion group in Mvumi Mission, after arriving at this conclusion, the somewhat contradictory comment was made that the more commercial the crop the more male dominated it was. In Malui Village the women pointed to the problem of transportation of produce. They argued that it is difficult for women physically and culturally to take produce to market and sell to traders there. These discussions provide further evidence suggesting that there is diminished trust in relation to access to resources between the genders. In the situation of trading, Tripp (1992) suggests that the conflict between the socialisation of women in Tanzanian culture and the behaviour required for successful participation in the market place, makes it difficult for them to consider becoming involved in a market environment.

In relation to the specific point about market information, women reported in single-sex group discussions in more than one village, the that if they sell crops from the farm – whether from their own plot or the family's plot – they must tell their husband the details of the sale. They may also have to give him a proportion of the takings. However, they also complain that if their husband sells produce from the farm, they may never know what he has made. So they sometimes sell without telling the husband or try to avoid disclosing the full details of the sales they make. This they argue allows them to keep some money for necessities in the house. This suggests that the flows of market information within the household are not entirely free and that this situation of gender suspicion results in market information being lost within the household, leading to inaccurate information circulating in the village.

6 Farming Activities

The farmers were asked to provide details of their farming activities in order to assess the relative importance of horticulture to their overall farming activities. A selection of these are summarised in Table 8. This table shows a wide range of farm sizes, from 125 acres devoted to tomatoes and maize in the case of one farmer, to very small plots in the case of the majority. However, this maximum seems so much larger than the rest of the sample, that reservations must be kept about its validity, until it has been verified. This is demonstrated by the mean acreage for each crop being very small, the largest areas being devoted to maize (2.4 acres), onions (2.1 acres) and tomatoes (1.8 acres). These small sizes reflect the low level of commercialisation in each of the villages surveyed. However, although tomatoes do not account for the largest size of land in the villages, it is one of the most widely grown crops, being grown by 72 per cent of the respondents. Table 8 also shows that although the farmers interviewed are vegetable farmers 70 per cent of them grow maize devoting a mean of 2.4 acres to its production. Tomatoes and maize are the two most important crops to the respondents by a considerable margin. Among the vegetable crops, the most important, other than tomatoes, include okra, onions, spinach, cabbage and eggplant. The non- vegetable crops include maize, paddy, sorghum/millet, sweet potatoes, groundnuts, and cowpeas.

Table 8 Amount of land devoted to particular crops (Acres)

	Mean	*Min*	*Max.*	*Range*	*Std. Dev.*	*N (%)*
Tomatoes	1.8	0.063	125.0	124.937	12.6	77 (72)
Maize	2.4	0.06	8.5	8.42	1.6	75 (70)
Okra	0.2	0.1	0.5	0.4	0.1	25 (23)
Paddy	1.6	0.25	10.0	9.75	1.4	30 (28)
Sorghum/millet	2.1	0.5	10.0	9.5	1.8	27 (25)
Sweet Potatoes	0.9	0.25	4.0	3.75	0.8	24 (22)
Onions	4.5	0.063	125.0	124.937	22.8	21 (20)
Spinach	0.2	0.06	1.0	0.94	0.2	11 (10)
Cabbage	0.3	0.08	0.5	0.42	0.2	12 (11)
Amaranthus	0.3	0.083	1.25	1.167	0.2	13 (12)
Egg Plant	8.6	0.063	125.0	124.937	32.2	15 (14)
Other Horticultural Crops	0.4	0.06	2.25	2.19	0.5	17 (16)
Groundnuts	1.0	0.25	6.0	5.75	1.1	17 (16)
Cowpeas	1.3	0.25	2.75	2.5	0.8	15 (14)
Other Non-Horticultural crops	0.6	0.0	4.0	4.0	0.8	26 (24)

7 *Farmer Marketing*

7.1 Level of Marketing Activity

Farmers were asked to indicate which were the most important months for them for the sale of their crops. The results of the data suggest that there is no clear dominance of one part of the year and the harvesting and sale of horticultural crops can take place at different times throughout the year. These vary between locations as demonstrated by the summary presented in Table 9.

Table 9 Months Tomato Harvest Reported for 1998/99 Season

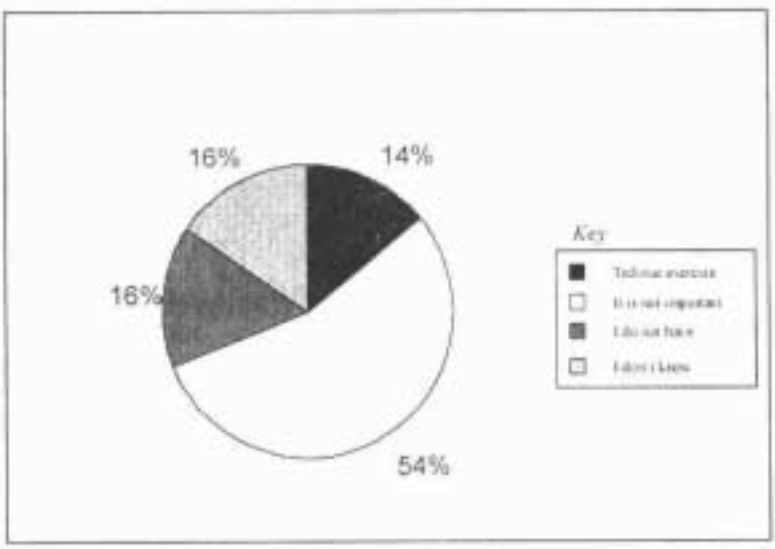
Village	Peak Months	Months Harvest Recorded
Mbabala A	July	December- September
Mvumi Mission	September	May-November
Malui	July/August	February-November
Ulaya Kibaoni	August	July-October
Ngole	August	July-August, October

Farmers were asked to indicate what the best and worst prices received for a range of horticultural crops. The data suggests a wide range of opinion on this and suggests that some farmers are more successful than others in negotiating a good deal, or may indicate that some farmers are good at timing their harvesting to a particular period in the year when the price is high.

7.2 Market Information Handling

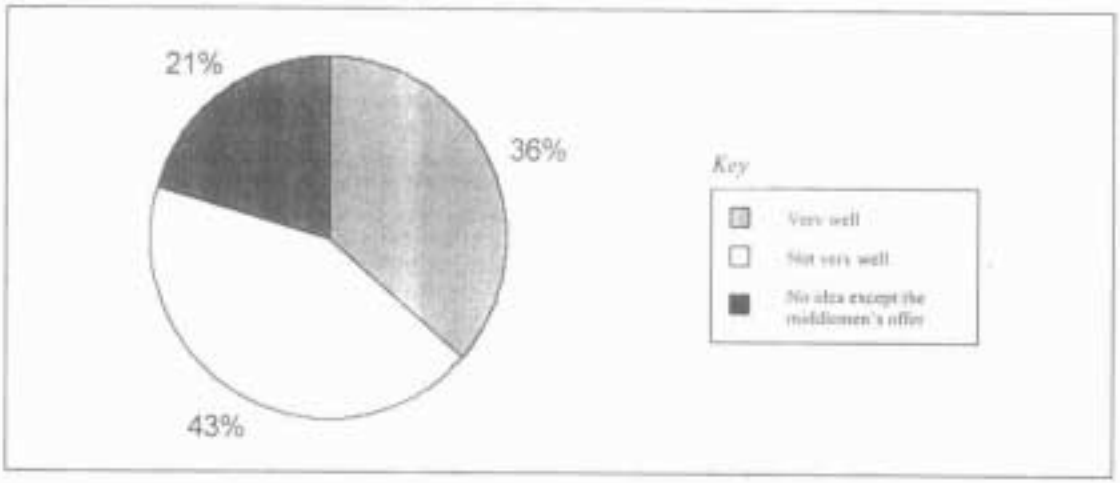
21 per cent of the respondents reported that they kept records. This suggests a relatively low level of business awareness. Figure 2 provides the responses relating to reason why no records were kept. This demonstrates that 54 per cent of the respondents felt it was not an important activity. In an interview, one farmer said that he knew perfectly well how to keep records, but doing this would only tell him how little he had to show for his efforts. He would only normally do this if he was saving to buy something such as a bicycle. As can be seen from the figure below it is not widely seen as an important enough activity. Only 18 per cent reported that they did not know how to do this.

Figure 2 Reasons for not keeping records of farming activities



The survey found that all farmers interviewed sold crops to traders at some time. Questions related to the level of knowledge farmers had about the market as well as their relations with the traders - the representatives of the market. Figure 3 identifies the perceptions farmers have of their knowledge of the market. Only 36 per cent considered that they know the market very well, of these only 5 are women. 43 per cent considered that they do not know the market very well and 21 per cent rely on the information provided by the traders themselves, more than half of whom are accounted for by the female respondents. Not knowing the market well is a considerable disincentive to production. While the survey suggests that the market knowledge of farmers is poor it is very poor among female farmers.

Figure 3 Level of perceived knowledge of market



7.3 Relations between Farmers and Traders

7.3.1 Perception of Market Risk

There is a perceived risk on both sides in the sale of horticultural produce. Both traders and farmers indicated this in interviews. In interviews farmers discussed the question of risk in relation particularly to:

- Dealing with traders
- Whether the market transaction takes place at the farm or in the market
- Particular crops having greater risks involved – in terms of marketing and production
- Risks being too great for them to take crops to urban markets

Farmers identified a number of key risks, in particular, instability of prices and the market is too small. In addition, some 33 farmers (31 per cent) interviewed had a problem in receiving their payment from traders in the previous season. This suggests a one-in-three chance of encountering payment problems, which is a high level of risk. This is perhaps linked to the low level of repeat trading or 'clientisation'. Only some 15 farmers (14 per cent) sold to the same traders last time as the time previously. Indicating a low level of trust between the farmers and the traders. Of these 31 per cent only 3 were women. A crosstabulation, presented in Table 10, shows that chi-squared test of independence between respondents' gender and whether they had problems with traders in the previous year, results in a value of 9.165 and the significance is accurate to 0.002. This suggests the significance in the gender of the farmer and whether they are likely to encounter problems.

However, since the women tend not to operate in the commercial horticulture market this may simply be a reflection of their reduced exposure to such problems because in the main they will be selling to consumers at local or periodic markets. Another consideration in relation to women trading horticultural produce is that in Tanzania they often have a range of demanding household responsibilities which make it very difficult for them to find the time to go to market with produce.

Table 10 Cross-tabulation of Gender with Experiencing Payment Problems in 1998

Observed *Expected*	**Payment problems in 1998**	**No payment problems in 1998**	Total
Male	30 *23.4*	46 *52.6*	76 *76.0*
Female	3 *9.6*	28 *21.4*	31 *31.0*
Total	33 *33.0*	74 *74.0*	107 *107.0*

Chi-square	9.165
Degrees of Freedom	1
Significance	0.002

For example, the farmers indicated that for the majority of them, the key sources of information about prices are neighbours and friends, followed by a visit to the market. However, a visit to the market incurs costs. The overwhelming majority of the farmers in the survey reported that they exchange market information with other farmers. However, this process appears to be neither active nor rigorous. In one case a young farmer explained he learned how to negotiate with traders by hanging around when traders came to buy and listening in on the negotiations. In another case a farmer reported 'hearing' about prices from other farmers, suggesting a more passive process.

7.3.2 Exchange of Information

Interestingly, around half (47 per cent) said that they exchange information with traders. However, the respondents to the survey and the in-depth interviews had difficulty understanding the purpose of this question. It is possible that this relates to the activities of farmers to investigate the prevailing prices for the commodities they want to sell, rather than any suggestion of collaboration between them and traders. This is supported by the reports, in the interviews, that it was very rare for traders to return frequently to the same locations to operate a system of 'clientisation'. This said, the farmers did report that they provided traders with crops on credit under certain circumstances – usually where the trader gave the farmer very little choice. For example this often takes place when the farmer has to sell crops on as his farm has reached a peak harvest period, and the trader, knowing that the farmer needs to sell, argues that he cannot afford to buy so much produce. The farmer will usually have to agree to providing some of the produce on credit on the understanding that the trader will pay him or her the following week once he himself has been paid for selling the crop on.

7.3.3 Repeat Trading

The in-depth interviews yielded very little about repeat trading, or 'clientisation'. However, one case reported in Kilosa District involved a small group of farmers who had tried to sell directly to Dar es Salaam and who had trade three times with the same trader.

On the third occasion then trader did not return with the money and at the time of the interview they were investigating how to pursue the trader to get their money back. However this was considered among the village as an unusual case. Such cases, although unusual are important to how repeat trading is perceived. It suggests that a level of trust has to be built up between trader and farmer, which appears to be extremely precarious. Some form of formalising of agreements between farmers and traders may be one way of overcoming this situation and bringing about a reduction of risk in the market transaction. This will be discussed in a later section.

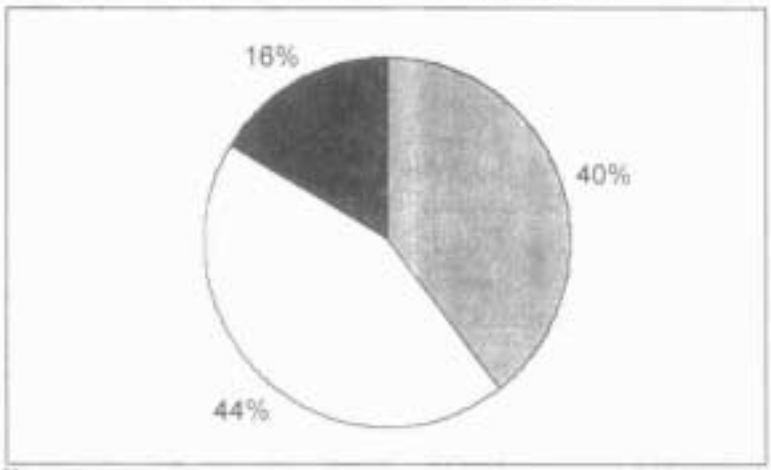
7.3.4 Market Decision-Making

Figure 4 demonstrates that 40 per cent of the respondents make their decisions on market activities based on what happened in the previous season. In Mababala A village one respondent explained that grapes are well known from here, but there is no longer a market. Now tomatoes and onions are very important cash crops. He described tomatoes as a 'kind of a tradition - price is a secondary factor'. Other crops are risky and tomatoes have an assured market. Similarly, a discussion group with women in Mvumi Mission suggested that tomatoes and sweet potatoes are the most important crops in the area because:

(a) they do well in the soil,
(b) tradition,
(c) they are used in the house and for these two in particular, and
(d) they provide a good income.

The market does not figure strongly in this set of explanations. In Kilosa District the farmers reported that the collapse of the cotton market has encouraged a switch from cotton into other produce, mainly vegetables. However, everybody is focusing on a similar set of crops. This suggests a relative strong conservatism on the part of producers. This is however, understandable given their perceived risks in relation to their production as well as their trading activities.

Figure 4 Method of monitoring the market variations



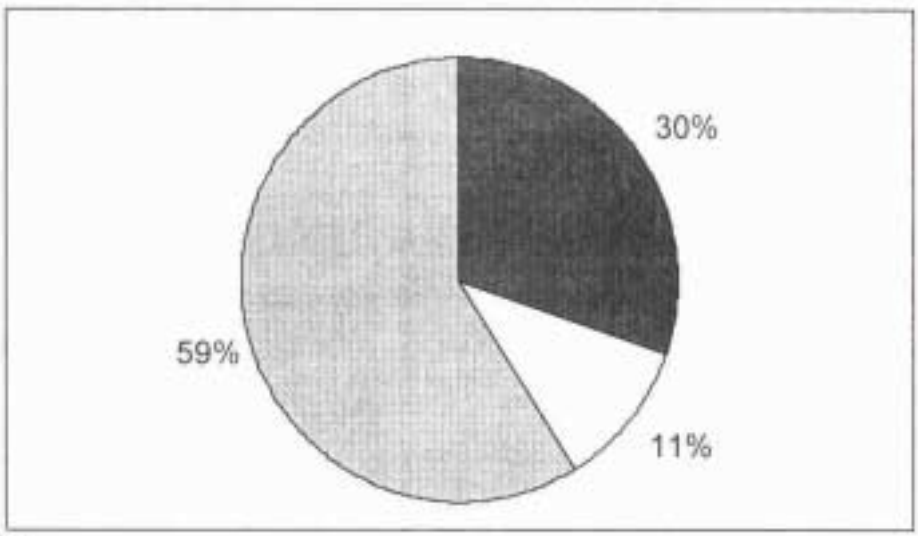
Key
1-Use previous seasons experience
2-Check with traders
3-Use relations or friends residing in market areas.

The suggestion of conservatism among the farmers is partly borne out in that 40 per cent of producers use the previous season's experience. 40 per cent said that they check with traders what is happening in the market, while only 16 per cent use relations or friends living near the market areas to monitor the market variations.

7.3.5 Influence of Market Changes on Production

Figure 5 demonstrates the data collected in order to assess the extent to which farmers manage their market risks through reallocation of farming activities. This data suggests a willingness to consider alternatives to the existing crop choice.

Figure 5 Methods of Harmonising Production Activities with Market Variations



Key
1- Change combination of horticulture products
2- Change to other (non-agricultural products)
3- Others

7.3.6 Marketing Strategies

Around 36 per cent of the respondents negotiated the sale of their produce as a small group. A discussion group in Malui Village reported that there is no producer organisation – so everyone markets their produce individually. They describe a problem in achieving co-operation. They say that relations between the farmers are okay, but that this is not enough for organisation. In response to market risk the farmers explain that during the rainy season the traders have to come to the farmers, while during the dry season the farmers have to go to the market to find buyers. ('At different times fortune falls on different groups') There are risks involved, but they say it is difficult to estimate them. The scale of trading is usually very small and therefore not well established. The result is traders come and go. They compare this with other well-known large-scale vegetable producing areas, such as Mkuyuni, Morogoro, where traders come on certain days and often they are well established and well-known by the farmers. In Mbabala A village, certain commercial crops are seen as less risky, for example many of the farmers produce tomatoes because they are seen as a less risky option to other horticultural produce. In each of the villages they reported that they had the potential to produce more of their crops, given the capital for inputs, but because the markets are unstable it is not worth the risk of the initial investment.

In Mvumi Mission, a group discussion reported that during the period from December to March when supply is low, there is no grading of produce. When the supply is high the quality and varieties become important in the negotiation of the sale of goods. A small number of progressive farmers are known to get involved in market research and try to sell themselves. Most are not so interested in the market - especially if their consumption crops are generally good. They reported that there are very few long term links between farmers and traders ('clientisation'). This suggests that while the primary motivation of the household is to meet its needs there is likely to be limited engagement in the market. There is a suggestion here that the market is used as a source of cash for needs the household cannot supply itself and as a backstop in times when the subsistence crop is low.

In one or two of the interviews and group discussions in different the proposal of a processing plant was mentioned, which would provide an assured market all year round. Small scale processing was also mentioned, but only in a minority of cases. These options will be discussed in the Recommendations section.

64 per cent of those responding negotiated their sales of produce individually in the previous season. The result is that some 31 per cent reported problems in recovering payment for the crops they sold. The interview data establishes a relatively clear pattern in each of the villages visited, though it is stronger in one than the other. This is that during the peak season the traders can wait for farmers to bring the crops to them in the market. There is a tendency for all the farmers to be harvesting at about the same time, so supply is good. In such a buyer's market the farmers have to take on the outlay of taking produce to the market. During the off-season the traders have low levels of supply and have to go to the rural areas in search of supply to keep their business going. Other discussions reported that during the off-season consumers may also go to the villages in search of supply. During this season smaller units of volume tend to be used and, in addition, grading is practised far less. In this situation the farmers have the upper hand. Such variations in the location of the trading activities, makes the development of links between farmers and traders more difficult. To many of the farmers the idea of going to the market is one which involves a considerable amount of time which could be better spent on other more productive activities. There is some evidence of farmers grouping together to send produce to town or to find out from someone who has been to town what the prevailing prices are in the market. However, this kind of activity appears to be far from frequent.

This makes it understandable that only 14 per cent reported trading with the same trader as last year. Even among those that did trade with the same trader, the mean number of years they have sold to the same trader is 1.2, while the maximum is 16 years.

7.3.7 Incidence of Credit

Only two farmers reported receiving credit in the previous season. Though in the interviews the question of credit was raised on a number of occasions in relation to a factor that hindered extending production. Although most farmers said they never gave or received credit from traders, in the in-depth interviews it became clear that some purchasing arrangements involved credit. Several farmers described allowing traders to take produce away from the village to sell in an urban market on a promise to pay the farmer on return. Some farmers reported taking produce to the market and having to leave produce with traders in an urban market without payment on a promise to pay the farm the next time he is in town. In the group discussion in Malui such arrangements were usually linked to the farmers being in a weaker bargaining position relative to the traders.

7.3.8 Market Knowledge among Farmers

More than half of the respondents reported that they felt they had good or very good information about a range of aspects of markets. They appear to feel best informed abut the varieties of products available than they do about the information they have about traders, places to sell and the likely prices. Figure 6 provides details of the sources of market information used by the respondents and the farmers perception of the quality of each. This suggests that farmers feel relatively better informed about the varieties of crops and places to sell them than they are about the traders and the prices they are likely to receive. However, the differences are small.

Figure 6 Perceived Quality of Market Knowledge Among Producers

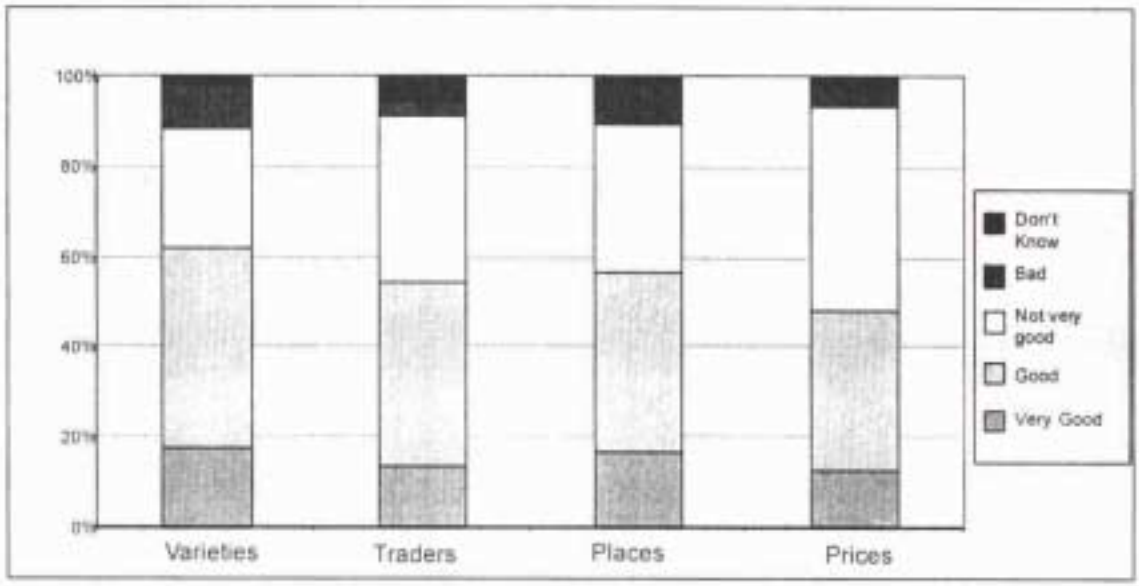


Figure 7 Sources of Categories of Market Knowledge Among Producers

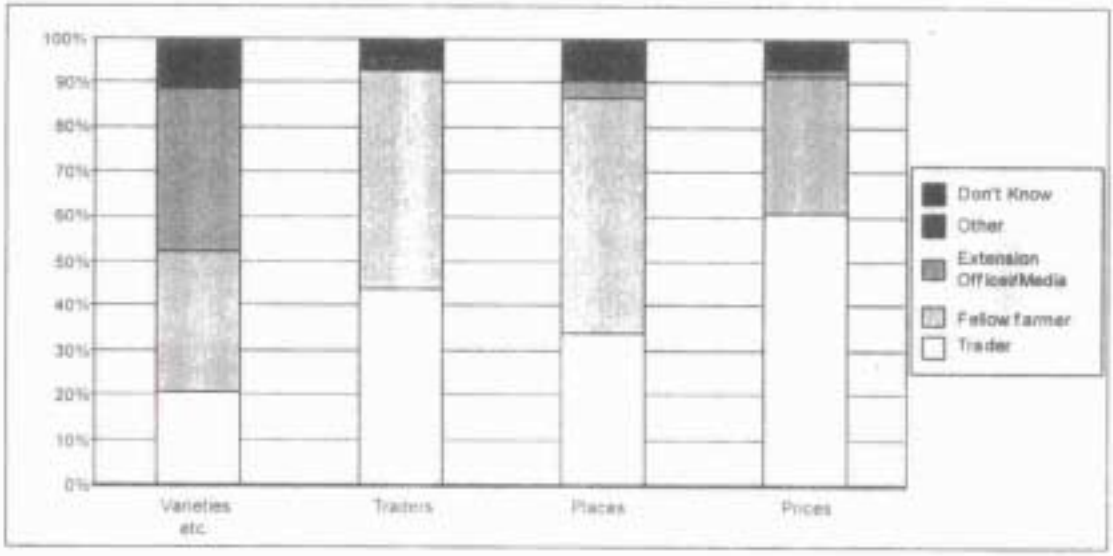
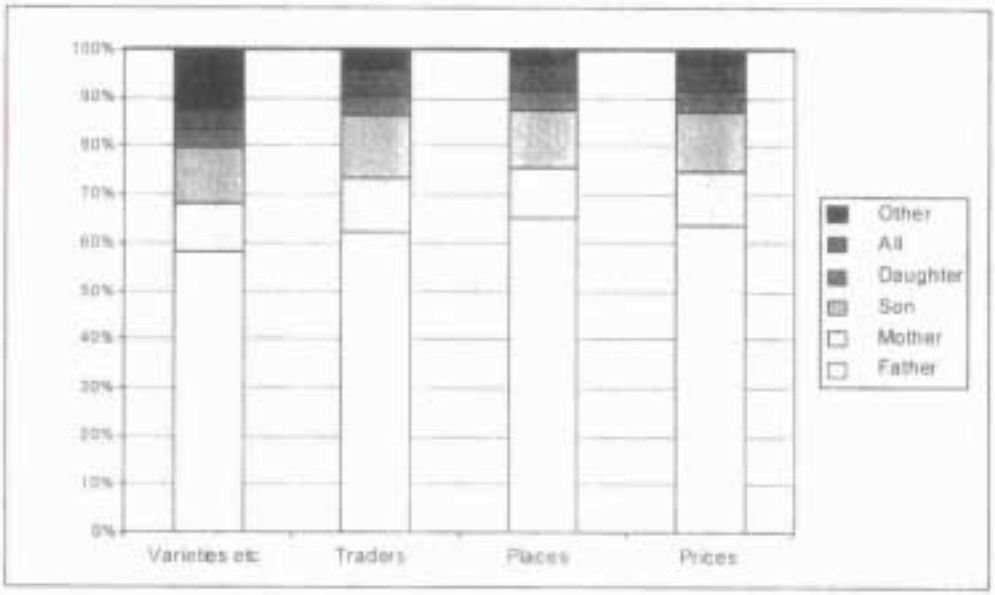


Figure 8 demonstrates the dominance of the male head of household ('Father') in the more commercial activities of seeking market knowledge and dealing with selling the produce for income. The curious result shown in this Figure, however, is the importance the respondents have given to 'Fellow Farmer', since this appears at odds with the more in-depth interviews.

Figure 8 The Household Member Responsible for Seeking Categories of Market Information



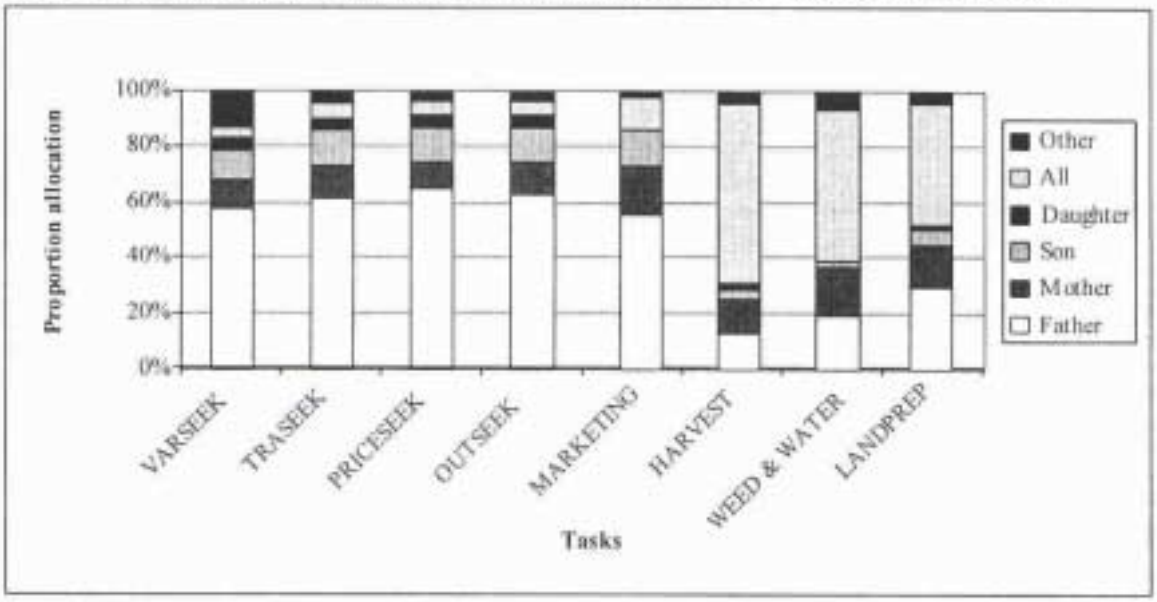
These suggested that collaboration between farmers in the survey villages was minimal. However, since the survey question was specifically relating to the question of their sources of information it appears that farmers use the information provided by other farmers, without seeking their collaboration in the marketing of produce. Another feature of this Figure relates to the importance of the extension officer for the technical information relating to the introduction of new varieties, but their role is very limited in relation to providing information about marketing.

7.3.9 Gender and Marketing Activities

The issue of gender was made clear during the group discussions, some of which were carried out with women farmers in the field. The situation with regard to tenureship is complex and subject to considerable overlapping interests and interpretations. During the data collection exercise the researchers got the impression that the included the land over which they had a claim as part of the whole household's land, separating their own land. The women on the other hand reported larger holdings and appeared to have more autonomy in their production decisions than expected. The group discussions suggested in fact that the women could decide what to plant on their own land, but that the men generally tried to take responsibility for marketing it. There was considerable evidence of the women selling produce and either not disclosing the details or only partially disclosing the details to their 'husband'. Under such conditions, the consequences are that either men or women farmers attempts to obtain accurate and reliable market information are at least hampered if not impossible.

The women report that their ability to deal with traders is restricted by traders not taking them seriously in the market place. They also reported that the men would not usually have to disclose to them what they had sold and what price they had received. By contrast the women usually had to give up their income from crop sales to a male head of household. This encouraged them to sell on occasion, without telling their husbands.

Figure 9 Division of a range of farming responsibilities among members of the household



Key

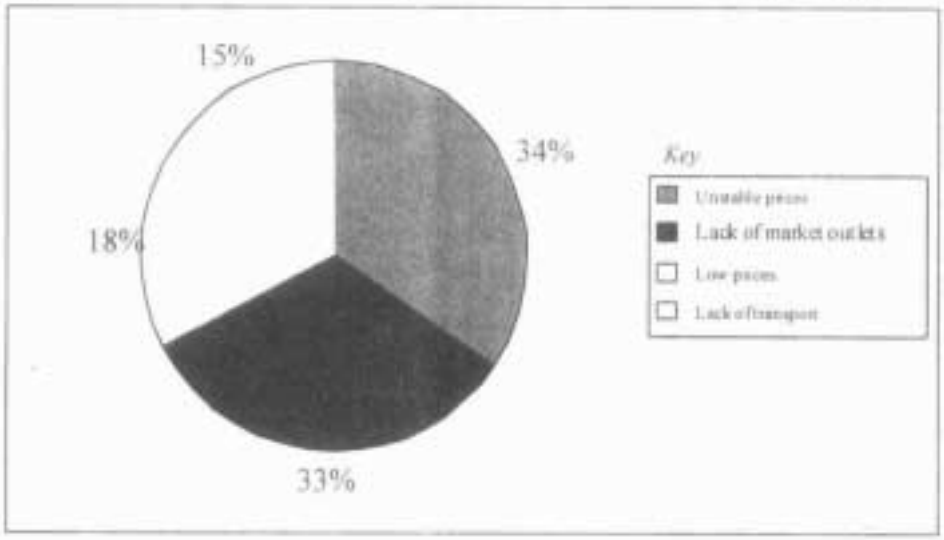
Category	Definition
VARSEEK	Who seeks the knowledge of varieties, fertiliser etc?
TRASEEK	Who seeks the knowledge of availability of traders?
PRICESEEK	Who seeks the knowledge of prices?
OUTSEEK	Who seeks the knowledge of regular traders based outside the village?
MARKETING	Who is responsible for marketing?
HARVESTING	Who is responsible for harvesting?
WEED & WATER	Who is responsible for weeding & watering?
LANDPREP	Who is responsible for land preparation?

The data presented in Figure 9 shows a clear dominance by the male head of household (or 'Husband') for the activities relating to how the household relates to the traders and the market. This ties in with the evidence collected in the interviews that the men were mainly responsible for market-oriented activities. However, the interview data also suggests that where women have control over their own plots of land they will sell the produce themselves. However, this can be made relatively difficult for them unless the trader comes to the farm. This is partly because of their other household roles and partly because of the response they receive from the traders and others in the market place, as discussed earlier.

7.3.10 Perception of Risk

The respondents overall perception of risk is summarised in the pie chart in Figure 10. This shows what the farmers consider their main risks in being involved in market trading of their produce. Three of the categories unstable prices, lack of market outlets and low prices relate to issues that could potentially be overcome if useful information about alternatives were available.

Figure 10 Farmers' Perceived Important Market Risk Factors in Marketing



8 *The Case Study of a Successful Production Group*

8.1 Origins of group

Hosea Muhuma lived in the nearby village, Mantumbulu, but he needed some land. In 1992 he came to the area below the dam and found that nobody owned it. It was stony and covered in bushes and suffered from gully erosion, so he cleared it. While working on this plot, he realise that there was an outlet from the dam nearer the wall and moved his activities to surround the outlet. He filled in the gullies with stones from the soil and carried soil from around the area to the plot to improve it.

Peter Wilson had moved into the area from Iringa, and was staying with a local man. He came to Hosea to ask for some land. Hosea had seen that he was a hard worker and honest, so he suggested that they join together. So they continued to clear and prepare the land investing TShs50,000 of Hosea's money in 5 wheelbarrows, connecting a pipe to the outlet from the dam and constructing a water tank. others said they were mad to throw their money into unproductive land, but understood what they were trying to do and asked to join them. So they took it upon themselves to allocate plots around their own and allowed them access to their water tank for bucket irrigation, but their own plots were irrigated.

8.2 Constitution

They formed a group to which members contribute TShs7,000 each per year. This is used to maintain the water system and to purchase fertilisers that the group decide they require. On a constitutional basis they said there is a constitution, but it is not written down. Hosea is the Chairman and Peter is the secretary, Daniel Moti is the Treasurer. Each of these are founding members of the Group. There are a number of offences which would result in this committee expelling a member:

- if a member steals
- if a member abuses the water
- if a member refuses to take his turn in guarding the land
- if a member refuses to assist in an emergency, eg if there is a burst water pipe

The Group has an account with the Co-operative and Rural Development Bank, but the Treasurer was not available and they could not remember the balance. There are now 24 members of the group. The group is relatively young with the founding members - all in their thirties - being the oldest, but the majority in their early to mid twenties. Details of a selection of the farmers associated are presented in Table 11.

8.3 Water Supply

The dam is owned by the central government, however, the dam attendant was retrenched last year, and local farmers downstream from the Group managed to get the main outlet opened 7 times instead of the normal three in the last year. So the water level is lower than normal at this time of year.

8.4 Marketing strategies

The farmers do not feel confident taking all their produce to the market. The standard of marketing pattern varies according to levels of supply in the Dodoma market and other markets. When the supply is scarce there will be very few or no traders arriving at

Mantumbulu seeking produce. The farmers therefore have to go to the Dodoma market with a sample of their produce and try to persuade them to come and buy from them.

Table 11 Farming Activities and Background of a Selection of ASG Members

Name	*Onesmo*	*Philemon*	*Petro*	*Lucas* *	*Vincent*
Age	36	36	18	20	18
Place of birth	Mantumbulu	Mantumbulu	Mapunguluzi (8km)	Mantumbulu	Mantumbulu
Tribe	Mgogo	Mgogo	Mgogo	Mgogo	Mgogo
Household	1 wife, 5 children	1 wife, 5 children	single, parents & 3 siblings	1 wife, 1 child	single, parents & 7 siblings
Length of ASG membership	4 - on of the founding members	3 years	6 months	4 years	3 years
ASG land	1/2 acre	1/2 acre	doesn't know	12 x 30 strides	1/8 acre
ASG crops	tomatoes, pumpkins & okra	tomatoes	tomatoes	tomatoes	tomatoes
Other land	5 acres (2 of which belong to his wife)	4 acres (maize), 2 acres (groundnuts), 1/2 acre (cowpeas)	parents' land - doesn't know the size	2 acres (sorghum), 1 acres (groundnuts), 1/2 acre (cowpeas)	1 acre (maize) + his parents have land - doesn't know the size.
Other crops	Groundnuts, maize, cowpeas, millet.	Maize, groundnuts, cowpeas	Doesn't know	Sorghum, groundnuts	Maize, millet, groundnuts,
NFA	Just purchased 2 oxen & oxplough. Will hire out	No other income	No other income	No other income	No other income
1998 income from horticulture	300,000/=				
Other Income	200,000-300,000/=	150,000/=		50,000/=	27,000/=

*Lucas is not an ASG member. He is a farmer who has come to this area because he has seen the ASG doing well. He has attempted to copy their approaches and is able to use their tanks to fill his buckets for bucket irrigation

They rarely trade with the same traders. However, the uncertainty relates to the fact that they are arriving in a market that the traders know very well and they do not know the prevailing prices. In addition farmers reported that they may agree a price at the market but on arrival the trader will try to bargain the price down again. The farmer's crop is ripe so he is in a weak position. If he does not accept the price the trader will go somewhere else and also try to force them to pay for his fuel. There from traders, though supplying traders on credit was reported. However, this is usually when the farmers' crops have ripened and the trader claims lack of capital, offering a price and promise to pay after selling. However, when the farmer goes to collect, the trader will usually try to bargain him down again.

It was reported as very rare that the farmers would collaborate on selling. The reasons given were that farmers plant at different times, so they harvest at different times and

therefore cannot sell their crops at the same time. In addition they say they can co-operate on buying, but there is difficulty in predicting the market for selling. [In one interview the Chairman and Secretary wandered over to watch the interview and whenever the question of co-operation came up he shot a look at them. This question could be explored further]

They are very unclear on what alternative strategies they could adopt in relation to the marketing of their crops. They say that farmers do not predict, they do not know what the market demand is, how many buyers there are, so they are always taking a chance in producing commercial agriculture.

8.5 Benefits of Commercialisation

All the farmers have been able to buy bicycles and put tin roofs on their houses with the proceeds of the horticultural production. One farmer has just bought 2 oxen and an ox-plough and intends to earn money hiring these out to other farmers. A number of the younger farmers associated with the group reported that they had migrated to Dodoma or even Dar es Salaam and found that there were few opportunities there for them. They spoke very positively about the Group and the fact that members had clearly benefited materially from agriculture. The younger members, particular appeared to feel they could learn from the more established members of the group. One farmer who had only just sold his first season's harvest reported assisting other members in land clearance, irrigation, weeding etc., for a number of months before being allocated land and access to the irrigation water. He said he had been able to sit close by when traders had come to negotiate the purchase of produce and felt he had learned how to do this for himself.

8.6 Production Constraints

Problems include:

- pests
- marketing problems
- several farmers reported being restricted by their time being committed to other activities such as household responsibilities and their other plots.
- high costs of inputs, for example seeds of highly desired varieties are very expensive, as are insecticides and pesticides

8.7 Transport & Communication

There is no telephone or radio connection in the area. It takes one hour each way to cycle to Dodoma and 1.5-2 hours if carrying a load. This has meant that the farmers have to rely on individuals visiting the market or the traders arriving at the site. There are no formal structures for reporting on market changes, each individual is responsible for their own marketing, though there are advantages if the group's site receives a visit from a trader.

9 Discussion Issues

9.1 Producer Groups

Low levels of producer organisation and therefore the cost of obtaining market information are usually borne by the individual in both time and money, and can be relatively high. The example of the Atomic Speed Garden group shows how important innovative and successful farmers have been to the development of a successful horticulture production project. However, it also raises a number of questions. Some might expect this group to be very co-operative and egalitarian, however, the in-depth interviews with the leaders and members of the group as well as other farmers on the fringes of this group, suggest otherwise. Two leading figures appear to dominate the activities and effectively manage the group. While on the outside this may appear unfair, it may well be part of the success, since these two have clearly attracted several young and keen farmers to their group and similarly to establish plots close to the group.

Given the problems cited by farmers in the survey villages, any strategy of intervention in Tanzania may be better focused on innovative trading - be it traders, farmer-traders or farmers. For example in the literature Winarto (1994) cites farmers who gain status for their agricultural knowledge. In her discussion she suggests that information passes down channels structured by prevailing social or cultural relations. This may explain why ASG farmers are the same age or younger than the founder members - their knowledge would perhaps not be as acceptable to older farmers in the area:

> *"...understanding new knowledge spreads must be situated within a comprehension of the social dynamics and networks of different kinds of farmers." (Winarto, 1994: 154)*

9.2 Market Risk

Most markets operate in a situation of risk, which seems to be related to the low levels of trust and repeat trading. However, in order to improve circumstances for the key stakeholders and make the risks more manageable, it is important that the risks are assessed and quantified. Once assessed there may be scope for minimising risks. Clearly it suits no-one involved if the prices are unstable or the market is too small, two of the key market risks identified by the farmers responding in the survey.

Other key problems of the horticultural markets in Tanzania have been identified as:

- Lack of data on market changes and the understanding of the market variations is poor. Information that is available is considered by most stakeholders not to be relevant and to be out of date very quickly. In addition, information collected on fruit and vegetables is very difficult to analyse as it is often expressed in local units which vary according to commodity, region, season and stage in the marketing channel.
- The problem of transportation, in terms of costs, length of journey time to markets and risk of losing the load in an accident.
- Communications in Tanzania can still be very difficult from one city to another, making the integration of markets through the provision of information about alternative markets, relatively difficult.
- The burden of taxation is perceived to be very heavy, with market levies charged in rural markets, at District or Regional boundaries and at urban wholesale and retail markets.

10 Recommendations

Recommendations put forward by the Workshop participants included:

- The improvement of the rural feeder-roads network.
- The establishment of a food processing industry to provide an assured market throughout the year. In addition, small-scale processing, such as drying, is being piloted by both individuals and a number of NGOs.
- A network of telephones connecting the strategic wholesale markets throughout Tanzania.
- There is a need for farmers to get organised into groups to offset the costs of market information collection and the risks involved in experimenting in the market.
- The very low level of trust between farmers and traders appears to be a major constraint on the development of the horticultural market. Some procedure of formalising the purchase could be introduced to overcome this problem. For example the introduction of contract forms, which could either be kept for records or be discarded after the agreement has been honoured.
- The standardising of measurements of volume would simplify the negotiations of sale and the ability of stakeholders and institutions to meaningfully collect and manage marketing information
- The introduction of small-scale processing and cold stores to offset the extremes of supply and shortage.

In addition, the following suggestions could be usefully pursued:

- There is a need for a system of market information collection required. Meetings at the Ministry of Agriculture suggested that the government will invest money in a Marketing Information System, after the collapse of the vegetable data collection activities of the Marketing Development Bureau. However, it may be possible for a radio station to supply more timely information on the marketing information which may include the prices, but should include the supply and perhaps the trends of fresh produce in various parts of Tanzania, opportunities of alternative market outlets. It may be possible to offset the cost of this through a sponsorship deal with agricultural suppliers. However, there was clear evidence from this and previous studies that many farmers considered that previous broadcasts of market price information were ignored by farmers as not being relevant. Any alternative would have to be monitored for its impact/take-up factor to ensure that it was effectively reaching farmers and traders and that they were making active use of the service. All the lessons of the previous approaches to marketing information systems must be learned and the focus must be maintained on the aim of achieving maximum effectiveness of the system to the stakeholders - primarily farmers and traders - rather than to the policy-makers.
- There is a need for further research on the gender relations in rural Tanzania with reference particularly to production and marketing decision-making. The evidence presented in this study suggests that the male and female farmers within households are operating under an atmosphere of suspicion. This results in disruption of the communication of marketing information among the producers - even within households, reducing the effectiveness of the farmers' marketing activities.
- There is a need for farmer's group to try to organise themselves to overcome the weakness of their situation vis-à-vis the traders and other groups in society.

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Appendix 1

FARMER-TRADERS CONSTRAINTS AND INCENTIVES STUDY IN TANZANIA

Section 1: Personal Profile

Respondent name Respondent number Date

Relationship of respondent with household head Age

1. Village Ward District

2. Years of attendance in education Male Female

3. How many people live in the household?

Section 2: Cost and Production

4. List the crops you grow in order of priority in the table below.

Crops	Land (acres)	1998 produce	1999 expected produce	Motivation	Last Sale Price

5. What are the key risks involved in producing these crops? (In order of priority)
   a)
   b)
   c)

6. What restricts you from growing more?

Restriction	Crucial	Very important	Important	Quite important	Less important

Section 3: Transport

7. Last time you went to the market how were the goods transported?

Transport	*Cost (indicate if flat rate or what unit)*
Lorry	
Bus	
Pickup	
Car	
Bicycle	
Walking	
Other	

Comments:

8. How much did the fees cost the last time you went to the market?

District Border Fees	Total TShs.	TShs. per unit (specify units)
Commission		
Licence		
Container		
Other (specify		

9. What percentage of goods were damaged last time you went to the market?

Section 4: Labour

10. What were the costs involved in harvesting for the last year?

11. Did you employ non-family labour during the last year? Yes No

12. What was the rate of pay for the non-family labour during the last year?

13. For how many days was non-family labour employed in 1998?

Section 5: Farming and Trading

14. Why do you farm and trade?

15. a) Did you trade in 1998? Yes / No
b) How much did you make in the whole year?

16. In 1998 did you have a problem with the market wholesaler when you went there?
Yes No

17. Tell me about it (if yes to 16).

18. What are your tasks in farming?

19. What are your tasks in trading?

20. When did you last take produce to the market?

21. What time did you leave for the market?

22. What time did you return from the market?

23. What market did you go to?

24. How did you get there?

Method Cost:

25. Did you buy anything from other farmers to trade? Yes No
    What did you buy?
    How much was it?
    How much did you sell it for?

26. When are you planning to go to the market again?

27. When was your last full farm working day?

28. How many hours did you spend working in the field that day?

Section 6: Deprivation

29. Which of these factors do you possess?

(Ranked data from group interviews)	Yes	No	Amount

30. What alternative sources of income did you have during 1998? (in order of importance)
    1.
    2.
    3.
    4.

Appendix 2

GROUP INTERVIEWS: FARMING, TRADING AND DEPRIVATION

Number of participants within the group:

Village: Ward: District:

Nature of the group:

Section 1: Farming and Trading

1. What are the key problems in farming?

Rank
1
2
3
4
5

Comments on discussion:

2. What are the key problems in trading?

Rank
1
2
3
4
5

Comments on discussion:

3. What are the advantages in farmer trading?

Rank
1
2
3
4
5

Comments on discussion:

Section 2: Deprivation

What are the minimum requirements you consider to be necessary to live?

Rank	Factor

Comments on discussion