



World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

Tororo District Report

Conducted and prepared for ICRAF BY

Fred Musisi Kabuye¹, Dr Fiona Waata¹, and Disan Kiguli²
March 2003

¹Africa 2000 Network-Uganda (A2N-U)

²Development Consult and Advisory Associates (DCAA)

Voices of Poor Livestock Keepers in the Lake Victoria
Basin

VPLK Document 17



Africa 2000 Network - Uganda



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1.0 Background

1.1 Overview of the Voices of the Poor Livestock Keepers in the Lake Victoria Basin Study

This study was sponsored by the U.K. Department for International Development as part of the Livestock Information Research Exchange in East Africa. The study was led by ICRAF and it focused on information and technology needs and sources for poor livestock keepers in the lake Victoria Basin.

The Uganda study was conducted in three Districts, Tororo being one of these where Africa 2000 Network has worked for over 6 years and promoted livestock husbandry as a means to address poverty eradication. Mr. Fredrick Musisi Kabuye the Uganda Team Leader with a team of 6 others from Africa 2000 Network, Integrated Rural development Initiatives, Makerere University Business School and Development Consult and Advisory Associates carried out the study on behalf of Africa 2000 Network - Uganda.

1.2 Project objectives

- Identify where significant numbers of poor livestock keepers are located in the Lake Victoria Basin.
- Describe how those poor livestock keepers access new knowledge and technologies, with emphasis on livestock.
- Identify what the levels of demand for new livestock related knowledge and technologies are and to what extent these info needs are being met.
- Document which civil society organizations operate in the lake Victoria basin and to what extent they actually and potentially cater for the interest of poor livestock keepers.
- Suggest what ways civil society organizations can be empowered to enable poor people better access to new information and technologies.

13 Methodology

13.1 Study area

The survey covered Kirewa sub-county of Tororo district with the distribution of respondents by parish and village as shown in the table below.

Parish	ViUage	Number of Respondents
Kirewa	Kirewa	2
	Nami	13
Soni	Jiep	13

13.2 Research design

- The study had two components, a qualitative part based on focus group discussion in selected parishes and a quantitative one based on an administered questionnaire at household level.

1.3.3 Population and sampling

- Stratified sampling was employed at the district level to arrive at the sub-county and parishes to participate in the study based on the animal population. At the village level, a list of village members was obtained from the L.C chairperson and the respondents were randomly selected.

1.3.4 Instrument development

- A guided interview schedule was designed for the focus group discussion.
- A questionnaire was developed based on the specified objectives for the identified respondents. This was pre-tested to test its suitability and afterwards appropriate changes were made accordingly.

1.3.5 Data entry and analysis

- This involved questionnaire editing, coding, summarizing details, tabulation and statistical analysis. Open-ended questions were also coded. Data was captured using Epidemiological Information (EPINFO) software program with the help of variable data checks. Data entry screen and data check programs were designed and pre-tested in advance to ensure that minimal errors were made during the entry process. After data entry, data cleaning to remove stray errors that might have occurred during the entry was done.
- Data was analysed using Statistical package for social scientists (SPSS) version 10. Frequencies, measure of central tendency and cross tabulations were used for various variable.

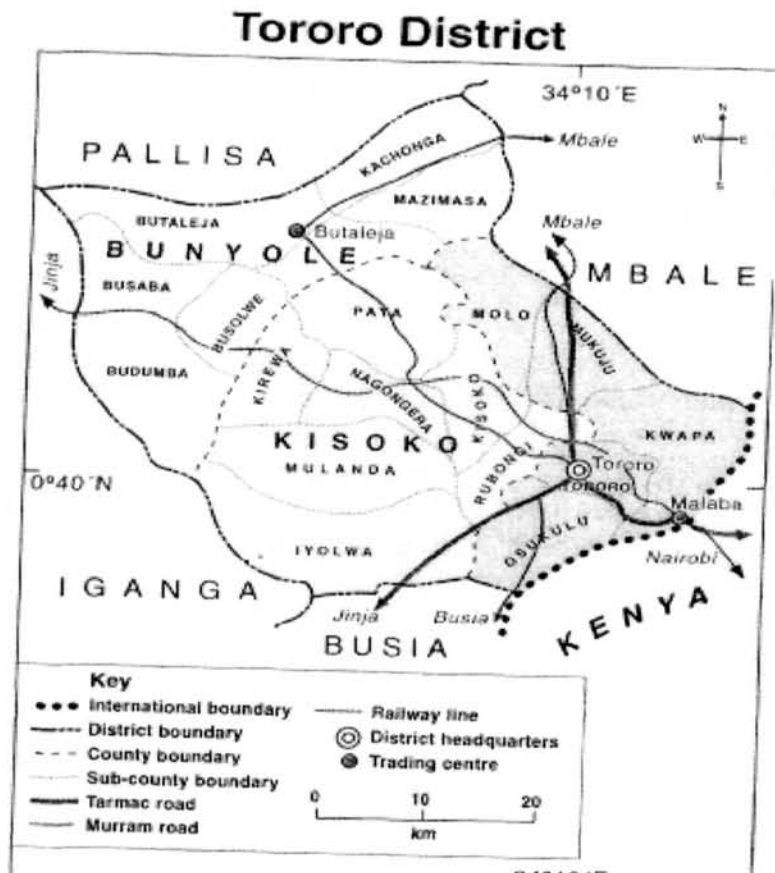
2.0 Tororo District Profile

2.1 Introduction

Formerly known as Bukedi, Tororo is one of the districts that already existed at independence. It then consisted of the present day Pallisa and Busia Districts. In 1980, Bukedi became Tororo district. The magnificent obtrusive Tororo rock that overlooks the town is a tourist attraction with potential for mountaineering

2.2 Location and size

Tororo borders the districts of Pallisa in the North, Mbale in the Northeast, Iganga in the West, Lake Victoria in the extreme south and the republic of Kenya in the East. Tororo district covers an area of 2,634sq km with 64,768 hectares under forest.



2.3 Relief and climate

It has an approximate attitude of 1,097m and 1,219m above sea level with moderate rainfall and high temperatures. Tororo district is dry with sandy rock soil. Its climate is favourable to crops like millet and cassava, which are widely grown in the District.

2.4 Population

Tororo district has a population of 555,574 people. The sex distribution of this population is 282,657 females and 273,220 for males. The urban population is 491,917 and the population per sq km is 211

2.5 Urbanization level

The two major towns in the District are Tororo town, which is the administrative headquarter of the District and Malaba. Tororo district has four counties; Bunyole,

Kisoko, Samia-Bugwe and Tororo municipality with a total of 55 sub counties. The main languages are Japadhola, Lusamia-lugwe, Ateso, Lugwere, and Lunyoli

2.6 Economic activities

Agriculture is the major economic activity in the district. The major food crops are; finger millet, rice, maize, cassava, groundnuts, sweet potatoes, sorghum, beans, cowpeas, simsim, bananas and sunflower, while onions are the most grown vegetables. The animal population at the time of the study stood at Cattle 325,34, Goats 270,068, and Sheep 57,489. Trade is the second economic activity in the district since the District is at the border this enhances trade between Uganda and Kenya. As an agricultural district, industries in this district are mostly agro- based such industries include fertilizers and fungicides, laundry soap, jaggery, gunny bags, Hessian cloth, oil milling and cotton ginning. Other industries are corrugated roofing sheets and cement industry. Land ownership in the district is basically customary.

2.7 Social services

The district has 341 primary schools, 31 secondary schools, 6 technical institution and 4 teacher-training colleges. The district has 2 hospitals; Tororo hospital with 226 beds, St. Anthony's hospital and 7 health centres.

It is worth noting that district has 228 registered primary societies with South Bukendi Co-operative union at the district level.

3.0 Results and discussion

3.1 Background of the Respondents

3.1.1 Sex of the household head

Of the twenty-eight households visited, 25 (89.3%) were male headed while the rest (10.7%) were female-headed households. The smallest size household had 2 members, while the largest had 15 members with an average number of 8 members per household.

3.1.2 Age distribution of the household heads

The eldest household head was 75 years, while the youngest was 32 years old. The biggest percentage (44.4%) of the household heads was in the age bracket of 30 and 40 years, followed by those aged between 41 and 50 (22.2%). Also 14.8% of the household heads were aged between 70 and 75 years and the rest (18.6%) were aged 51 and 69 years.

3.1.3 Educational level of household members

Majority household heads had attended primary (48.1%), while (22.2%) had attended post-secondary education and 11.1% of the household heads had attended secondary. A relatively big proportion (18.5%) had not attained education at all.

Also 44.4% of the spouses had not attained any education, 40.7% had attended primary education and the rest (14.8%) had attended secondary.

About 60% of the sons and 57.7% of the daughters of the households approached had attended primary, while 27.3% of the sons and 30.8% of the daughters had not gone to school at all.

3.1.4 Occupation of the household heads

The main occupation of the household heads is fanning (74.1%), self employed (14.8%), employees of the household (4.7%) and the rest (3.7%) are formally employed. Almost all the spouses (93%) engaged in farming and the rest (7.4%) are self-employed.

3.1.5 Settlement and production on the farm

About 28.8% of the total households settled on their farms between 1990-2002 and about the same percentage (28.8%) settled on their farms between 1977 and 1989. See the table below.

Year of farm settlement	Percentage distribution
1990 - 2002	28.8
1977 - 1989	28.8
1964 - 1976	10.8
1951 - 1963	21.6
<1950	10

3.2 Crop production

3.2.1 Cash crop production

Cotton emerged as the highly grown cash crop with 34.16%, followed by coffee (19.5%), ground nuts (12.2%), Rice (9.8%) and Cassava (9.8%) respectively. The least grown cash crops were; *Matooke* bananas, beans, sorghum and maize (all with 2.4% of the response). The largest and the smallest acreage for cash crops were 2 acres and 0.25 acre respectively with average size of acreage for cash crops being 0.9.

The majority respondents (70.%) reported that they planted their cash crops as pure stand, while 26.8% used mixed cropping system and the rest (2.4%) used second crop system.

About 31.2% of the respondents reported as harvesting over 20 bags/sacks of crops listed above. Also 16.4% said they harvest between 10 and 20 bags/ sacks and the rest harvested less than 10 bags/sacks.

3.2.2 Food Production

The mostly grown food crops during the last season were millet (20.8%), Cassava (20.8%), sorghum (15.2%), ground nuts (14.4%) respectively. The least grown food crops included beans (4.8%) and *Matooke* bananas (0.8%) respectively. The largest and

smallest acreage for food crops was 4 acres and 0.25 acre respectively with an average acreage of 1 acre per food crop. Pure stand cropping system (61.6%) was mostly practiced for food crop production; followed by mixed cropping system (36%) the rest (2.4%) used second crop. About 6.4% of the respondents harvested more than 20 bags/sacks of crops listed above, while about 8% of the respondents harvested between 10 and 20 bags and the rest (75%) got less than 10 bags during the last harvest.

3.3 Land resources

3.3.1 Plot characteristics and attributes

3.3.1.1 Soil type

The majority (41.1%) of the respondents interviewed indicated that their plots had sandy loam soil, followed by plots with sandy soil (21.9%), loam (19.2%), clay loam (12.3%), clay soil (5.5%) respectively. See table below.

Soil type	Valid Percent
Sandy	21.9
Sandy loam	41.1
Loam	19.2
Clay loam	12.3
Clay soil	5.5

3.3.1.2 Plot quality ranking in relation to other plots around

Majority respondents (47.9%) ranked their plots as being average in quality relative to other plots in similar locations on the landscape. About 28.8% of respondent ranked their plots as being better than average around their area while 2.7% indicated that their plots were the best around the area. See table below.

Plot quality rank	Valid Percent
Best	2.7
Better than average	28.8
Average	47.9
Less than average	19.2
Worst	1.4

3.3.1.3 Soil fertility

Most respondents (42.5%) reported that their soils were of good fertility, followed by average fertility (31.5%), poor fertility (21.8%). Only 2.7% of the respondents indicated that their soils were of very good fertility, while 1.4% reported that their soils were of very poor fertility. See table below.

Soil fertility	Percentage response
Very good	2.7
Good	42.5
Average	31.5
Poor	21.9
Very poor	1.4

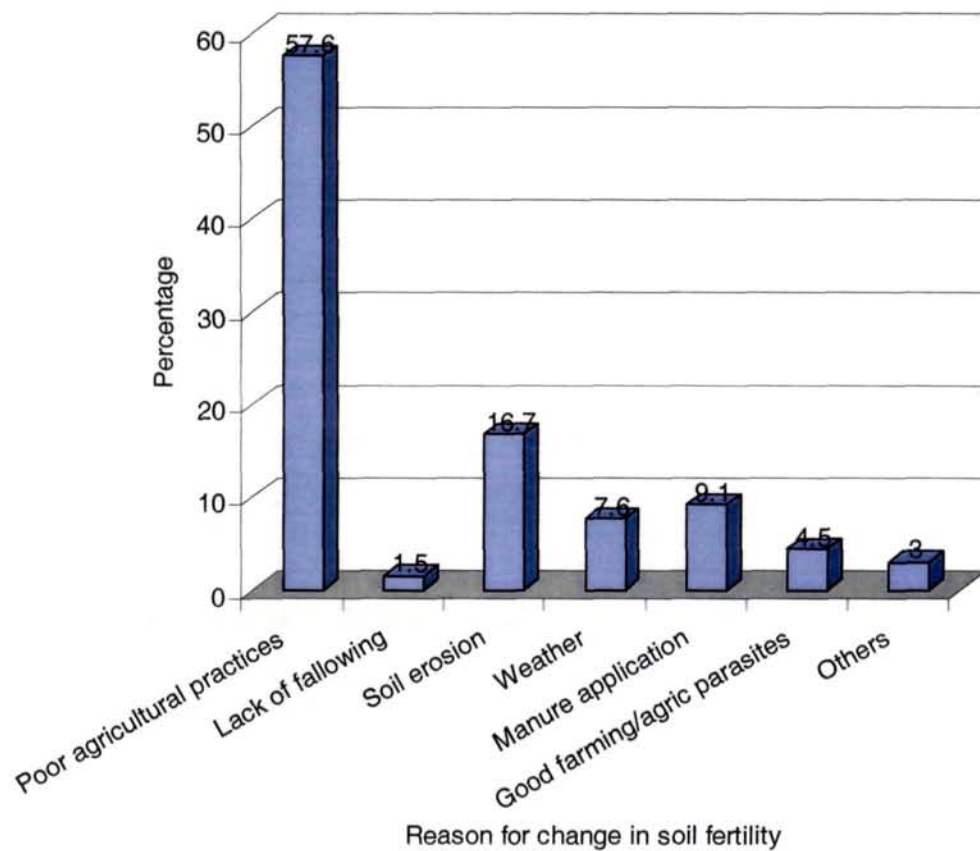
33.1.4 Change in soil fertility over the last 10 years or since acquiring the plot

Majority of the respondents (65.3%) also indicated that soil fertility had gotten worse over the last 10 years, followed by those who reported that their plots had gotten better (8.1%) and 13.9% reported no change on the fertility levels of their land. See table below.

Changes in soli fertility	Percentage response
Gotten better	18.1
Mo change	13.9
Gotten worst	65.3
Gotten much worst	2.8

3.3.1.5 Major reason for observed change in soil fertility

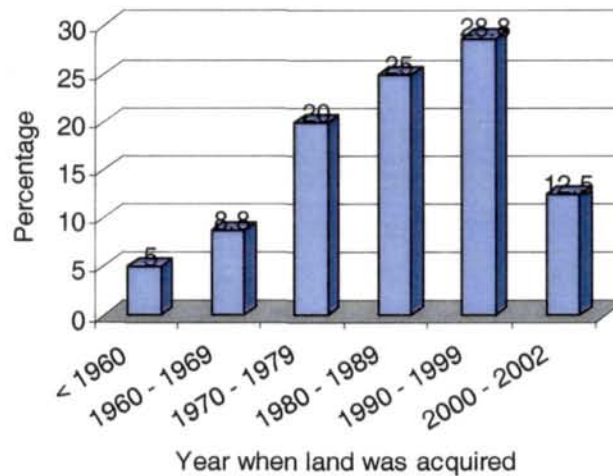
The major reasons for the observed change in soil fertility over the last three years reported by the respondents were poor agricultural practices (57.6%) and soil erosion (16.7%). The least major reason reported was lack of fallowing (1.5%). See graph below



3.3.2 Access to land (land tenure)

3.3.2.1 Year when land was acquired

About 28.8% of the households reported as having acquired land between 1990 and 1999 followed by those who acquired land between 1980 and 1989 (25%), 1970 - 1979 (20%), 2000 - 2002 (12.5%) and 1960 - 1969 (8.8%), while the least number of households (5%) acquired land earlier than 1960. See figure below.



3.3.2.2 Land acquisition

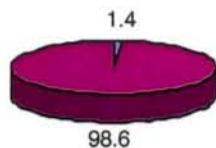
Most respondents (44.4%) reported to have acquired their plots of land from relatives, while the rest (41.7%) had purchased the land. See table below

How plot was acquired	Percentage response
Purchased	41.7
Rented	11.1
Given by relatives	44.4
Squatted	2.8

3.3.2.3 Possession of land title deed

Majority of the respondents (98.6%) had no land title deed, while 1.4% had title deed for their plots. Among those who had no land title deed, 43.7% of them had acquired the land from the relatives and 42.3% of those who had acquired the land through purchasing, had no land title deed. See pie chart below.

Pie chart showing percentage of respondents who had land title deed



3.3.2.4 Land use before acquisition

The majority of the respondents (79.2%) reported that their plots of land were used as crop fields before the households acquired it, while 8.3% of the total respondents reported that their plots of land were grazing enclosure before acquisition and 11.1% of the total respondents reported that they Bush/forest land before acquisition.

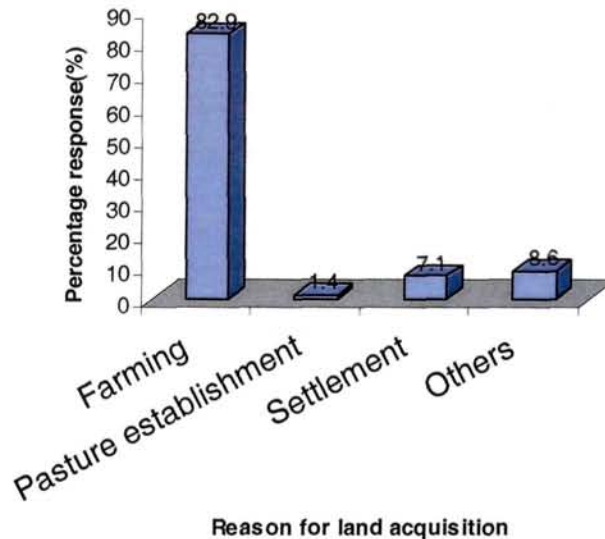
Land use before acquisition	Percentage response
Crop field	79.2
Grazing enclosure	8.3
Communal grazing	1.4
Bush/forest	11.1

Almost the respondents (97.2%) indicated that their land is now mainly used for cultivation.

3.3.2.5 Reason for land acquisition

The major reason as to why most respondents acquired land was for farming (82.9%) followed by pasture establishments/settlement (7.1%). While 8.6% of the respondents acquired land for some other reason, about 1.4% of the respondents acquired land for pasture establishment. See figure below

Graph showing reason for acquisition of the land



3.3.3 Where animals are grazed

The majority of the respondents (92.9%) have no access to communal land. Those who had no access to communal land, grazed their animals mainly on own land (84.6%), followed by those who grazed on neighbour's land (11.5%) and the rest (3.8%) used some other means.

Grazing grounds	Valid Percent
Own land	84.6
Neighbour's land	11.5
Other	3.8

33.4 Rights over land

3.3.4.1 Rights to sell land

While about 45% of the respondents who owned plots could sell them only after consultation with family members, 42.5% could sell their plots only under circumstances. The least percentage (2.7%) could sell their plots completely under their own discretion.

3.3.4.2 Renting out land

The majority of respondents (39.7%) reported that they could rent out their land under circumstances, followed by those who can rent out land after consulting family members (30.1%). The least percentage (1.4%) reported that they could rent out their land after getting permission or consulting village leaders.

3.3.4.3 Rights to share crop

About (37%) of the respondents said sharecropping is done completely under own discretion and 31.5% sharecrop after consulting the family members, the least percentage (1.4%) said they sharecropping is done with permission from the village leaders.

3.3.4.4 Rights to give out land

Majority of the respondents (65.8%) give out land under circumstances and 27.4% give out land after consulting the family members. 30.4% give out land completely under their own discretion and about the same percentage (30.4%) give out land only under circumstances.

3.3.4.5 Rights to exchange land

Thirty nine percent (63.9%) of the total respondents do not exchange land but do so only under circumstances, 22.2% exchange land after consulting family members.

3.3.4.6 Rights to Choice of crops on land

Majority respondents (64.43%) have crop choice on land but consult family members, (30.1%) have choice completely under their own discretion. The rest (5.5%) have choice of crop on land under circumstances.

3.3.4.7 Rights to fallow land

About 36.1% of the respondents can fallow after consulting family members and the same percentage (36.1%) can fallow their land completely under their own discretion.

3.3.4.8 Rights to plant Trees

About 38.9% of the respondents plant trees after consulting family members, followed by those who plant trees completely under their own discretion (37.5%). The rest (23.6%) plant trees only under certain circumstances.

3.4 Income sources

About 74% of the total respondents reported that their household members had informal/formal sources of income during the period 1st January 2001 to 31st December 2001.

3.4.1 Informal activities

Most household members, who had informal sources of income, got it through trading (28.6%) and farming (25%). The least were involved in brokerage and hawking (3.6%).

The members with informal sources of income worked for a minimum of 2 hours a day and a maximum of 15 hours a day while the average time worked was about 6 hours.

The average amount earned by members with informal sources of income was 29,653/- per season with the maximum and minimum amounts earned per month being 120,000/- and 3000/- respectively.

3.4.2 Formal activities

Respondents reported that members in their households were teachers (55.6%) and administrators (11.1%).

Members with formal sources of income worked for a minimum and a maximum of 4 and 24 hours a day while the average time worked for was 10 hours.

The average amount earned by members with formal sources of income was 59249/- per month while the maximum and minimum amounts earned per month were 200,000/- and 100,000/- respectively.

3.4.3 Main source of income

The greatest percentage of respondents (86%) reported that sale of farm produce was their main source of income. Further more, about 67% ranked farming as the first main source of income during last year.

35 Cash use in farming

3.5.1 Expenditure on farm inputs

Most of the farm inputs were bought as shown by the percentage distribution of the method of acquisition below.

Farm inputs	Percentage representation of Method of acquisition			
	Bought (%)	Loaned (%)	Free of charge (%)	Borrowed (%)
Seeds	75	0	25	0
Panga	85.2	0	14.8	0
Axe	84.6	0	15.4	0
Garden fork	20	0	0	80
Watering can	0	0	0	100
Hoe	85.7	0	14.3	0
Slasher	65.2	0	8.7	26.1
Wheel barrow	0	0	14.3	85.7
Pesticide	93.3	0	6.7	0
Sprayer	18.2	0	0	81.8
Ox-plough	22.2	33.3	22.2	22.2
Animal feeds	40	0	40	20

3.5.2 Cash expenditure in farming

Most households spent on farming cash crops, food crops and livestock production in all the three years (1999 - 2001). Among the respondents interviewed no body spent money on bee keeping between 1999 and 2001.

The highest average amount of cash used in farming cash crops (241000/-) was realized in the year 2001 with a maximum and a minimum of 800,000/- and 2,000/- respectively followed by an average amount of 70,607/- realized in farming cash crops in 2000 with a maximum and minimum amount of 850,000/- and 2000/- respectively.

3.5.3 Income realized from farm produce

Most respondents indicated as having realized income from food crops, followed by cash crops and livestock production between 1999 and 2001.

The highest average income (55182/-) was realized from the sale of livestock in the year 1999 with a maximum and minimum of 400,000/- and 4,000/- respectively in that year, followed by an average income of 103028/- realized from livestock production in the year 1999 with maximum and minimum income in that year being 150,000/- and 50,000/- respectively. However, nobody realized any income from bee keeping between 1999 and 2001.

3.5.4 Labour constraint

A total of about 82% respondents reported as having had labour in land preparation between 1999 and 2001. Despite the labour constraint in these years, most respondents reported that family members (40.7%) and hired labour (37%) was the main sources of labour for land preparation in all these years.

3.5.5 Failure of implementation due to labour shortage

Majority of respondents (71.4%) agreed that there were some enterprises/technologies, which were not implemented, due to a labour shortage. While the rest (28.6%) said there wasn't any enterprise/technology, which was not implemented due to labour shortage.

3.5.5.1 Enterprises that failed due to shortage of labour

Most respondents (36.4%) reported that maize planting wasn't possible because of labour shortage; followed by cassava planting (22.7%). The least enterprises that failed due to labour shortage were millet and sweet potatoes (4.5%).

3.6 Credit

3.6.1 Credit reception

Most households (75%) did not receive any credit during the last three years. The rest (25%) had received credit.

3.6.2 Type of credit providers

Co-operatives were the highest reported provider of credit with 36.4 percentage responses followed by Banks (27.3%), friends and relatives (18.2%) and trader/shop (9.1%)

3.6.3 Mode of repayment

Most of the households (76.9%) who received credit were meant to pay it back in cash or as a revolving fund (23.1%).

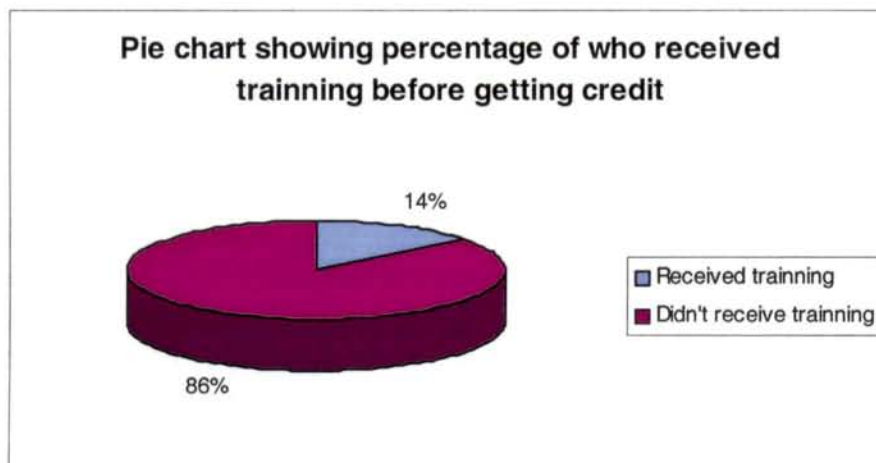
On average 226,357/- was borrowed by each household with a maximum and a minimum of 1,000,000/- and 10500/- respectively.

3.6.4 Repayment period

Majority of the respondents (7.1%) were required to pay their debts within one year followed by 6-10 months (28.5%) and the rest between 0-5 months.

3.6.5 Training before going for credit

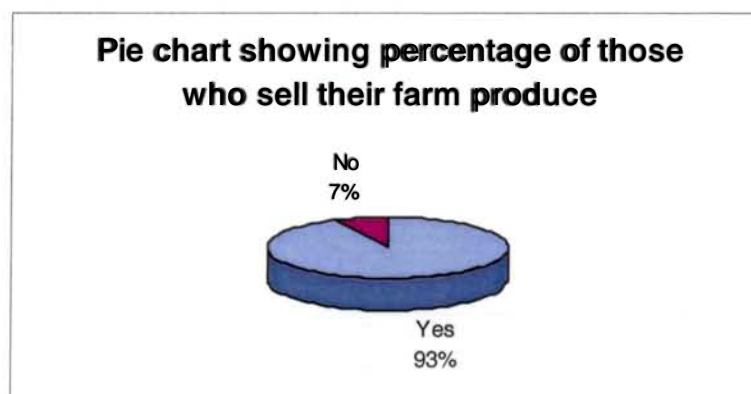
Sixty percent (85.7%) of the total respondents reported not to have received any information or training on how to use the credit before getting it. The rest (14.3%) received information or training on how to use the loan. See pie chart below.



3.7 Marketing

3.7.1 Sale of farm produce/livestock products

Almost all respondents (92.6%) reported that they sell some of their farm produce/livestock products and the rest (7.4%) do not sell any. See pie-chart below.



3.7.2 Products sold

The major sold farm produce/livestock products are cotton (26.7%), cassava (22.2%), and groundnuts (17.8%). The least sold product was sweet potatoes (2.2%).

Most of the respondents sold their produce from the farm gate (61.5%) or market (26.9%). Also about 89% of the respondents walk at most one kilometre to sell their produce.

3.7.3 Marketing problems faced

The marketing problems recorded by the respondents varied from low production (66.7%), lack of market and low prices for the produces (33.3%).

3.7.4 Difficulties in marketing farm produce.

Most respondents (87%) had difficulty in marketing produce from their farm enterprises while the rest (13%) had no difficulties.

3.7.5 Farm enterprises facing marketing problems

Among others, the farm enterprises that mostly face marketing problems include; cassava (20.5%), cotton (17.9%), g/nuts and millet (15.4%). some of the marketing problems faced by the farmers are storage until prices are high, taking to distant markets where prices are high.

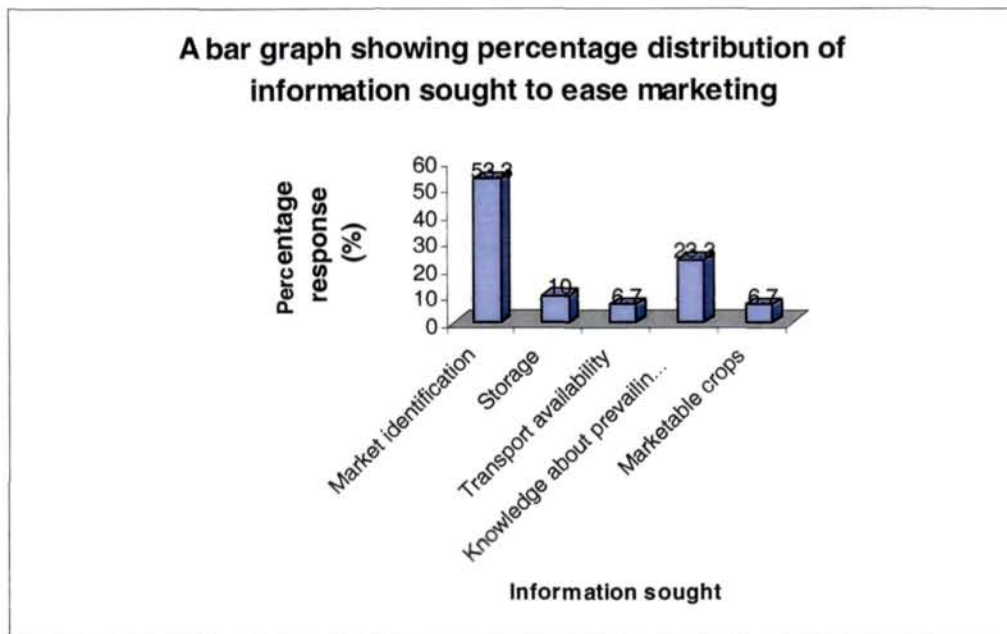
Most respondents (52.6%) reported that they do not have solutions to the marketing problems, while 26.3% reported that they always take their produce to distant markets where prices are high or they store their produce until prices are high (10.5%)

3.7.6 Need for marketing information

Market identification (53.3%) is the information mostly sought by the respondents in order to ease marketing of their farm produce. The second most needed information was knowledge about prevailing prices (23.3%) followed by storage (10%) and identification of marketable crops (farm produce with inelastic demand) (6.7%).

Furthermore, die respondents reported that only feeder roads pass through their villages.

See bar graph below.



3.8 Information and technology adoption

3.8.1 LIVESTOCK

3.8.1.1 Possession of different livestock species

Among those who had zebu cow species, each one of them had an average of 2 animals with a maximum and minimum of 6 animals and 1 animal respectively.

Zebu bulls more than three years old while have an average of about 2 bulls with a maximum and minimum of 5 bulls and 1 bull respectively

In addition, the zebu heifers and bull calves between the age of one month and three years in an average range of 1 - 2. No respondent had cross and *Ankole* cattle of any size.

Among those who had female and male sheep, each household had an average of about 2 sheep with a maximum and minimum of 2 and 1 respectively.

Those who either had goats for either local, dairy or meat species had an average range of about 1-5 goats with a maximum and minimum range of 1 - 8 goats.

Other male and female livestock had an average of 3.4 per household with a maximum and minimum of 14 and 1 respectively.

3.8.1.2 Importance of livestock

About 80% of the respondents indicated that the importance of livestock to them home consumption food and source of income. Also 52.3% out of total respondents indicated that livestock is important as a source of income.

3.8.1.3 Person consulted about change in livestock farming

The respondents reported that when they want to change the practice in livestock farming they mostly consult veterinary officers (56.7%) and extension staff (20%). fellow farmers (24%). Also about 3.3% of the respondents reported that they do not have anybody to consult.

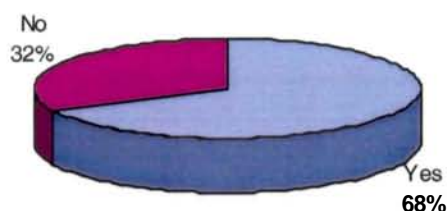
Person consulted	Percentage response
Veterinary Officer	56.7
Fellow farmers	3.3
Extension staff	20.0
Do not have any person	3.3
Family member	16.7

3.8.1.4 Information sought about livestock

The major information sought from the above sources was reported to be mostly pest and disease control (46.2%), followed by animal feeding (25.6%), disease diagnosis (17.9%) and Artificial insemination (A.I) (10.3%).

3.8.1.4 Accessibility of veterinary services

About 67.9% of the respondents reported to have access to veterinary services while the rest (32.1%) reported not to have accessibility to veterinary services. See pie chart below



3.8.1.5 Kind of veterinary information accessed

Most respondents (44.4%) reported that they access information about pests and diseases control, followed by the treatment of animals (40.7%), breeding methods and feeding (7.4%).

3.8.2 Information needed about fodder

Respondents also reported that they either cut Napier or maize Stover for their animals.

About 51.2% of the respondents reported that they mostly want to know information concerning fodder management, while 23.3% reported they want to know about fodder use by type in milk production and 18.6% want to know about fodder establishment. The least kind of information needed about fodder for increased livestock production is pasture storage (2.3%). Also respondents reported that they always buy fodder during the months of January (37.5%), February (37.5%) and March (25%) only.

3.83 Place where the animal is kept

Majority respondents indicated kept their cattle outside (82.1%) while 3.6% and 7.1% said they keep their cattle in a kraal and house respectively. See bar graph below.

Place where animals are kept	Valid Percent
Outside	82.1
Kraal	3.6
House	7.1
Kitchen (calf)	7.1

3.8.4 Use of bedding for cattle

Majority of the respondents (96.4%) do not use bedding for their cattle while only 3.6% reported to use them.

Those who reported as not having used bedding for their cattle did so because: it's not necessary for animals (62.5%), ignorance (29.2%) and the rest (8.3%) said it is not necessary.

3.9 Cattle dung management

3.9.1 Cattle dung usage

Cattle dung is mostly scattered in the gardens (54.8%), used for making composite manure (19.4%) or Used for smearing basket/houses (12.9%). The least percentage of respondents reported that they heap in one place (3.2%). See table below.

Use of cattle dung	Percentage response
Scatter them in gardens	54.8
Burn them	9.7
Used for smearing basket/houses	12.9
Make composite manure	19.4
Heap in one place	3.2

3.9.2 Source of knowledge about cattle dung management

Most respondents got to know about cattle dung management from extension workers (69.2%), their fellow farmers (23.1%) or NGOs/ CBOs (7.7%).

Source of knowledge	Percentage response
Extension workers	69.2
Fellow farmers	23.1

3.9.3 Quality of farmyard manure

Most respondents (76.2%) are not satisfied with the quality of farmyard manure while 23.8% reported that they were satisfied. The respondents reported that they mostly need information about farmyard preparation (38.9%), application (30.6%) and management (30.6%).

3.10 Horticulture

3.10.1 Horticultural crops grown in 2001

The most grown horticultural crops in the respondents' farms in 2001 were cassava (10.7%), jackfruits (9.3%), Yams (9.3%) and tomatoes (8%). The least grown crops included carrots, lemons, pumpkin and pineapples all with (1.3%) of response.

The most important purpose or use of these crops was for food (93.4%) and the rest was income.

3.10.2 Horticultural crops grown in 2000

The most grown horticultural crops in the respondents' farms in 2000 were cassava (16.9%), Yams (U.3%), jackfruits (11.3%). The least grown crops included carrots, pumpkin, lemon, pineapple and sorghum all with (1.4%) of response.

The mostly reported purpose or use of these crops was for food (98.6%) and the rest (1.4%) was for income.

3.10.3 Horticultural crops grown in 1999

The mostly grown horticultural crops in the respondents' farms in 1999 were cassava (19.4%), jackfruits (12.9%), yams (9.7%) and millet (8.1%) respectively. The least grown horticultural crops were cyrinda and sorghum all with (1.6%).

The mostly reported purpose or use of these crops was for food (98.5%) and income (1.5%).

3.10.4 Horticultural crops introduced in the last three years

Most respondents reported that the following were the horticultural crops introduced in the last three years: - Yams (27.3%), cassava (18.2%), jackfruit (13.6%). respectively. The least reported horticultural crops grown during the last three years were; millet, cabbage, Amarathus red and Sukuma wiki all with a percentage response of 4.5%

3.10.5 Source of horticultural crops planted during the last three years

The respondents also reported that the agency or source of crops was mainly fellow farmers (55%); followed by market (40%), while the other source reported was NGOs
See table below

Source	Valid Percent
Markets	40.0
Fellow farmers	55.0
NGOs	5.0

Most respondents reported that they utilized these crops for food (95.2%) and income (4.8%).

3.10.6 Interest in growing other horticultural crops

Of those who had the interest in growing other horticultural crops, 55.6% indicated that they have interest in growing cassava, pineapples (33.3%) and millet (11.1%).

The information needed about the crops mostly included: - their management (pest and disease control) (47.4%), followed by source of seeds/planting materials (21.1%), establishment (18.4%) and varieties available on market (13.2%) respectively.

3.11 Community based natural resource management (NRM)

3.11.1 Source of information on natural resource management

The information on natural resource management (agro-forestry, soil and water conservation, spring protection, soil fertility) is mostly got from extension workers (30.4%), followed by Media (Radio) (17.4%) and agricultural officer (17.4%). See table below.

Source of information of NRM	Percentage response
Mass media (radio)	21.7
Fellow farmers	17.4
Extension workers	30.4
NGOs/CBOs	4.3
Sub country	4.3
Agriculture officer	17.4
Forest officer	4.3

3.11.2 Technologies learnt through extension agencies

The greatest percentage (98%) out of the total respondents reported that they had learnt crop production through extension agencies over the last three years; the mostly specified area of crop production was sunflower production. Other technologies, which respondents learnt included: - livestock production and soil conservation.

3.11.3 Technologies being practiced through extension agencies

The greatest percentage of respondents reported that they had been practicing crop production through extension agencies over the last three years; the mostly specified area of crop production being practiced was Banana production. Other technologies, which the respondents are practicing included; Soil improvement and soil conservation measures.

3.11.4 Technologies familiar with before extension influence

The greatest percentage of respondents indicated that they were familiar with livestock production before extension influence over the last three years, followed by crop production. The mostly specified area of livestock production was pests and disease control. Other technologies that the respondents were familiar with included; tree establishment/intervention, Land preparation and planting, Soil improvement, Harvesting and storage respectively.

3.11.3 Tree management

3.11.5.1 Kind of trees in the farms

The following were most kind of trees recorded by the respondents; Oranges (15%), Jack fruit (13.3%), Mango (13.3%) and acacia (11.5%). Seventy three percent (73%) of these trees were planted while 26.8% were naturally grown.

37.2% of the respondents indicated that trees on their farms were intercropped with other crops and 29.2% were just scattered all over the farm. See table below.

Configuration	Percentage response
Woodlot	4.4
Intercropped with crops	37.2
Hedges	14.2
Just scattered in the farm	29.2
Others	15.0

3.11.5.2 Uses of trees on the farm

The greatest percentage of respondents reported that they used trees on their farms as a source of food (59.6%), followed by building (20.2%) and source of firewood (11%). See table below.

Use of trees	Valid Percent
Food	59.6
Share	.9
Building	20.2
Firewood	11.0
Fodder	.9
Windbreakers	7.3

3.11.5.3 Information asked about tree management

Most respondents (56%) reported that they don't find out more about the species of trees **they plant in** their farms while the rest (44%) find out about the tree species.

The source of the information asked about the species of trees in most cases was varieties **available** (55%), tree management (40%) and grafting (5%).

The above information was provided by an agricultural officer (33.3%) and a forest officer (26.7%). The least provider of information is local councils (6.7%). See table below

Source of information	Percentage response
Extension officer	20
NGOs/CBOs	13.3
Agricultural officer	33.3
Forest officer	26.7
Local council	6.7

The following information is not provided so far:- varieties available (64.3%) and market availability (14.3%). See table below.

Information not provided	Percentage response
Market availability	14.3
Varieties available	64.3
Grafting	7.1
Budding procedures	7.1
Various uses of tree species	7.1

3.11.5.4 Sources of tree seedlings

The sources of tree seedlings reported mostly were: - fellow farmers (37.5%), within the farm (29.2%) and market (20.8%). See table below.

Source of seedlings	Percentage response
Market	20.8
Sub-county	4.2
Agricultural officer	8.3
Fellow farmer	37.5
With in farm	29.2

3.12 Investment in the land

The table below shows kind of practice respondents mostly paid for or would have paid during the last one year (2001) in order to improve their land.

Practise/improvement	Minimum	Maximum	Average amount in Shs
Hired labour	2000	250000	74812
Inorganic fertilizer	16000	16000	16000
Seeds/seedlings	3000	39000	16066
Pesticides/fungicides	1200	30000	7975
Farm implements/tools	2500	18000	9166
Feeds	50000	75000	62500
Livestock	5000	210000	38593
Purchased land	15000	665000	296666

3.12.1 Soil and water conservation

3.12.1.1 Fallowing land

Fifty nine percent (67.9%) of the total respondents reported to be practicing fallowing. The main reasons why others did not practicing fallowing the land were lack of enough land.

Those who leave their land to fallow mostly used the natural type of fallow (95.8%) and the rest (4.2%) used improved type of fallow.

3.12.1.2 Reasons for fallowing land

About 81% of the respondents reported that the reason as to why they leave their land to fallow was to restore soil fertility. See table below.

Reason for leaving the land to fallow	Percentage response
To restore soil fertility	80.8
Cannot prepare the land (lack of labour and lack of cash)	3.8
Drop in crops yield	11.5
Others	3.8

3.12.1.3 Length of the fallow

Most respondents reported that they fallow their land for a period of between one and two years (38.9%), also 11.1% fallow land for at least one season. See table below.

Length of fallow	Percentage response
One season	11.1
One year	38.9
Two years	38.9
More than two years	11.1

3.12.1.4 Problems with land fallowing

About 58.3% of the total respondents reported that they had problems with leaving their land to fallow.

The problems faced in the course of land fallowing include; conflict with the neighbours (66.7%) and pest establishment (33.3%).

Below is a table showing the percentage distribution of the information needed in order to address the above problems

information needed	Percentage response
Loan accessibility	25.0
More agricultural training	66.7
Growing of legumes in a	8.3

farmer

3.12.1 J Comparison of yields between 5-10 years ago and current yields

The majority of the respondents reported that the current yields are less (77.8%) than the yields 5-10 years ago. While 14.8% of respondents said the current yields are more than yields 5-10 years ago and the rest (7.4%) reported that it was still the same.

3.12.2 Causes to change in yield

The causes of the above variations in yields were exhaustion of soil nutrients (64%). See table below.

Cause of change in yield	Percentage response
Exhaustion of soil nutrient	64.0
Change of weather	12.0
Poor farming practices	12.0
Over cultivation	12.0

In addition, most respondents (77.8%) also reported similar problems are prevailing on their neighbour's farms.

3.12.2.1 Soil erosion problems

The majority (86.7%) of the total respondents reported soil erosion as a problem on their respective farms.

Those who reported soil erosion existence on their respective farms faced mainly rill erosion (36.2%), crop roots exposed (31.9%) and crops washed away (31.9%).

Sixty six percent (66%) of the total respondents agree that conservation activities have increased agricultural production in their area. Also 19% strongly agree and 12.5% were undecided. Those who disagree were 3.1%.

The biggest percentages of respondents (54.5%) agree that the way conservation activities are organized in their area motivates the community action group.

However, 15.2% were undecided, 9.1% disagree and 6.1% strongly disagree. Only 15.2% of the respondents strongly agree that organization conservation activities motivate the community action group.

The greatest percentage (63.6%) of the respondents agree that community members are always wishing to listen to advice from field worker/officer regarding soil and water conservation. Also 24.2% strongly agree, 6.1% disagree, 6.1% were undecided.

About 29% of the respondents disagree with the statement that community members consider land degradation as over exaggerated; while 22.6% agree with the statement and 19.4% of the respondents strongly agree, 29% were undecided.

The majority of the respondents (33.3%) agree with the statement that community members wish to take remedial action but constrained by age, health, and personal

circumstances. About 18.2% strongly agree with the statement, 15.2% are undecided, 9.1% disagree and 24.2% strongly disagree.

45.5% of the respondents strongly agree with the statement that community members recognize need for attention to soil productivity. Also the same percentage (45.5%) agrees with the statement while 6.1% were undecided and 3% disagree.

About 66.7% of the respondents agree with the statement that community members wish to take remedial action but available solutions are too costly; 12.1% strongly agree, 12.1% undecided. Those who disagree with the statement were 6.1% and 3% strongly disagree.

The highest percentage of respondents 57.6% agree with the statement that community members wish to take remedial action but have insufficient information to make decisions. Also 30.3% strongly agree with the statement 9.1% are undecided and 3% strongly disagree.

Most respondents (58.1%) agree with the statement that community members wish to take remedial action but availability is the constraint. In addition, 25.8% strongly agree with the statement while 12.9% and 3.2% were undecided and disagree respectively.

3.13 Collective action for natural resource management for natural resource management

3.13.1 Involvement in a group

Seventy two percent (42.3%) of the total households had an adult (or adults) belonging to a group (project) or cooperative during the past 5 years. The rest (57.7%) had no member belonging to a group or cooperative.

Of those who belonged to a group or cooperative, 85.7% reported their group/cooperative still existed, while 14.3% reported their group no longer existed at the time of the study.

3.13.2 Number of members in a group

Most groups where the household members belonged to had the number of members ranging between 1-25 members (57.9%) and 56-75 members (15.8%). See table below.

Number of members in a group	Valid Percent
Lowest - 25	57.9
26-50	10.5
56-75	15.8
Over 100	15.8

3.13.3 Distance travelled to usual meeting/working place

About ninety two percent (70%) of group members had to travel at least 1 kilometre to usual meeting/working place. Fifteen percent (15%) of respondents reported walking a distance of over 10 kilometres and about the same percentage (15%) travel between 2 and 10 kilometres.

3.13.4 Groups and natural resource management

Seventy two percent (72%) of the total respondents belonged to groups that do not address issues of natural resource management (soil, water, land, forests, etc) while 28% were members.

3.13.5 Group formation

Of the total groups that existed groups, 71.4% were formed through community's own initiative, 14.3% of the groups were formed through NGO/CBO influence and 14.3% through government's influence. See table below.

How group was formed	Valid Percent
Government influenced	14.3
NGO/CBO influenced	14.3
Community's own initiative	71.4

Way of formation	Responses
Community's own initiative	86.7%
NGO/CBO influence	6.7%
Peer group pressure	6.7%

3.13.6 Group affiliation

About 78% of the total respondents reported their groups as not being affiliated to larger/organization/federation.

Those groups affiliated to bigger organizations benefited from the affiliation in form of financial accessibility (66.7%) and market accessibility (33.3%).

3.13.7 Membership to Natural Resource Management group

All the respondents (100%) reported that they would like to be members of a natural resource management group given chance.

Of those who would want to be members of a natural resource management group, 77.1% reported if they joined the group, they would benefit from agricultural training offered, 11.4% said they would benefit from loan accessibility 11.4% said they would benefit from market accessibility.

3.13.8 Purpose and activities of the group

The main purpose for which groups are set was poverty eradication (58.3%) and market accessing (25%). See table below

Group purpose	Percentage response
Poverty Eradication	58.3
Loan provision	16.7
Market accessing	25.0

The table shows the years when a respondent joined the group and the respondent percentage distribution.

Year when group was joined	Percentage response
1987	8.3
1988	8.3
1991	8.3
1994	8.3
1995	8.3
1996	8.3
1997	16.7
1998	8.3
1999	8.3
2001	16.7

Year when respondent joined group	Distribution of respondents
1998	17.6%
1999	11.8%
2000	58.8%
2001	11.8%

3.13.9 Activities of the groups

The activities engaged in by group members include; pooling funds (33.3%) and growing crops together (41.7%). See table below.

Activities of the group	Percentage response
Pooling funds	33.3
Growing crops together	41.7
Animal rearing	8.3
Extra curriculum activities	8.3
Graft work	8.3

3.13.10 Technologies/innovations adopted through the group

Most group members (28.6%) have adopted horticultural management from their respective groups while about the same percentage (28.6%) had adopted commercial farming/marketing and agro-forestry (28.6%). the rest (14.3%) had not adopted any technologies/innovations.

3.13.11 Groups addressing issues of Natural Resource Management (NRM)

Almost all the respondents (90%) reported that there are no groups in their villages addressing issues on natural resource management. The rest (10%) reported the non-existence of such groups in their respective villages.

3.13.12 Most serious land and water problems affecting community action groups.

The respondents in their opinion reported that the most serious land and water problems affecting community action groups in their areas include; water sources (26.3%), low soil fertility (21.1%) and small site of land. See table below.

Problems affecting community activities	Response distribution
Soil erosion	7.9%
Poor drainage	10.5%
Small site for land	21.1%
Water sources	26.3%
Low soil fertility	21.1%
Lack of adequate knowledge	13.2%
Water source	26.3%

3.14 Incentives for environmental management and communication channels

3.14.1 Factors that glue members together in a group.

Most respondents (40%) reported that they glued together in their groups by the rules and sanctions within the group followed by resources (20%). Other factors include: goals, (15%), co-operations (10%) and sound leadership (10%). See table below

Factors gluing members in a group	Response distribution
Rules & sanctions	40%
Co-operations	10%
Goals	15%
Sound leadership	10%
Resources	20%
Membership fee	5%

3.14.2 Sources of information on technologies related to environmental management

Twenty six percent (26%) of the total respondents reported that their source of information on technologies related to environmental management was extension workers, followed by fellow farmers (15.8%) and agricultural worker (15.8%). See table below.

Source of information	Percentage response
Extension worker	26.3

Agricultural officer	15.8
Sub-county	5.3
Fellow farmers	15.8

3.15 Leadership within groups

3.15.1 Election of group leaders

About **92.3%** of the respondents reported that leaders in their groups are voted into power **following** the principle of one-man one vote. The rest of the respondents (7.7%) reported that no elections were held in their groups.

3.15.3 Qualities of good leadership

The majority of the respondents (50%) rated the leadership in their groups as being good, while the rest (50%) reported their group leadership as being average.

Majority respondents (34.6%) considered good leadership as the one with transparency, 15.4% considered good leadership as one in which the leaders organize and have sense of humour. See table below

Qualities of a good leader	Percentage response
Loyalty	11.5
Honesty	7.7
Accountability	3.8
Transparency	34.6
Sense of humour	15.4
Organising regular meetings	15.4
Educative	7.7
Others	3.8

4.0 Conclusion

The fore going account gives an overview of the livestock status in Tororo district. The study was conducted on a very small scale and is in no way representative of the actual district status. However it is indicative of the prevailing conditions and circumstances for the poor livestock farmers' voices in the district and the status of civil society organizations that are working to improve the livelihoods of these farmers in the District.

This study was an eye opener and a further detailed and elaborate study can be undertaken based on the preliminary findings of this particular study. There are also several follow up actions that can be generated from the results of this study geared towards interventions to improve the highlighted conditions that are further impoverishing the livestock keepers in Tororo District.