MIDTERM PROGRESS REPORT

A comparative study of institutional arrangements for small-scale livestock farmers in communities in the GLTFCA in Zimbabwe and Mozambique

A project being implemented under the AHEAD-GLTFCA Seed Grants Program
by
Centre for Applied Social Sciences (CASS)

DRAFT

FIELD WORK FINDINGS INTERIM REPORT

By
Jeanette Manjengwa
Nícia Givá
Shelton Kagande

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1.0 Introduction

The Centre for Applied Social Sciences (CASS) proposal 'A comparative study of institutional arrangements for small-scale livestock farmers in communities the Great Limpopo Transfrontier Conservation Area (GLTFCA) in Zimbabwe and Mozambique' was granted funding for implementation under the AHEAD-GLTFCA Seed Grants Program in September 2008. This interim report records the project's progress, activities and findings from January 2009 to June 2009. The report describes the rational for doing the project, the aims and objectives and the methodology used, and presents data collected in the field sites of Malipati and Gezani in Zimbabwe and Macaringue and Combomune Rio in Mozambique. The findings so far are presented but there has only been some preliminary analysis of the data. Furthermore, some more data needs to be collected, including from community feed-back meetings, in order to triangulate the information. Full interpretation has not yet been done, including applying a comparative framework to the results. This will feature in the final report. Even though the results have not yet been refined, they nevertheless provide interesting insights on the various institutional arrangements around small-scale livestock farmers in the GLTFCA and highlight a number of problems.

Rationale for the project

Small-scale livestock farmers in the GLTFCA have different levels of institutional organisation and support, monitoring, management and disease control activities. It has become critical to understand the dynamics of communal cattle production systems, and their interactions, in the GLTFCA context. The management of wildlife and livestock diseases within the envisaged larger trans-boundary landscape remains unresolved and is an issue of major concern to other economic sectors in the region. There does not appear to be an existing formal policy on animal health and disease control for the GLTFCA and therefore, an assessment of existing institutions around cattle and disease control in the different countries will provide a baseline and information that will feed into future policy processes.

Project aim and objectives

The aim of the project is to investigate local institutional arrangements and capacity in small-scale livestock communities in the GLTFCA to manage livestock and control livestock diseases so as to enhance production and marketing. An understanding of the issues surrounding animal health will help us to understand how animal health impacts on the GLTFCA social-ecological system and vice versa. A better understanding of animal husbandry practices and examination of

current practices particularly in relation to disease prevention and problem animal control will assist in the development and introduction of mitigating strategies by the stakeholders.

Objectives:

1. To understand the institutional arrangements around livestock production in selected local communities in the GLTFCA.
2. To examine the grazing and watering patterns in the local communities.
3. To understand the factors affecting effective disease management and control in these communities.
4. To identify the communities' problems, challenges and opportunities concerning cattle-raising in the TFCA.
5. To determine attitudes of small-scale livestock producers towards wildlife and the GLTFCA.
6. To facilitate engagement between different level stakeholders in order for communities to develop improved management plans so as more effectively manage livestock and control animal disease in the GLTFCA.

2.0 Methodology

An interpretive approach was used to find out and understand the institutional arrangements around small-scale livestock farmers in the GLTFCA. An interpretive approach entails interacting with and listening to people, recording what people say about what is happening, and analysing what can be learned from people's subjective experiences as well as from 'objective' facts.

In order to fully address the objectives, a combination of qualitative and quantitative techniques was used as these methods complement each other and allow for thorough triangulation. The research used in-depth semi-structured interviews with key informants, focus group discussions and a livelihoods survey. While the design and questions of the quantitative survey are defined before interviewing begins, with the semi-structured interviews design continues in the interviewing phase and questions are identified and modified in response to understanding or information gained in earlier interviews. New questions or aspects of enquiry may emerge during the course of an interview. Apart from formal interviews, information was also obtained from informal, opportunistic unstructured interviews and conversations, using a mental checklist. Findings are validated by triangulation: does information from different sources lead to the same conclusions?

A number of focused group discussions and participatory rural appraisal (PRA) exercises were held with the community, including community resource mapping and matrix of prioritisation. A household survey of 7 – 10% of households was carried out in three of the four sites, in order to collect systematic information regarding livelihoods, livestock number, livestock management practices and dynamics, diseases and respective treatment, and human/wildlife/livestock interaction.

Direct observation and participant observation were also used. Besides collection of primary data, secondary data was collected from literature and reports.

Interviews with different members of the community were conducted to gather information pertaining to particular institutional arrangements within the community and to gather some background information on the community. Key informants included livestock farmers, local traditional leaders, councillors, the local veterinary officers, and other key people in the community such as the local nurse, local police officers in charge of the stock theft unit, development workers and local headmasters and teachers.

During the planning meetings it was decided to include at least two sites per country as it was noticed that the situation for institutional arrangements around small scale livestock farmers varies **within** each country to some extent, as well as between the two countries, Zimbabwe and Mozambique. Four sites were chosen (see table below). Field work was carried out between January and June 2009 in the following research sites:

Site	**Location**	**Proximity to protected area**
Gezani	Chiredzi District, Masvingo Province, Zimbabwe	The village is approximately 50 kms from Gonarazhou National Park
Malipati	Chiredzi District, Masvingo Province, Zimbabwe	The village is 6 kms from Gonarazhou National Park. The community borders with the National Park
Macaringue	Massingir District, Gaza Province, Mozambique	Community lives within the Limpopo National Park support area/buffer zone
Combomune	Mabalane District, Gaza Province, Mozambique	The community is adjacent to Limpopo National Park, on the other side of the Limpopo River

The whole GLTFCA is characterized by being subtropical, with two main seasons, a dry season occurring from April to October and the wet season from November to March. The Limpopo basin is also characterized by cyclical droughts and floods. The average annual temperature is increasing, with the annual mean oscillating around 29^{o}c to 31^{o}c, although the maximum can reach 41^{o}c. Rainfall is low and erratic annual rainfall, with mean annual rainfall ranging between 300mm to 600mm.

The Research Team

The project is being led by Jeanette Manjengwa, CASS, University of Zimbabwe. Shelton Kagande, a Masters in Animal Science graduate, worked in the Zimbabwe sites, assisted by two field assistants, Mr Mhere and Mr Haruziviishe who are the local level veterinarian technicians

in the Department of Veterinary Service, for Malipati and Gezani areas respectively. The research in Macaringue, Mozambique was carried out Eng. Nícia Givá, Department of Agronomy, University of Eduardo Mondlane, who was assisted by Ilda Maria Armando Mabjaia, a final year veterinary student, University of Eduardo Mondlane. In Combomune, Jeanette was assisted by Abel Ngonhamo of Grupo de Trabalho Ambiental (GTA) who works on the scenario planning project.

Project Activities

Planning meetings

Planning meetings were held in December 2008 in Harare and January, 2009 in Maputo to:

- formulate research instruments including designing the questionnaire and compiling a lists questions for key informants and activities for focus group discussions;
- discuss research ethics, codes of conduct and expectations;
- organise field work logistics.

Several planning and coordination meetings were held during the course of the research, including revision of the questionnaire after its initial piloting in Gezani in February 2009.

A further joint planning meeting was held of the whole team during the AHEAD meeting of March 2009, in Namaacha, Mozambique. A PowerPoint presentation of the project was given at this meeting.

Desk study of available literature

We sifted through a large amount of literature that exits on small-scale livestock farming issues in southern Africa, both in Zimbabwe and to a lesser extent in Mozambique, and in particular in areas around the GLTFCA and the arising issues of animal health and livestock/wildlife interactions and human and wildlife conflicts. The literature search began in late 2008 and continues as new work is published and programme reports produced. The literature review is considered at this stage to be a working document as it needs to be extended and refined. The literature review looks at the history of the livestock sector in each country, the creation of the GLTFCA with its political and administrative implications and then concentrates on the small-scale livestock farmers who live in the TFCA and the institutions that support them, including disease control and marketing, focusing on Mozambique and Zimbabwe. The draft Literature Review document is presented separately.

The research instruments

Initially, two instruments were developed, namely an 8-page questionnaire survey and a comprehensive 14-page check list or guide of questions and activities for focus group discussions and key informant interviews. The research instruments were circulated for validation, piloted and then revised accordingly. Piloting of the 8-page questionnaire in Gezani revealed that it was too long, and with questions that could better (and more time cost-effectively) be answered during focus group discussions as the majority of the answers to some of the questions were the same. As a result of this experience, we reduced the questionnaire to four pages, retaining only the essential quantitative information. More information was solicited from individual interviews and focused group discussions. These provided more in depth

information, a deeper and more nuanced understanding of the issues. In some cases, follow-up interviews were held with the same informants or groups.

The questionnaire and checklist for semi-structured interviews and focus group discussion are in the Appendix 1and 2. In the checklist for interviews and focus group discussions, the questions, probes, and prompts were compiled as an interview guide that contained a number of headings of main areas each with a comprehensive series of standard, but open ended questions on sub-topics which formed a framework for the interviews. Not all questions were used in each interview; rather the numerous questions provided a pool from which relevant ones could be extracted for the interviews as appropriate. The checklist is flexible and was intended to be used as a guide only where the researcher decides which sections are appropriate and relevant on any particular occasion. The document is comprehensive, with 20 different sections. The researchers were instructed to focus on the livestock issues, if time was a limiting factor.

The research instruments were translated into Portuguese by Nicia Givá. The research assistants further translated the information into Shagaani.

Issues investigated

Some of the issues explored in the research include household labour contribution in cattle rearing, access to credit facilities, livestock losses and diseases, wildlife related problems, grazing and watering patterns, diseases and disease management. Information was gathered regarding institutional arrangements around livestock, including rules, norms and strategies, as well as local committees, government departments, dipping facilities, veterinary services, and other services provided by non-governmental organisations and donors. Where local livestock committees exist, their mandate, activities, effectiveness, representation, financial and accountability structures were examined. The role and scope of government extension and non-governmental organisation interventions was examined, including farmer's perceptions of their contribution and effectiveness. This information includes community animal primary health care and what are the major health issues identified by the farmers? What is their perception of a healthy animal and what measures are they currently practicing to control livestock diseases, such as vaccinations and dipping? What do they perceive as being the major threats to livestock rearing? What else could they be doing and what opportunities are there for improved animal health? What additional skills would be required? In what ways would they be willing to invest in such measures? Grazing resources and water issues were also investigated, including participatory resource mapping.

3.0 The research findings

The research findings so far are presented below, separately for each site. For the Final Project Report, this information will be consolidated using a comparative lens to analyse the similarities and differences across the sites.

3.1 GEZANI

Introduction
The questionnaire was piloted in Gezani and was administered randomly to 20 farmers. Of all the households that were interviewed the respondents were the household heads. All were male with an average age of 52 years, the oldest being 75 years old and the youngest household head being 27.

After this piloting, the questionnaire was revised and modified. Apart from the piloted questionnaire, four in depth interviews with key informants and a focus group discussion with farmers were also carried out.

Socio-economic issues
In Gezani, part of Wards 13 and 15 there are about 7000 people in the community with a male to female ratio of 1:2. There is a mixture of Venda and Shangani ethnic groups in the area. The number cattle a person owns is an indicator of wealth. According to one informant, the number of livestock especially cattle and the number of wives a person has is the common form of wealth ranking used by the community members. The more the cattle an individual has, the more the wives the person usually has, and also a better standard of living. There was an average of 6 children per household although extreme cases were observed in some households were there could be only one child and in a special case of a Mr Gezani Madhumelani who had 27 children with four wives. All the farmers were born in the area and inherited farms from their parents.

Many families in Gezani have brick houses. However, some community members do not have houses with bricks and asbestos or metal sheet roofing. There in a positive correlation between type of housing and the wealth status of an individual.

The dominant occupation for most of the respondents was farming, with 88.2% of the respondents indicating that they were farmers by occupation. Three quarters of the respondents relied on cattle sales as a way of getting money to meet their daily needs such as buying food, clothes, medical needs and school fees. 6.25 % had jobs; including migrant labour in South Africa and their major source of income were salaries. Another 6.25 % relied on remittances sent by family members who leave for and work in neighbouring South Africa. The remainder relied on casual piece jobs (*maricho).*

Household assets
Most households owned at least one of each of the following assets: bicycles, ploughs, water storage containers, axes, shovels and picks. On average each household owned water storage containers with an average capacity of 133 litres even though it could be as low as 40 litres in some households and as high as 375 litres in larger families.

Most families did not own harrows with only about 10 % of the farmers owning a harrow. None of the farmers had a tractor. Two out of the 20 farmers that were interviewed had cars; one was a traditional healer with ZINATHA (Zimbabwe National Traditional Healers Association), who

had 79 head of cattle and the other one is a farmer who had 141 head of cattle. Both farmers said that they sold large numbers of cattle for them to be able to buy the cars.

Every household owned at least a hoe, with an average of 4 hoes per household; the bigger the family the more the hoes they had. The majority of households also owned at least an ox drawn plough although about 12.5 % of the households did not have ploughs and relied on borrowing from those who had more than one. Only 31% of the farmers owned either a trailer or an ox drawn cart. Over a half, 56.25%, had access to a radio.

Household labour

Household labour involved daily routines such as collecting water, sourcing food, and firewood and were mainly done by female members of the family. Other activities such as gardening, ploughing, weeding, children's education and health care were usually done by both parents. There were other household duties that were exclusively done by males except in cases where no male member of the family was available, these were; cattle management routines, repairing implements and cattle herding. The most labour intensive and time consuming activity according to all the respondents was weeding.

Land holdings and agriculture

The farm setup is such that the residential plots are on one side, each one surrounded by a small piece of arable land. The fields are located on their own and the pastures for grazing consist of the extensive mopane forest that surrounds the whole area. Each farmer owns on average 9.57 hectares of arable land and between 0.4-0.81 hectares of residential land on which the homestead is built.

Livestock assets

Most of the farmers in the community rely on livestock production for sustenance, cattle being the major income earner, while goats, sheep, ducks, guinea fowls and chickens being kept for household consumption. Donkeys are kept for drought power purposes only. Apart from being the major source of income, cattle are also used for drought power, and traditional purposes particularly *lobola* (bride price). Milk for house hold consumption and local sales is obtained from both goats and cattle.

Every farmer interviewed had cattle. Farmers own more than two thirds more cattle than goats donkeys and sheep. One farmer had as much as 141 beasts but on average there were 32 cattle per farmer. Donkeys had the least number because only 30.8% of the farmers owned donkeys. All the farmers aspired to have more cattle. Most of the farmers aspired to have double or treble the number they already have, and there was even one farmer who desired to have a 1000 head of cattle. On average most farmers desire to have between 100 and 256 head of cattle. Droughts, cash sales and breeding problems were often blamed as the major hindrances that limited farmers from realising their desired herd sizes.

However, farmers were generally reluctant to disclose the number of animals that they actually have. They give false deflated figures instead. This is probably because they do not want to be considered wealthy and risk not being listed for food aid. Some farmers who have lots of cattle

and in a position to buy their own food get food aid yet some poor farmers who had honestly disclosed the number of animals they really have may fail to get food aid.

Grazing

Farmers in Gezani highlighted that they did not have grazing problems as they have vast Mopani rangeland that are available for cattle grazing in summer and browsing in winter.

Farmers do not really herd their livestock; they usually drive them to distant rangelands in the morning and collect them for evening kraaling. After the crops are harvested cattle are allowed to glean from the fields and also graze in the area around the homesteads if there is grass.

The grazing areas are communal common property. The forest area that surrounds the villages is used for such purposes. It is a vast tract of land whose vegetation is homogenous and dominated by stands of *Colophospermum mopane* trees and shrubs. The grass species are mainly annuals such as *Brachiaria brizantha* which provides excellent forage during the wet season. During the dry season the animals mostly rely on the nutritious browse of the mopane shrubs and bushes.

The grazing area is at least five kilometres from the homesteads and stretches for more than 20 km from the homesteads. The further the animals graze into the forest the better the grazing becomes such that most farmers graze their animals about 17 km away from their homesteads during the rainy season. During the dry season especially after harvesting animals are grazed within the small bushy areas around the homesteads and the fields. According to the survey, all the animals in the Gezani area grazed about 16 -20 km away in the wet season and about 2 km away in the dry season. None of the farmers had any paddocks but indicated that there was more than enough grazing in their area because of the vast mopane woodland that surrounds them.

All the respondents indicated that the headman was the one that allocated a piece of land as a grazing land. All the respondents indicated that the most important diet for their ruminant animals was *Colophospermum mopane* leaves and a nutritious grass called *Urochloa mosambicensis.*

Watering points

Animals do not travel long distances to drink water as they do for grazing. Water is not a problem in Gezani even during the drought years. All the farmers have access to a borehole or well at most 2 kilometres from their homesteads. The boreholes and wells provide a perennial source of water for all the livestock. In the rainy season livestock also drink from the streams and rivulets around the homesteads and within the pastures. According to the survey, all the cattle are watered from a well or boreholes near the homestead during the dry season and from the river, borehole or well during the wet season.

Livestock and Cultivation

Farmers also grow maize, sorghum, millet, groundnuts, watermelons and pumpkins for household sustenance only. Gezani is not suitable for any meaningful crop production without irrigation as it is generally dry and experiences intermittent droughts with less than 200mm of rain per annum (Meteorological Department Harare, 2009). Most farmers begin planting in their

fields after the onset rains mid to late December in most cases. The soils are mostly clays that become sticky and impossible to work on when wet such that when it rains farmers still have to delay land preparation until the soil conditions permit. Gezani farmers do not apply fertilisers or manure in the fields despite the large amounts of manure at their disposal since it promotes and accelerates plant water stress.

In the survey, all the respondents indicated that they used animals for drought power, using cattle for pulling the plough and the cart. Those with donkeys use them for pulling the cart. All the respondents indicated that they would prefer tractors to cattle/donkeys for tillage purposes. All the farmers except for one did not make use of crop residues in any way. The one that indicated that he used crop residues used stover as supplementary feeding for cattle in winter.

All the farmers in Gezani area perceived livestock farming to be more profitable than crop production.

Other livelihood strategies

Most resource poor farmers, mainly those with few or without cattle provide hired labour (*maricho*). They sometimes get paid in cash or are given live goats, sheep, guinea fowls, ducks or chickens. Apart from *maricho* Gezani farmers also engage in *humwe* which is a form of cooperative labour in the fields where by families gather and work in a particular family's field until everyone's field is done.

During times of food scarcity farmers often rely on selling cattle to get money to buy food. The farmers also get food handouts from the donor community funded by the World Food Programme (WFP). Plan International is non-governmental organisation that provides food items such as maize meal, cooking oil, sorghum and peas to the most vulnerable members of the community such as resource poor farmers and child headed families.

Animal health management and institutional support

According to the Local Veterinary Officer, Gezani Animal Health Centre, the Government of Zimbabwe has managed to provide dips and drugs to the lowveld even when they could not afford to supply the other parts of the country because the area is in the red zone of disease prevalence. There is also non-governmental organisation support to the livestock sector, an example being CIRAD.CIRAD runs a project in which they tested for contagious abortion and mastitis in selected cattle. In the CIRAD project some cattle tested positive for mastitis, bovine TB and Contagious Abortion (the informant would not disclose specific details because he had signed a contract with CIRAD not to discuss this information and referred the interviewer to CIRAD). The general feeling amongst the key informants is that CIRAD projects lack feedback to the communities, their test results do not come targeting the specific farmers but are combined results instead with minimal benefit to the farmer and the veterinary services department.

The most common livestock diseases in the Gezani area are Blackleg in cattle and Newcastle in poultry. The Department of Veterinary Services in the Ministry of Agriculture is aware of this and often vaccinate all susceptible animals annually. Blackleg killed about 900 cattle within the Gezani area where there are six dip tanks, within the last twelve months. Newcastle claimed

more than a thousand birds, wiping out all chickens and turkeys in some homesteads. Vaccines did not reach the community in time. Ducks seemed to be resistant to Newcastle.

Most farmers are aware of ethno-veterinary issues and often use some medicines before they consult the veterinary office but they do not disclose the details to the veterinary office because they think that it is wrong to use traditional medicines. About 50 % of the respondents indicated that they used non-conventional forms of medicine and said that they are not as effective as conventional drugs. All the respondents indicated that they only sell their animals when they need money.

When farmers were asked for their perception of a healthy animal, 70% of the responses indicated that a healthy animal has a normal gait and the other 30% indicated that a healthy animal is best noticed by exhibiting a good appetite. The respondents also indicated that if they discovered an animal that was not appearing healthy according to their perception they consulted a veterinary officer at Gezani Animal Health Centre.

The respondents also indicated that they do not dose their animals except for one farmer who said he learnt the art of dosing at a farm in Masvingo where he used to work. The respondents indicated that dipping their animals is mandatory and is enforced by the Department of Veterinary Service for a fee of US$ 1 per year.

Stock theft in Gezani

The Zimbabwe Republic Police officer at Gezani police post explained that the stock theft cases have been increasing since 2006 after the opening of the Mozambican cattle market. Figure 1 shows the incidences of stock theft in Gezani for 2008 and 2009. Statistics for periods earlier than 2008 were not available.

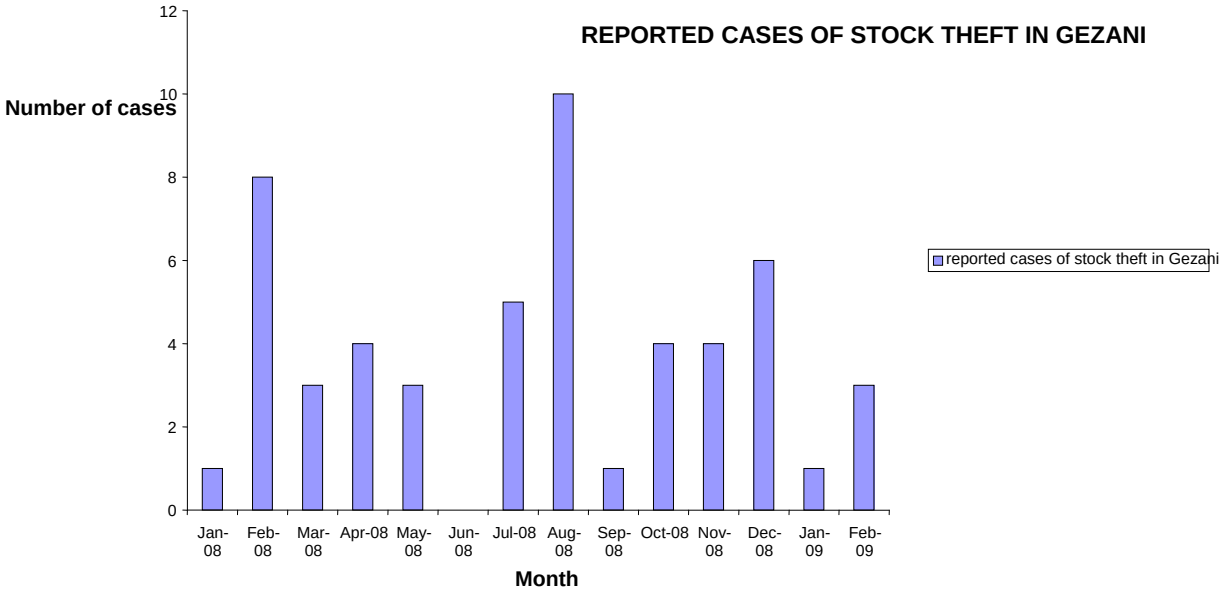


Figure 1: The number of case reported from January 2008 to February 2009

As can be seen in the graph in Figure 1 there are a significant number of stock theft and cattle rustling cases in the area. As a way of fighting stock theft the Zimbabwe Republic Police launched a campaign to raise awareness among the community members on the consequences of stock theft. Farmers are urged to report cases of missing animals as soon as they notice them because cattle rustlers are fast. Such timely reports leads to quick investigations and follow ups that increase the chances of recovering the cattle before they are crossed into neighbouring Mozambique. During our field visit to Mozambique, May 2009, a herd of branded cattle were seen on the road side. As cattle are not branded in Mozambique, it was presumed that these were stolen cattle. Furthermore, there was a case we heard at the border post concerning a group of Zimbabwean women from Malipati, whose cattle had been stolen and they followed them up into Mozambique. They found the six cattle in a kraal just a few kilometres over the border. Unfortunately, because of the traditional bureaucracy they faced difficulties in recovering all the cattle and only managed to bring four back. Two cattle had to be left behind as payment to the traditional authorities (even though they had been stolen!).

Only quarter of the reported cases turn out to be cases of cattle straying away, but the majority of the cases will be true stock theft cases. Cattle rustlers are non-selective and can drive away the whole herd. Sometimes cattle are recovered well before the farmer finds out that his or her cattle had been stolen. Most cattle are stolen from the pastures since the animals are left unattended.

Apart from stock theft cases of poaching are also reported an example being a case of four Zimbabweans caught in Gezani after illegally hunting in Kruger National Park in South Africa.

Infra-structure and social services

Water, sanitation and energy

All farmers had access to clean drinking water, with 22.3% of the farmers accessing borehole water and 77.7 % accessing water from protected wells. A third of the population had no access to a toilet facility and relied on the bush system. The other two thirds of the population had access to a Blair toilet. As for fuel and energy requirements every household relied on the nearby mopane forest for fuelwood.

Services

Some people travel long distances to get services such as secondary schools, banks, clinic etc as shown in Figure 2.

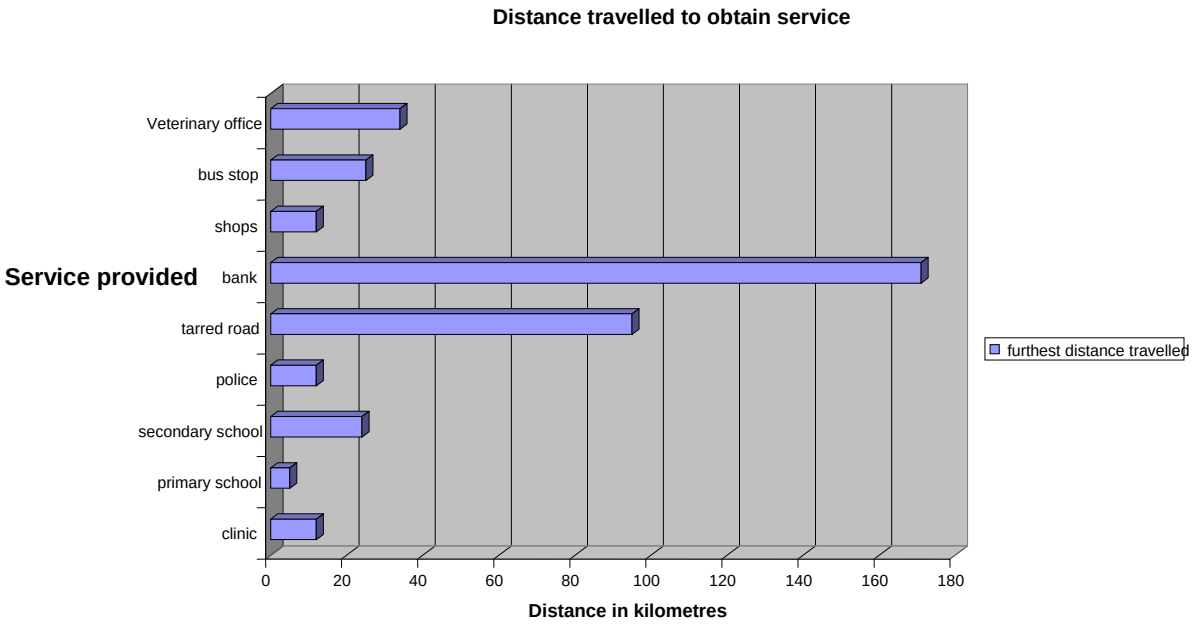


Figure 2: Maximum distance travelled to obtain service

Social networks, voluntary work and outside assistance

According to the nursing sister from the local Gezani Clinic the only social networks that exist in Gezani are churches, including Apostolic Faith Mission, Roman Catholic, and several apostolic sects. There used to be an HIV and AIDS discussion forum but it has since stopped operations due to lack of commitment by members. HIV and AIDS cases are increasing from 1% of pregnant mothers testing positive for HIV in 2007 to about 5% in between February 2008 and February 2009. This is well below the national average, which was 18.1% in 2006.

Villagers often volunteer to offer services such as being village health workers, chloroquine holders, and health masters. Village health workers are volunteers trained to educate the community about some critical health issues such as hygiene and sanitation. Chloroquine holders are volunteers trained to treat malaria at household level; they keep the medication with them at their homes. Health masters are usually headmasters who volunteer to work with the clinic to teach primary health matters to students and their parents, and they also keep medicines at their offices.

According to the headmaster, community members rarely participate in voluntary work even with the schools. It is very difficult to organise and coordinate them to participate in simple projects such as brick moulding for a Blair toilet construction for the local school.

Most farmers said that they had difficulties in accessing extension services and other government services and programmes like the '*maguta*' programme for farming input provision.

Most of the respondents indicated that they were not benefiting from any government programmes; they indicated that there were no government programmes running at the moment such as food projects, HIV and AIDS projects, food for work, agricultural inputs schemes and educational projects. The same response was given concerning donor developmental projects, no project was running and none has been done there as far as most of them could remember. The only programmes that most of the respondents (about 50 %) participated in were donor aid programmes, in particular in the form of food handouts from PLAN International.

The community gets support from non-governmental organisations such as Plan International and Sengwe Vamanani Crafts Association (SEVACA). Plan International provides humanitarian food aid and SEVACA pays school fees and buys books for disadvantaged students such as orphans. There is also a government programme for disadvantaged children that provides for their education from the government known as the Basic Education Assistance Module (BEAM).

Plan International has been providing food handouts to disadvantaged members of the community such as resource poor farmers and child headed families. Cases of child headed families are due to migrant labour to neighbouring South Africa as well as to AIDS deaths, and the children especially the girl child is left behind and relies on remittances.

There a are few cases of terminal illnesses that the clinic is aware of but there could be a lot of cases that are not recorded because most community members do not consult the clinic when they are ill but go to traditional healers instead. The commonest terminal illnesses are immuno-suppressing disease (ISD) related.

Every month there are three to four cases of injuries that result from civil conflicts that are treated at the clinic.

Although active at the local level, animal health workers and extension workers usually fail to reach some farmers because of mobility problems due to lack of transport.

Most institutions that provide serviced to the community lack effective monitoring and evaluation of their projects. An example is the FAO-funded Newcastle vaccination programme that did not reach the intended beneficiaries, although the case had been reported in time, and almost all their birds had died.

Human wildlife/ livestock interactions

All the respondents indicated that they relied more on domesticated animals for meat compared to wildlife. Most of them indicated that they are aware of the fact that they are close to a National Park, Gonarezhou, but indicated that they have never been there. They however indicated that their livestock were sometimes attacked by predators such as hyenas and leopards and also that their crop fields were sometimes frequented by kudus, elephants and baboons. 43 % of the respondents indicated that they had their livestock attacked by wild animals during the last rainy season (2008-2009).

The farmers indicated that they agreed to the following statements:

- Wildlife is natural part of their environment
- Wildlife is a benefit from the environment to the community and self
- Wildlife preys on humans and livestock
- Wildlife destroys crops
- Wildlife is a good source of meat
- Wildlife is a good source of biltong
- Wildlife can contribute towards tourism and development
- Wildlife is a good source of conflict

The majority of farmers indicated that they disagreed to the following:

- Wildlife is a nuisance to the environment
- Wildlife is non-destructive
- Wildlife is a source of wages

In the case of wildlife transmitting diseases to human beings, 22% of the farmers disagreed with this. All except for one respondent were aware of the wildlife rules and regulations and the most common regulation that they indicated was the one that forbids poaching and unauthorised hunting that is enforced by the National Parks personnel. They also indicated that such regulations are necessary and that their community observes these regulations.

A third, 33.3%, of the respondents were not aware of the Great Limpopo Transfrontier Park. All the respondents strongly indicated that they were not willing to give up their land for wildlife production even in the face of attractive compensatory packages and resettlement to other areas.

3.2 MALIPATI

Introduction

A total of 45 structured questionnaires were randomly administered to farmers in the community. In depth interviews were held with key informants, including farmers and a number of focussed group discussion were carried out with farmers, and members of the irrigation scheme.

Malipati is in Ward 15, Chiredzi District, and is located 170 km south of Chiredzi. It borders Gonarezhou National Park to the east. Ward 15 has 20 890 households.

Ward 15 ethnic groups

Ethnic group	**% of population**
Shangaani	72%
Shona	15 %
Ndebele	7%

Venda	3%
Ndau	3 %

The area is in Agro-ecological region 5 and receives an average annual rainfall of 450mm.

The general area of Malipati has the following villages:

Name of village	**Number of Households**
Samuel	89
Manzini	117
Bhazela 1	86
Bhazela 2	107
Mafunjwa	52
Mlekwani	68
Ngwenyeni/Wachi	67
Haphama	49

Socio-economic issues

Just under a quarter, 24.5%, of the households are headed by women of whom 15.6 % are widows. The remaining 8.9% of the households were *de facto* female headed households as they were headed by married women whose husbands stayed in neighbouring South Africa and have not returned since they left more than five years ago in some cases. The majority of residents were born in the area.

Education

Despite the presence of both primary and secondary schools in the area, the levels of education are generally low within the population.17.5% of the adult population did not go to school and almost 35% only went to school up to the primary school level, 33% up to secondary school level. The information about the levels of education within the community is summarised in Figure 3:

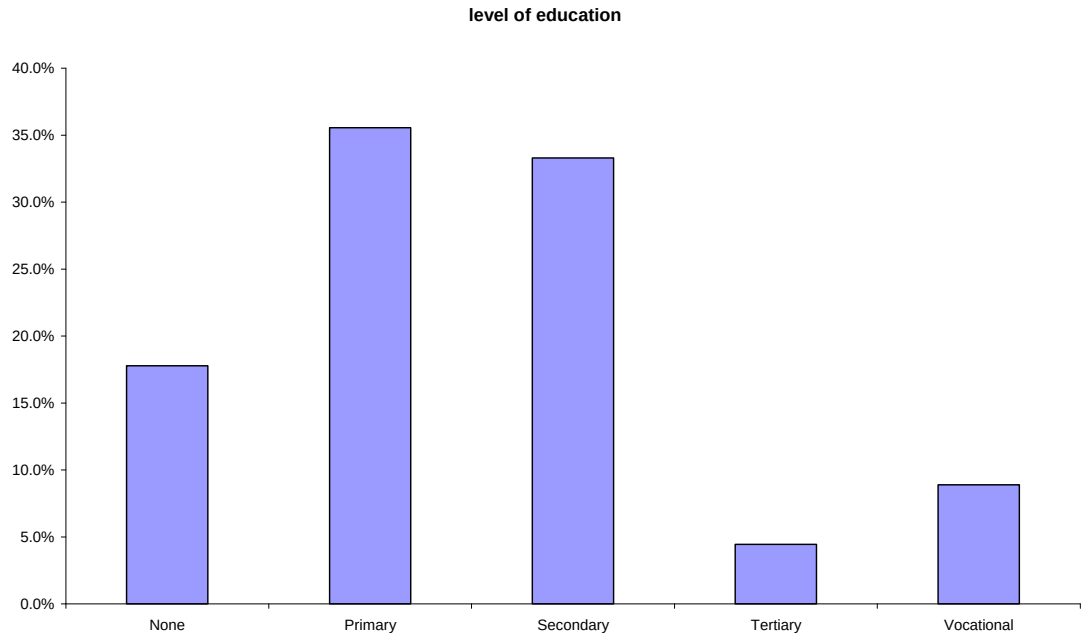


Figure 3: Level of Education

Income

The major source of income for the people according the survey was livestock sales, most of the farmers rely on selling their animals especially cattle on the local market so that they obtain money to meet their household requirements. This is particularly true for most farmers because about 75% of the population are farmers and the other 25 % rely on other activities such as building houses, toilets and sinking wells.13% of the population have no other source of income other than livestock sales. The other sources of income included beer brewing, selling of farm produce and part-time jobs (*maricho*). The details are summarized in Figure 4:

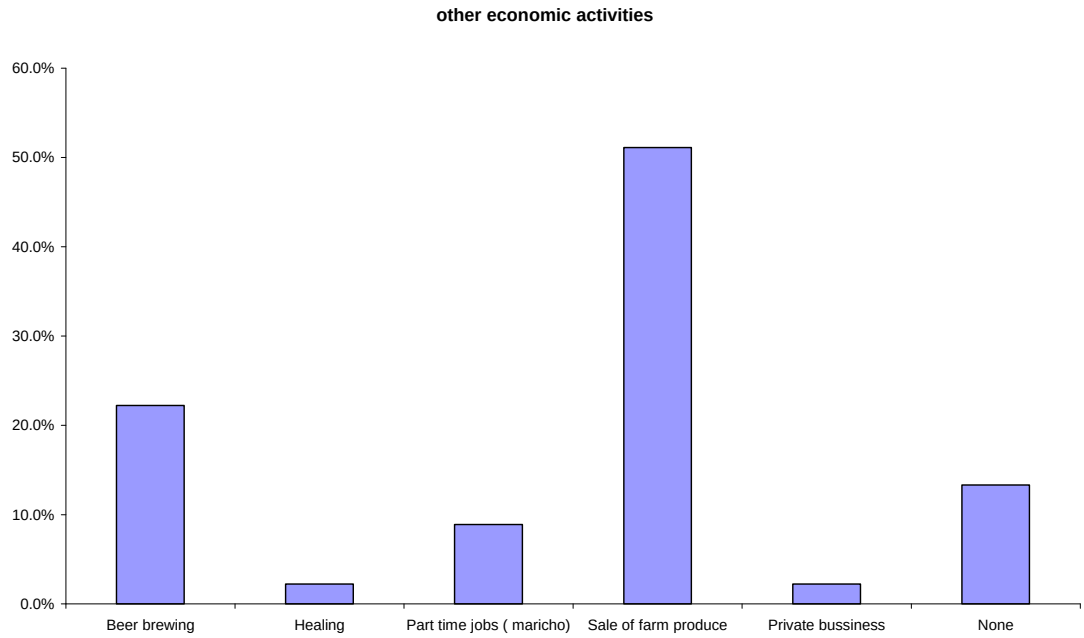


Figure 4: Economic activities

Energy, water supply and sanitation

All the households depend on fuel wood as the main household energy source for all the cooking and heating requirements at household level although 22.2% of the households had used solar energy mainly for lighting and playing radios.

66.7% of the households had access to borehole water and 2.2%, 6.7% and 4.4 % used dams, rivers and unprotected well respectively as their main water sources (Figure 5).

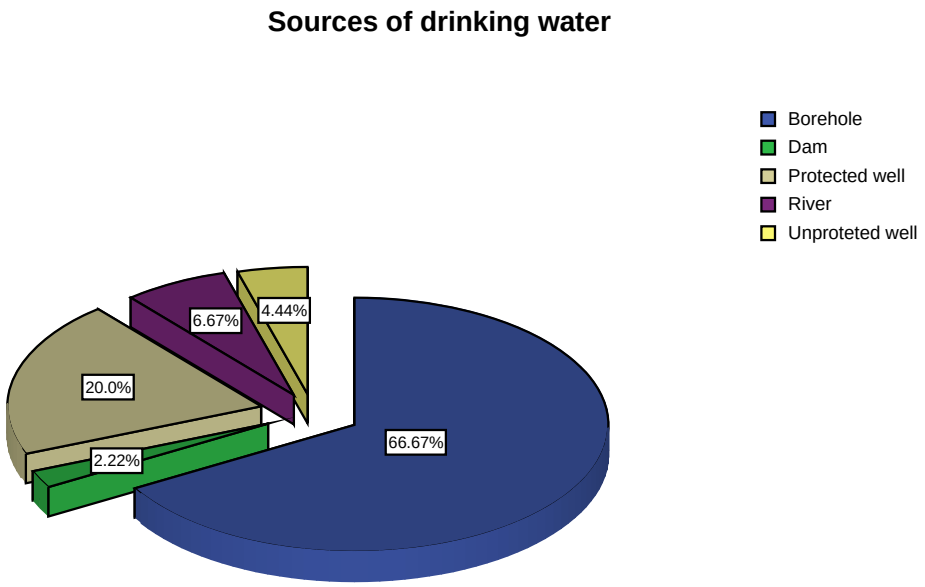


Figure 5: Sources of drinking water

Similar to Gezani, 66% of the households had a Blair toilet which happens to be the standard sanitation facility in the area. The other 34% did not have toilets and relied on the 'bush system'.

Assets

All the households own at least one hoe and water storage containers.77% of the households owned animal drawn ploughs, 67% owning at least a wheelbarrow to help carry heavy loads required in the day to day running of the homestead.

Others household assets include solar panels; scotch carts radios, motor vehicles and bicycles. The most interesting thing to note about household assets is the fact that more than 93% of all the households owned a bicycle. Bicycles are a particularly important mode of transport in the area and most of the bicycles are imported into the country from South Africa. A summary of the household equipment and assets is given in Table 1.

Table 1: Household assets

Household assets	
Scotch Cart	80.0%

Bicycle	93.3%
Plough	77.8%
Wheelbarrow	66.7%
Radio	17.8%
Mobile phone	17.8%
Solar panel	22.2%

Labour

Weeding was regarded as the most labour intensive activity. A summary on labour intensive activities are given in Figure 6. The activity with the larger % is ranked the most labour intensive activity. Household chores such as fetching water, and cattle herding were also considered as being labour intensive.

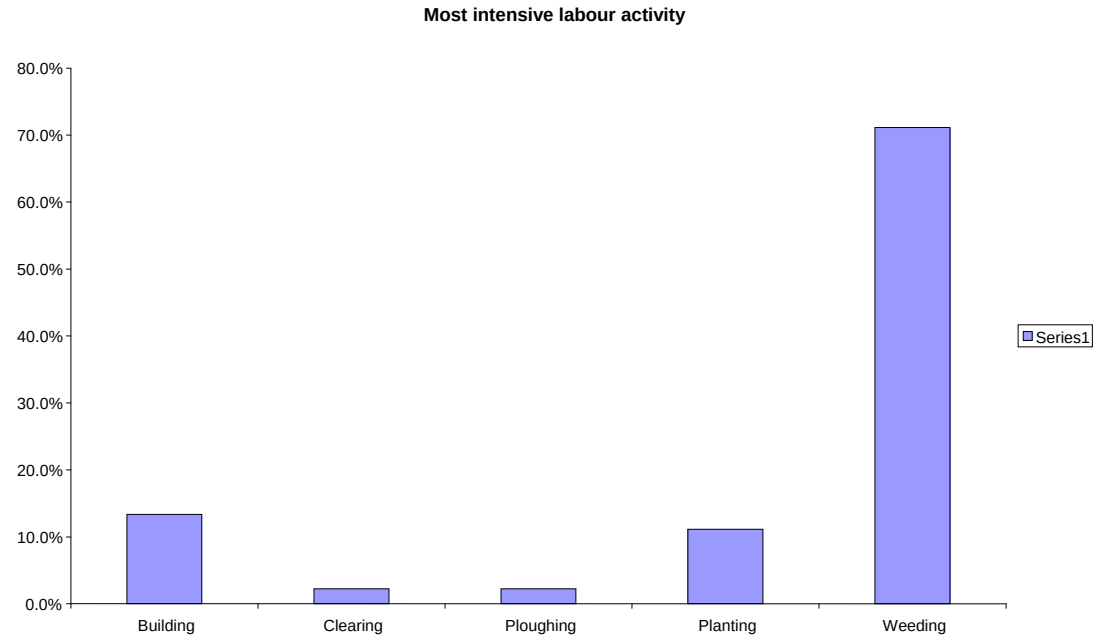


Figure 6: Intensity of labour activities

Household livestock details

Livestock numbers

It was noted from the survey that in general farmers now owned *(at time of interviews, 2009)* more cattle compared to 2002. This was supported by the fact that in 2002, 19 % of the farmers had no cattle at all compared to 2009 when 53 % of the population owned cattle whose herd sizes ranged between 1 and 10 cattle and were considered to be the smallest herds. The largest herd in 2002 had 100 cattle and in 2009 same farmers had more cattle with largest herd having 141 cattle.

Table 2: Cattle numbers

	Cattle numbers in 2002	Cattle numbers in 2009
No cattle	19.0%	0%
1- 10 cattle	38.1%	53.5%
11-20 cattle	20.9%	18.6%
21-49 cattle	17.0%	23.3%
Over 50	5.0%	4.7%

Sources of livestock

71 % of the farmers indicated that they bought all their cattle, 16% inherited them from their parents, and 4% obtained their animals from bride prices when their daughter or sisters get married. 6.7 % of the farmers obtained their animals as payments for their services such as building of houses, sinking of wells and keeping a herd of cattle for another person (Figure 7).

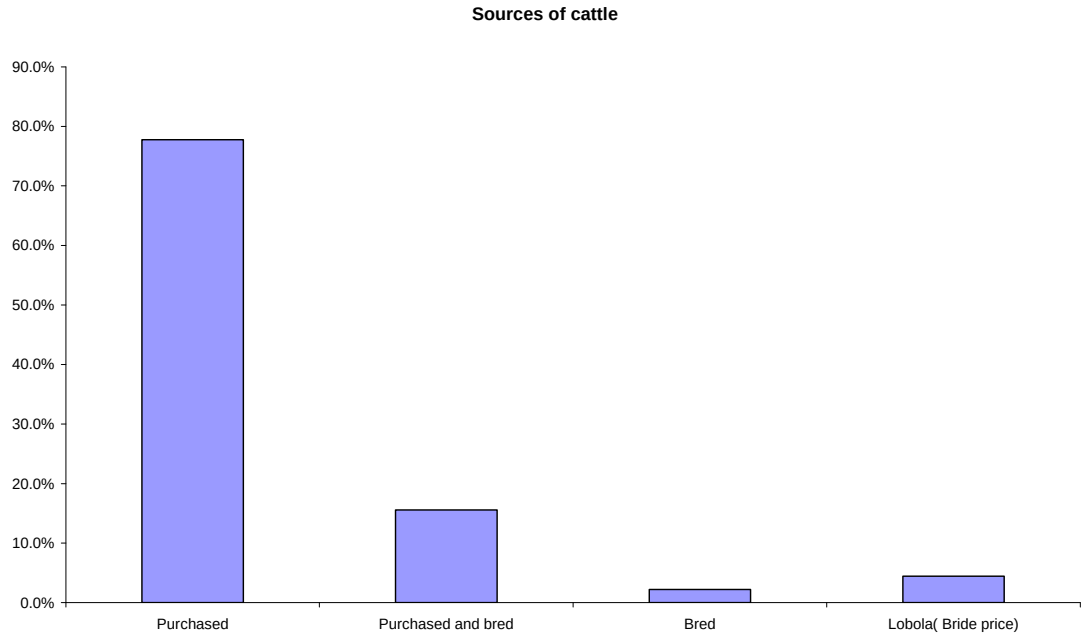


Figure 7: sources of cattle

Uses of livestock

The farmers consider cattle to be their insurance. They mainly rely on investing their monetary and labour resources into buying cattle so that they re-sell the cattle whenever they need cash. The major uses of cattle include drought power, milk production, cash sales and occasionally for meat.

Table 3: Uses of cattle

Use of cattle	
Cash sale	6.7%

Drought power	13.3%
Drought power, Milk, Cash sale and Meat	80.0%

Most farmers desired to have larger herds of cattle. 77 % of the farmers desired to own herds of sizes between 10 -50 animals and only 2.2 % wished to own more than 500 cattle. The farmers however sighted a numbers of problems that limit them from reaching their desired targets. Their major stumbling block in attaining their desired herd sizes were animal diseases, lack of grazing in Malipati, lack of money to buy breeding stock and theft (Figure 8). Breeding problems were sighted by 2.2 % of the farmers. The desired herd sizes and limitations to reaching the desired herd sizes are summarized in Table 4.

Table 4: Desired herd sizes

Desired herd sizes	
10-50 cattle	77.8%
50-100 cattle	13.3%
100-500 cattle	2.2%
More than 500 cattle	2.2%

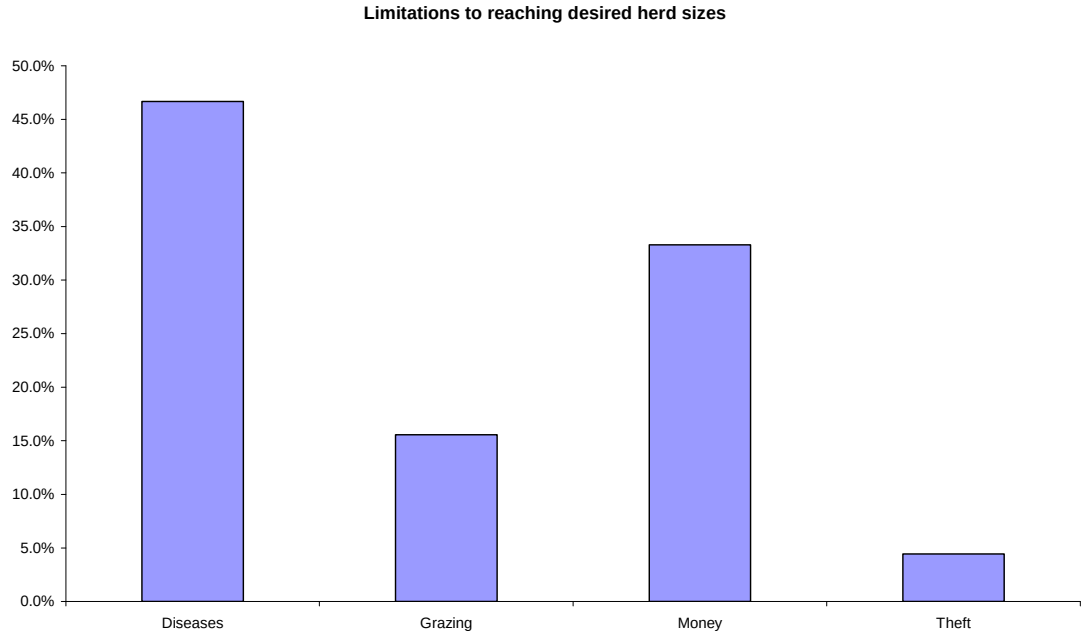


Figure 8: Perceived limitations to herd size

75% of the farmer did not own donkeys in 2002 and the remaining 25% owned between 2 and 26 donkeys. All the farmers that had donkeys indicated that they all had bought and bred their own donkeys.

37.8 % of the farmers did not have goats in 2002 and 76.5% of the population less than 10 goats. The remaining 24.6 % goat flock sizes ranged from 11-50. In 2009 the largest goat flock had 55 goats even though 8.9 % of the population still did not have goats (Figure 9).

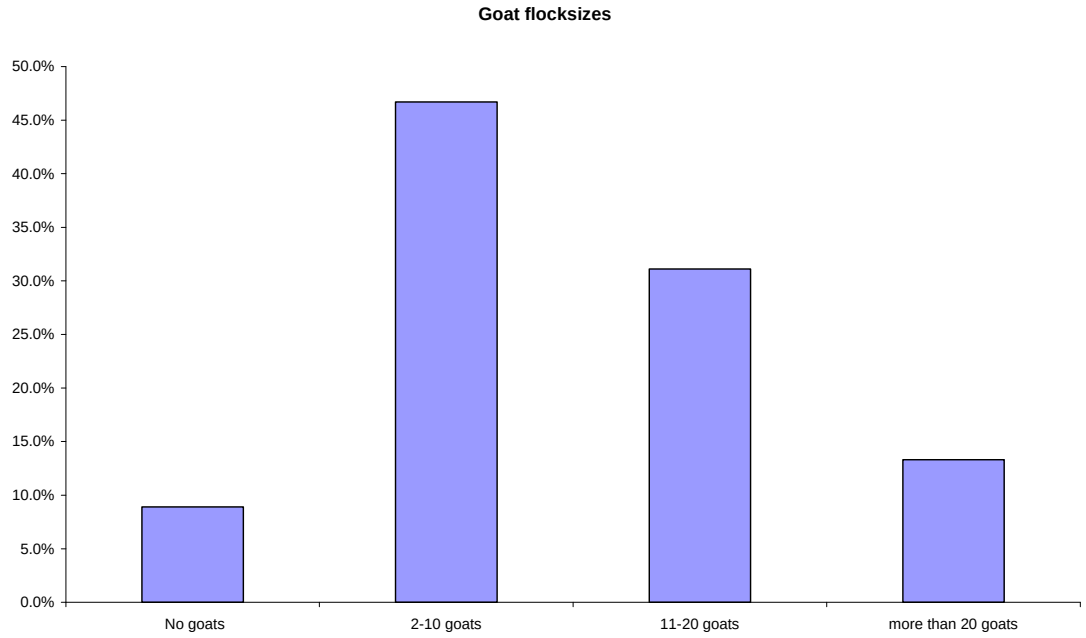


Figure 9: Goat flock size in 2009

93% of the farmers indicated that livestock production was the most productive enterprise that contributes significantly to their household food and monetary demands. 64% of the farmers preferred using draught power for tillage, 33% said they preferred using tractors despite the fact that they do not have the tractors.

Livestock grazing and nutrition

The rangelands are dominated by a nutritious annual grass *Urochloa mosambicensis* that is only available during the wet seasons. The rangelands also have other grass species called *Aristida* that is not palatable when dry because they have spiky awns.

Grazing is one of the major differences between Gezani and Malipati communities. While Gezani has sufficient grazing land, in Malipati, grazing land is a severely limiting factor to the numbers of cattle. In Malipati, 58% of the respondents indicated that grazing was not adequate while 42% indicated that they had no grazing problems.

Community mapping

A community mapping exercise was conducted at Malipati primary school on the 13th of April 2009. This exercise was done by a group of 6 individuals selected from within the larger focus group. During the exercise the farmers drew a sketch map of their community indicating, all roads, buildings, kraals, grazing resources, water resources and fields. Their map accurately

indicated all roads, tracks and homesteads when compared to an actual map of the area and the researcher's observations after an attempt to use the map to tack some of the features.

The Malipati area does not have demarcated rangelands to graze their animals and their animals depend on grazing found around homesteads and fields. The extent of such area was a little exaggerated on their map; the pastures appear to cover a larger area on the map than it is on the ground. The fields were given smaller areas on the map than there actually is on the ground. This suggests that the farmers perceive pastures to be more important to them than cropping fields. Important feature that they regularly use such as kraals, the dip tank are also shown on the map.

Grazing and Gonarezhou National Park

In the Malipati community 71% of the households graze their animals in the Gonarezhou National Park during the dry months of the year when grazing is limited. After being asked why they did not include grazing areas on their community map farmers told following story which illustrates the grazing problems faced in Malipati:

> '*Before the inception of the Gonarezhou National Park, grazing was adequate, in fact it was more than enough. Our cattle never had feed problems. The problem began with the establishment of the Park. Before they put their veterinary fences enclosing our grazing in their Park we never knew of grazing problems. Now the pastures are not enough, in fact we have no real grazing areas. Our cattle rely on grazing around our homesteads, fields where we leave bush and grass growing. Also important to us here as grazing resources are the uncultivated fields whose owners have since left for work in the nearby South Africa'.*

In contrast to Gezani, about half of the farmers in Malipati provide supplementary feed to their livestock during the times when there is no grazing. Those who provide supplementary feeding mainly feed stover collected from the fields after harvest. They collect the stover and store it at their homesteads and feed the animals when need arises.

Livestock management health issues

Animals health issues were of great concern to the farmers who very keen to know more about livestock health issues. Most of the farmers indicated that they could tell when their animals are sick. They pointed at indicators such as loss of appetite, loss of body condition, dullness of the animal and the general appearance of the animals, these perceptions are summarised in Table 5.

Table 5: Farmer perception of a sick animal

Farmer perception of a sick animal	
Loss of appetite	20.0%
Loss of body condition	44.4%
Dullness	22.2%
Ruffled fur	13.3%

The common diseases that were reported by the farmers to have infected their cattle at one point in time include, Foot and Mouth Disease (FMD), Anthrax, Blackleg, Lumpy Skin Disease (LSD), and tick borne infections such as redwater, heartwater and gallsickness. 44 % of the farmers did not know if their goats fell ill or not, they indicated that they had no health problems with their goats. Nevertheless, 33% of the farmers indicated that their goats did have health problems and died of unspecified illnesses. Figures 10 and 11 summarize these animal health issues.

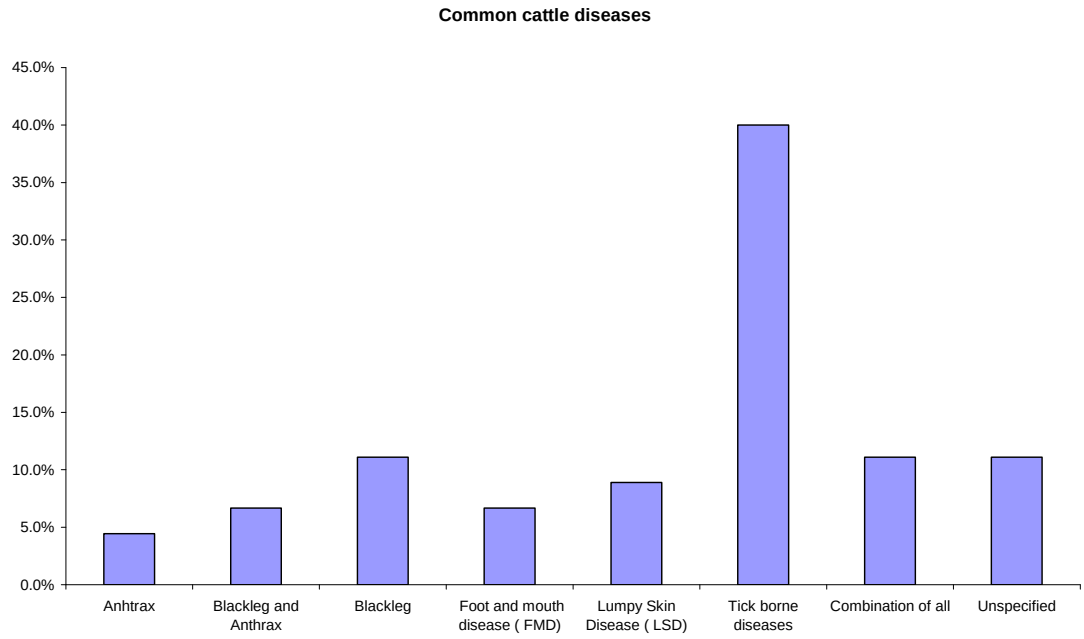
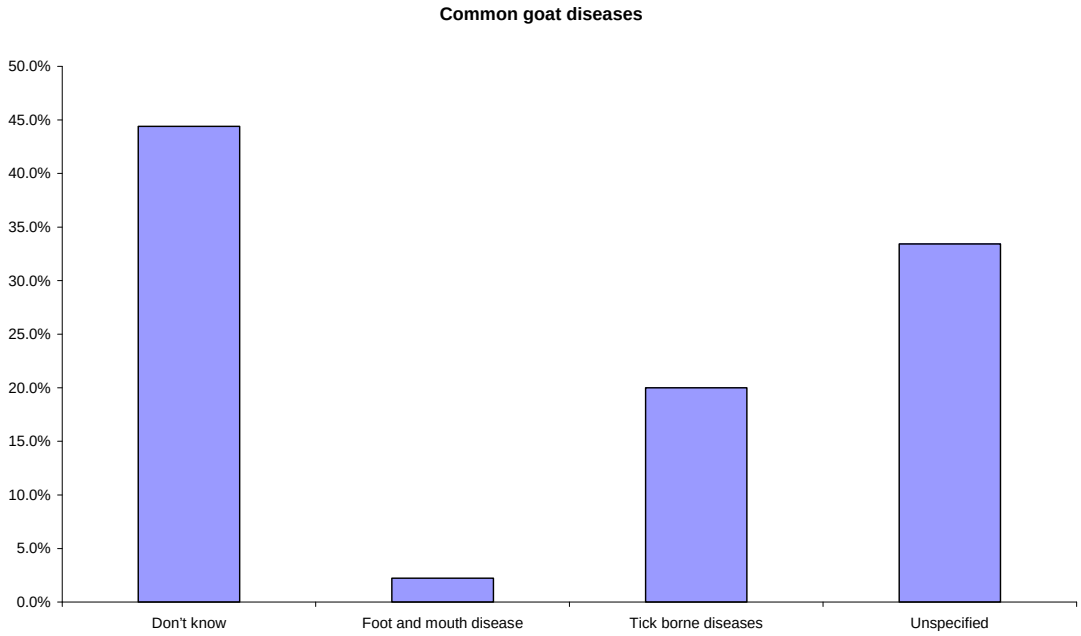


Figure 10: Common cattle diseases

Figure 11: Common goat diseases


Common goat diseases
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Don't know
Foot and mouth disease
Tick borne diseases
Unspecified

F

Livestock and health issues were discussed during a meeting with local farmers including a women farmer, who chaired the discussion. It was noted that there has not been any dip chemicals for more than six months, although dipping is supposed to be done once a month. Farmers indicated that they all kraal their animals in fear of predators and theft. Farmers dehorn their animals as a management routine, it was also noted that most farmers knew about dosing the animals but thought that it was not necessary. During the discussion the issue of dosing was discussed in depth and farmers acknowledged that they have been ignorant and need to dose their animals. The farmers even proposed that using their proceeds from the irrigation scheme they will also buy Antihelmintics (worm remedies) and dose their animals. It was also suggested during the meeting by one of the farmers that they may have an 'Animal health club' whereby they will collectively buy drugs and chemicals for their animals and manage the health issues collectively.

Ethno-veterinary medicine

The focus group discussion also centred on the use of non-conventional animal health management practices that are based on local knowledge (ethno-veterinary medicine). All the participating farmers highlighted that they at times use the ethno-veterinary practices. They cited the erratic supply and high cost of drugs as the main driver to the practices. It was also noted that farmers were not willing to share information about ethno-veterinary medicines. The general perception with the farmers was that such practices are not orthodox and could be illegal. They however shared information on such practices on small pieces of paper that were written in secrecy or during an individual interview with the farmer.

The most commonly used practices involved the use of aloe and soot. The farmers expressed that the concoction is effective against a lot of disease such as *Tingari* (stiff sickness), foot and mouth disease, fever and wounds and internal parasites. Table 6 explores some of these practices as given during the focus group meeting:

Table 6: Ethno-veterinary medicine practices

Remedy	**Animal species treated**	**Disease condition**
Chin'ai (soot)	Cattle, goats	Wounds and internal parasites
Chin'ai + Gavakava Mix the two in water and drench an animal showing signs of fever and any animal that is drooling	Cattle	Fever and drooling
Gavakava (*Aloe* spp) Mix with water and dose	Cattle, goats	Internal parasites
Muvengahonye Crush bark and roots then mix with water and	Cattle	Wireworm and roundworm

drench animal		

Foot and Mouth disease (FMD) is endemic in the areas around the Gonarezhou National Park because of the marked wildlife (buffalos and wildebeests) and livestock (cattle) interaction. An interesting special remedy was used for treatment of foot and mouth disease cases during an outbreak. The concoction is given in the Box 1.

Box 1: Traditional treatments of Foot and Mouth Disease in cattle by Malipati farmers

Foot and Mouth Disease

*'A tree called **musvimwa** is used; the bark is taken, crushed and mixed with burnt **donkey dung**. The mixture is soaked in water together with **muvengahonye**; you then drench your animals or treat the sores on the infected animals after adding some salt'.*

The dip tank committee

The dip tanks are community property even though they are instituted and are under the jurisdiction of the Department of Veterinary Services. The Malipati dip tank committee is composed of seven members consisting of a Chair person, Mr Mpofu, his deputy, a Secretary, Mr Mazamini Chauke and his vice as well as a Treasurer and three committee members. The chair person and the deputy have the responsibility of coordinating the committee and chairing meetings, the secretary keeps record of all the animals and dip tank activities. The treasurer keeps track of the subscriptions and makes sure that everyone pays up. The duties carried out by the committee are to make sure that they acquire water for the dip tank and make some repairs on the dip tank and associated handling facilities. The committee also makes sure that farmers contribute money to finance the maintenance of the dip tank and handling facilities and to keep the area around the dip tank clean. All the farmers are supposed to participate in the maintenance activities and dip water replenishment. There is no water source at the Malipati dip tank, all the water is obtained from a river that is about 3 km away from the dip. Each member is supposed to bring at least 20 litres of water until the desired water level is reached. It is the duty of the committee to make sure that everyone participates equally and to punish or banish any offenders. The commonest way in which offenders are penalised is by not allowing them to dip their animals until they have done the omitted task

The Great Limpopo Trans-frontier Park

71 % of the farmers knew about the Great Limpopo Trans-frontier Park initiative. Of these, 29 % of the farmers considered the Park initiative to be an opportunity for them to get employment and to have their infrastructure developed in the process due to their proximity to the Park. 35 % indicated that the Park is not going to have any effects on their livelihoods. The remaining 36%

indicated that the Park initiative is going to be a constraint to them. They highlighted that the Park must not be close to their livestock because in is a sink for diseases such a Foot and Mouth Disease (FMD). Most of the farmers are also aware of the various wildlife related regulations. The most common regulation indicated by the farmers is the anti-poaching regulation that is known by about 80% of the farmers. 82 % of the farmers know that the major wildlife regulation enforcers are the National Parks people, while only 2.2 % think that it is the community's duty and the other 15 % do not know who enforces the regulations. This information is summarised by the following tables.

Table 7: Farmer perceptions about wildlife

Farmer perception of the GLTFCA	
Constraint	35.6%
Does not matter	35.6%
Opportunity	28.9%

Wildlife regulations known by farmer	
No herding in the park	8.9%
No poaching	80.0%
No snaring	6.7%
No trespassing	4.4%

Wildlife as a nuisance to the environment	
Strongly agree	28.9%
Agree	33.3%
Disagree	17.8%
Strongly disagree	20.0%

The farmers expressed different perceptions of and attitudes towards wildlife. In general most farmers regard wildlife to be a nuisance, they believe that wild animals destroy crops as well as transmit diseases to humans and animals. The farmers also generally believe that wildlife contributes towards tourism and development. The farmer attitudes are summarized in the table below:

Table 8: Farmer perceptions about wildlife

Wildlife as non-destructive	
Strongly agree	6.7%
Agree	24.4%
Disagree	42.2%
Strongly disagree	26.7%

Wildlife transmits diseases to domestic animals	
Strongly agree	40.0%
Agree	48.9%
Disagree	11.1%

Wildlife can be a source of wages	
Strongly agree	37.8%
Agree	40.0%
Disagree	20.0%
Strongly disagree	2.2%

Wildlife transmits diseases to human beings	
Strongly agree	17.8%
Agree	42.2%
Disagree	37.8%
Strongly disagree	2.2%

Wildlife as a source of conflict	
Strongly agree	40.0%
Agree	37.8%
Disagree	17.8%
Strongly disagree	4.4%

Manjinji Pan Conservation

The lowest point in Malipati in terms of altitude is the Manjinji pan. This makes it an important water source for livestock and becomes a very important resource to the farmers during the drier months of the year. The pan is surrounded by *Acacia* forest that supports a diversity of plants, birds and wildlife species. A locally-based non-governmental organisation, Southern Alliance for Indigenous Resources (SAFIRE) embarked on a project to fence off the area but efforts were derailed by an administrative conflict with National Parks.

Programmes and interventions

Malipati has been a major centre of attention for the donor world and there has been a history of intense Non-Governmental Organisation activity, examples being World Vision Zimbabwe, SAFIRE, CEVACA, and PLAN International. Researchers and Government Departments have also contributed significantly to the development of some important infrastructure in Malipati that remains under the management of the community when projects are concluded. The farmers organised themselves into management committees that manage all the communally owned infrastructure and service areas. The dip tank is among such infrastructure.

Southern Alliance for Indigenous Resources (SAFIRE)

SAFIRE is one of the most important non-governmental organisations currently operating in Malipati. The core business of SAFIRE is to deal with conservation issues around communal farmers and sustainable agriculture to enhance livelihoods. SAFIRE's activities in Malipati were related by the project assistant officer.

Non timber forest resources protection

SAFIRE advocates for the conservation of non timber forest resources. An example is the indigenous palm (*Murara*). The plant is naturally abundant in the South-east Lowveld but there were fears that the plant may face extinction due to overuse since it was used to make hand crafted baskets, hats and handbags. These artefacts are then sold at a cheap price on the local market. This use alone poses a threat to the survival of the unique forest resource. SAFIRE took the initiative of promoting the sustainable use of the palm by finding more lucrative markets for the artefacts that pay a better price than the local markets. This was meant to minimise the destruction of the plants as locals would perceive it as a valuable resource that needs to be used sparingly. The project assistant officer indicated that the project was a success since the crafters would only need to sell two or three artefacts in several months compared to 5-10 artefacts per week on the local market.

Manjinji irrigation scheme

The Manjinji irrigation scheme is located 3 km from Malipati business centre. The irrigation scheme was a Rhodesian government initiative in the 1960s and it operated well until 1970 when operations were disturbed by the liberation war. The irrigation scheme was reopened by the Zimbabwean government in 1980 but collapsed again in 1999 due to floods (Cyclone Eline). The scheme was then given a new lease of life and expanded by funds from the Liechtenstein Development Services. The project was administered and managed by SAFIRE.

The purpose of the irrigation scheme is to alleviate poverty and to improve the livelihoods of over 120 families. Major focus was placed on the cultivation of the following crops under

irrigation in the drought stricken region: maize, wheat, groundnuts, cabbages, tomatoes, onions, sugar beans, cowpeas, round nuts and beetroot.

The non-governmental organisation ban by the Zimbabwean government between April and August 2008 came at a time when all the horticultural products within the scheme were ripening. It was the responsibility of SAFIRE to help farmers by finding markets in the nearby towns and ferry the produce to the market. This posed a major challenge to the farmers in marketing their produce. The farmers ended up sun drying all the produce and sold them locally.

Farmers in the scheme exchanged grain for livestock such as goats, and there are a number of success stories and testimonies that have come from the scheme. The major challenge that the farmers could face in the future is to continue with the irrigation scheme under their own management when SAFIRE concludes its operations in December 2009. In anticipation of this SAFIRE has trained farmers on business management and leadership skills.

SAFIRE also injected US$ 500 into the scheme as maintenance seed money and the farmers in the scheme each pay US$ 10 every 6 months into the maintenance fund. The funds were managed by a farmer led management committee.

In 2008-9 one of the best farmers was Mrs Judith Bele, who on her 0.1 hectare plot in the scheme produced the following output:

Vegetables	US $ 30
Tomatoes	US $20
Carrots	US $20
Beans	20 kgs for household consumption
Onions	US $10
Maize	US$30 + 350kgs for household consumption

The Manjinji stories: the importance of livestock

These stories are the outcome of a focus group discussion meeting conducted with a group of farmers, mostly women, at Malipati primary school. The group was composed of farmers in the Manjinji irrigation scheme. The importance of these stories is that they throw light on the relationship between the irrigated garden group activities and the acquisition of livestock.

Farmers in the scheme invest their money into buying livestock. Livestock in Malipati played an important role as a ‘bank’. Farmers would buy goats or chickens and keep them to maturity, breed them and sell some whenever they need cash. Livestock plays an important role in the household food and financial security. Unfortunately, in 2008 farmers who had invested their irrigation scheme proceeds into chickens lost out to the Newcastle outbreak that hit the area during the peak of the rainy season.

The Manjinji Irrigation Scheme is a **s**ource of income and food:

- The crops grow in the irrigation scheme go along way in providing food to meet the household food requirements. Farmers grow maize under irrigation, beans and vegetables. The products are also sold to generate income for household use.
- Farmers have also been able to sell farm produce and acquired livestock with the proceeds
- Farmers also get money for school fees
- The scheme also has places reserved for orphans to cultivate, grow crops and earn a living

Some farmers who declined to be named indicated that they have not been successful because they did not commit their labour to weeding, manure application and following the recommended agronomic practices.

Box 2 below illustrates the success stories of three women farmers, who are all widows. They all applauded the irrigation scheme noting that it was an important component of their livelihoods.

Box 2: Manjinji success stories

Amai Ncube

"I am a widow; my husband died six years ago. I have children of the school going age. My story is that, ever since I joined the scheme and became a dedicated farmer, I am building up wealth. I bought 10 hens just in one year; I sell a bird every time I need money, now I have over 70 chickens"

Ms Dube

"The irrigation scheme is our lifeline, I don't feel like a helpless widow any more, and using the proceeds from the irrigation I have bought 3 goats. I get money for school fees, we also have a women club where we buy blankets for each other, and the money comes from the scheme"

Ms Mbagi

"*I am a widow as well, but look I am on my way to having cattle of my own, just this year I bought a calf for myself after selling vegetables from the scheme, isn't that a good sign? I will never leave the scheme!"*

The World Vision experience

In the past, World Vision had played a prominent role in the development of Malipati. The story about World Vision was obtained from a Community Development Board member and AGRITEX official, together with former World Vision community development workers in a joint discussion meeting at Malipati Thlakakani-Sengwe Development Association (TSDA) offices.

World Vision Zimbabwe came to the Malipati area and established what was known as the Development Assisting Centre in 1987. Their primary business was to improve the standards of living for the Sengwe community by teaching people sustainable use of their resources. World Vision's first projects under the Assisting Development Programme included child

sponsorship and construction of clinics, classroom blocks and toilets. In the Child Sponsorship Programme, the community workers would identify disadvantaged children within the community and link them with foster parents, or child sponsors abroad especially in Canada. The sponsors would then send money and goods to help the community and the children. Such a project has seen the construction of classroom blocks at schools, construction of Waiting Mothers' Shelters at local clinics, construction of the Pahlela and Samu clinics. About 200 children benefited from this project at Malipati.

The next project was the water and sanitation project, whereby World Vision drilled boreholes and established nutrition gardens around those boreholes after the 1992 drought. World Vision also trained some 'pump minders', who were local people responsible for the maintenance of pumps. They also donated the maintenance kits. At the time of the interview only 2 out the 5 boreholes drilled were still functional and none of the maintenance kits were still intact.

The next projects that were done by World Vision were Income Generating Schemes. The projects included construction of a guest house in 1998, the guest house was meant to raise money by accommodating visitors. The project also bought a tractor, grinding mill and two 8 tonne trucks. The money generated from these projects was managed by a local management committee composed of villagers and stakeholders that were elected by the community members. This management committee saw the birth of the Thlakakani-Sengwe Development Association (TSDA) when World Vision concluded its projects in 2005.

The TSDA's responsibility was to continue with the management of the income generating schemes and continue with community development work. Unfortunately when World Vision completely phased out in 2005, all the assets were auctioned to TSDA including office furniture, this wiped out most of the money that the projects had raised.

According to the TSDA constitution, a committee is supposed to have a 3 year long tenure of office. However, it was noted that the current one has not been changed since inception in 2005. The committee has managed to train two school teachers and constructed 10 Blair toilets.

The restocking exercise

During the 1992/93 drought a lot of farmers lost their cattle. World Vision then embarked on a restocking exercise where by the community would identify farmers who were left with virtually no cattle at all. The beneficiaries where divided into groups of 5 farmers. Each group was given two heifers that would rotate around all the farmers. The first beneficiary would give the cow to the next farmer after it raised a calf for him. This would continue until all the farmers had equal chances of raising calves from the cows. At the end of the breeding rotations the cow would go back and becomes a property of the community development committee. This project was successful in ensuring that the resource poor farmers have cattle. The major challenge that came with the project was that of conflicts among farmers as a result of some farmers failing to pass on the cow in time. This also had problems with some farmers losing some animals to diseases. In this scheme farmers were trained on the basic livestock management issues.

Summary of Zimbabwe sites

In general the Malipati and Gezani communities are not very much different. The main difference is in their spatial positioning with respect to Gonarezhou National Park. Malipati

shares a border the Park and Gezani is at most 50 km from the Park. Another important difference is that Gezani still has rangelands that are available for animal grazing yet Malipati does not have such rangelands. Some farmers in Gezani did not even know that they live near a National Park and were not aware of the Great Limpopo Transfrontier Conservation Park. In both communities the farmers indicated droughts and floods as the major hazards they encounter apart from the common issues of wildlife attacking their livestock.

3.3 MACARINGUE

Introduction

In Macaringue, a total 8 group discussion were carried out, one especially with the main (in terms of number of cattle) livestock keepers from all 6 settlements that comprise Macaringue village, where a total of 17 livestock keepers have participated. The other 7 group discussions were done with female and males separately representing the households of each settlement.

In total 79 people participated in the group discussion. Those were randomly selected from the list of household of the village. All the discussions were done during the afternoon as in the morning the participants had to carry on their field activities. Various participatory tools were used to better explore and understand different issues discussed in the groups.

For the Questionnaire**,** 10% of the total household (427) (see Table 9) was planned to be interviewed, however, only 32 was in fact possible, due to various reasons: absences of the household members and other events that have coincided with this activity (funeral in the villages or a political meeting because of the visit of administrator).

Table 9: Population of Macaringue village by settlements

Settlements	***Number of households***	***Number of habitants***
1	73	409
2	102	477
3	55	271
4	72	351
5	61	208
6	64	240
Total	**427**	**1956**

(Source: statistical book of the village secretary of Macaringue; PhD field notes of Nícia Givá)

The selection of the interviewed household was done using a list of village household census (source: community leader), where 10% of household by each settlement of a total of 6, applying systematic and random sampling method.

Background to Macaringue and the Limpopo National Park

Macaringue, is one of the villages in Massingir District within the so-called buffer or multiple use zone if the Limpopo National Park (LNP). The LNP had defined multiple use zone as 5km inward from Limpopo and Elephants Rivers (about 16.5% of the LNP).

Massingir is the 'capital' of the LNP where the Park office is located together with other public services. This district occupies 5.893km^2 and a has population of 28 470 inhabitants (INE, 2007 census, preliminary results), Massingir has a population density of about 5 people per square kilometres. This small town is considered economically active compared to other districts that comprise the Park. It is connected to other two cities considered as economic centres of the region, Chokwe and Xai-Xai.

Macaringue is located 71 km from Massingir, inside the Park, towards the south-eastern tip, occupying the inland part of the confluence of the two rivers, Elephants and Limpopo. The village was created in 1977 during compulsory "villagisation" programme, where the government started a campaign to aglomerate people together in a village with the argument of providing better social and economic services. At the time, agriculture and livestock were considered the main livelihood activities. From 1989 to 1992, due to the Renamo civil war, people moved to Chókwè, Mabalane and/or South Africa where they were settled as war refugees.

While in Chókwè, fuelwood collection and its commercialization, food aid and seasonal work in farms were the main source of livelihoods. Working in mining and short term contracts in farms in South Africa, were the activities performed for subsistence. Between 1993 and 1994, after the peace agreement a process of post war resettlement took place and old and new families returned to Macaringue. The village is now structured with six settlement, four of them concentrated in the centre of the village and the other two (settlement 5 and 6) on the opposite extremes (north/south) of the village locating 5 km from the main settlements each. It is ruled by a community leader, who is helped by the chiefs of each settlement and the secretaries of the village.

The annual rainfall in Massingir is on average 399mm a year. (BRL, undated).

Socio-economics characteristics

The socio-economic characteristics vary along the buffer zone and also from one side of the river to another. However, the general features are very similar. The houses are mainly built with local material (wooden stakes and mud for the wall and grass or zinc roof for the shelter). Nevertheless, conventional houses (constructed of blocks and cement and covered by zinc) are also sometimes encountered in Macaringue.

The main infrastructure in the village includes a school that teaches from 1st grade till 7th, a heath centre, a communal corridor for animal spraying, and 3 boreholes.

Agriculture and livestock are the main livelihood sources for most of the population in the village however, there are other livelihood activities such as small business, cattle trading and beer brewing.

Education

The school in Macaringue was built in 1998/9 funded by Caritas. It has one cement block with 3 classrooms and an administration room. In addition, there is another classroom built with local traditional building material and other 2 classes function outside (under the tree). These last 3 schoolrooms have no furniture and every child has to bring own chair from home daily.

The enrolment rate is slightly decreasing year by year (Figure12). According to the teachers the interest of schooling is decreasing among the families, most of their pupils give up the school for different reason: earlier marriage for girls (13 to 15 years old); the small boys stay weeks without coming to school because of cattle herding obligations; and some boys go to South Africa (SA) at the age of 15 (teachers' interviewed 22/04/09).

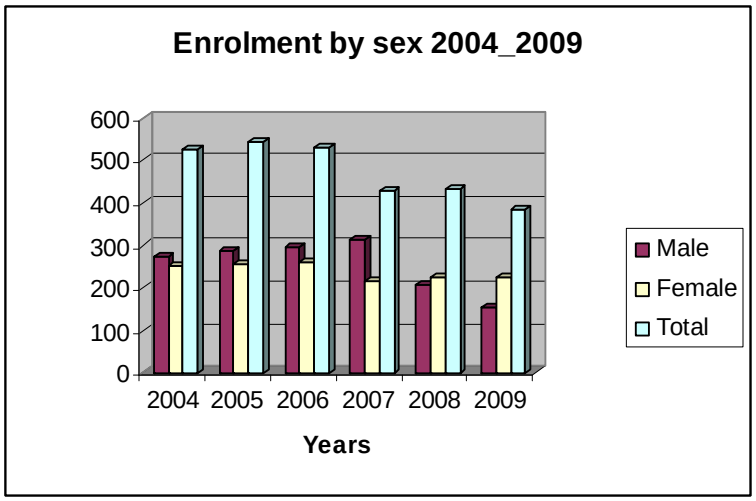


Figure 12: Enrolment rate by sex in the last 5 years in Macaringue Primary School (Source: Macaringue school statistics)

The graph also shows that for the last two years the female enrolment rate is slightly higher than the male, which means that there is an increment of school boys dropping out.

There are 9 teachers (2 females and 7 males) who work in two shifts (mornings and afternoons). According to them, although books are subsidized by the government, there are considerable number of parents that do not send their children to school saying that they cannot afford to buy other school material like exercise books, pen and pencils.

Health

There is a health post with a nurse in the village. It was built in 2001 also funded by Caritas. The health post is equipped with only the basics for basic tests and medicine prescription, for complicated matters they are transferred to Chókwè and Massingir. Nevertheless, it provides first aid, testing and child care services. The principal diseases in the villages are child parasites, malaria, chest infection, and sexually transmitted diseases.

Based on the information gathered from the interview with the nurse, there are other health programmes that started last year (2008) which include child vaccinations, anti parasite treatment, rapid HIV tests and a sanitation campaign. The main constraints faced by him are lack of staff, lack of transport for patients and medical material.

Community perceptions of wellbeing and poverty

Four discussion groups, separated by sex were performed in two settlements (3 and 4) to discuss the community perception about wealth and poverty. The groups were heterogeneous in terms of age, marital status, and occupation. The first topic discussed regarded assets considered important for their livelihood, then they were asked to establish criteria to distinguish a poor from a wealthy households. Finally the groups have estimated the percentage of each class identified.

Regarding the main assets, the group of women listed livestock, cultivated fields, house, and bicycle, while the male group has added to this list radio, cars, canoes and irrigation pumps.

In terms of criteria to distinguish wealthier households, it was consensus between male and female groups that a combination of number of livestock, quantity of fields cultivated irrespective of type and size of the house (Table 10).

Table 10: Male and Female criteria to identify a wealth household

Criteria	**Male group**	**Female group**
Livestock numbers	Cattle (30 animals) Goats (30 animals)	Cattle (20 a 30 animals) Goats (30 a 50 animals)
Size and quantity of fields	3 plots of at least 1ha	3 to 5 plots of at least 1ha
Number of wives	3	Not relevant
Type of house	Not relevant	Not relevant
others	Car, irrigation pump, canoe	NA

Both male and female have characterized poor households those headed by widows, orphans or people with no parents or in other words people with very short social networking.
Just for contrast, a same exercise was carried last year (Nicia's PhD field notes, 14/03/08) and the group has indentified 5 categories and the assets were distributed as show in Box 3.

Box 3: Wealth ranking exercise in Macaringue (14/03/08)

In order to understand how people from Macaringue characterize wealth in their context, a discussion group with 8 participants (2 from each central residential quarter) took place, where they have split the community in 5 groups and suggested indicators for each group. Afterwards they were asked to rank the groups using 60 stones. The 60 stones would correspond to the total of households in the village and the results were as shown below:

1. Wealthiest (19): owns 60-200 cattle, a car, motorized water pump, more than 30 goats, large house built with conventional material and a canoe to cross the river;
2. Wealthy (11): owns 25-60 cattle, 15-30 goats, house built with conventional material;
3. Stable condition (11): owns +/-20 cattle, +/-15 goats, improved mud house covered by zinc roof;
4. Medium (10): owns +/-15 cattle, 5 to 10 goats, house built with local material with zinc roof;
5. Poor (9): without cattle, goats, only practice agriculture, owns house built with local material and covered with grass.

The number in brackets represents how the 60 stones were distributed and represent the proportion of households who falls into each group. A discussion followed the process for exploring the meaning of the distribution proposed. They argued that the larger group in the village is the wealthiest group

followed by wealthy, and in average the size of group considered wealth is the same size of the group of stable, similar explanation goes to the last two groups.

This exercise gives an idea of assets that people emphasize when talk about wellbeing.

Water

Macaringue is regarded as a privileged village, as it is located in the confluence of the Limpopo and Elephants Rivers. The two rivers also constitute the main sources of water for animals in the Park. At the village level the rivers are sources of water for domestic purposes (cloth washing, and bathing), cropping, animal drinking, and building. Elephant River is perennial while Limpopo basin turns dry most of the time of the year.

Land

Two are the principal land uses, agriculture and grazing. Land is an inherited resource, which passes from generation to generation. The plots of land one can own depends on the number of wives, while the size of plot depends on the power and assets one has to work the land. The larger the family normally the more numerous and larger plots. Therefore, land is not considered a symbol of wealth.

Livestock Management Practices

Livestock keeping constitutes the principal mean of income, saving and wealth for the village. Cattle, goats, pigs and chicken are the main livestock raised in this village.

There are two principal grazing areas in Macaringue (Figure 13), one from the village towards the southwest where they share with *Maconguele* village and *Guche* (settlement 5) and another towards North sharing with *Chibombe* (settlement 6). For the convenience of location, cattle from 3 residential quarters (1, 4 and 5) herd they cattle in the southeast area while cattle from other 2, 3 and 6 residential quarters go to north herding area.

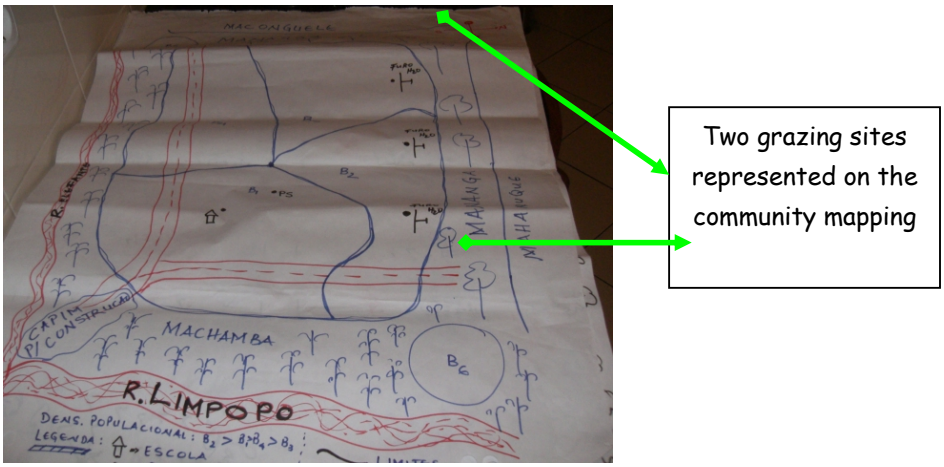


Figure 13: Macaringue Community mapping, showing the main land uses

According to the participants of the discussion groups, currently there is no organization that supports livestock management apart from the very recent initiative (started in 2008) with an non-governmental organisation called KYEMA, which is assisting women groups with

Newcastle vaccinations and advice on chicken management practice. However, the participants also referred to VETAID as an organization that has helped with Newcastle vaccinations in the village in 2004/2006. As indicated by Dr Atanásio Vidane (personal communication, May 2009), VETAID was a governmental organization oriented to livestock farming development with a mission of training promoters to assist livestock in rural areas as well as provide vaccination in low costs (for more details see section on Combomune Rio below).

Livestock and social meaning in the Macaringue

Cattle in the villages are seen as a sign of social prestige or social status. They also serve as sources of income, savings and traction power. On the nutrition side, milk is the most used product, where apart from drinking it; they also mix with maize flour and make porridge. Meat is eaten only for special occasions.

There are four main ways of acquiring cattle in villages: inheritance, by marriage, by herding other's cattle and by buying (normally people who work in South Africa):

- *Inheritance*: when parents die the cattle are automatically owned by the elder son or the father's young brother.
- *Marriage*: when one's daughter is asked for marriage, traditionally, the son in law pays the dowry (*lobola)* of 15 cattle to the daughter's father. However, nowadays that practice is adapted to reality. According to them, because they don't have as many cattle as before, they have stipulated an equivalent amount of money, where the son in law gives as many cattle as he can or wishes and the remainder is replaced by money.
- *Herding cattle*: the small boys who herd cattle have a payment right of an ox or cow per each year of herding job.
- *Buying*: action generally done by people who work outside (especially South Africa) who are able to save money.

Table 11: different sources for cattle acquisition among the interviewees

Source of cattle acquiring n=32	Total	%
South Africa	13	40.6
Herding	3	9.4
Lobola	2	6.3
Buying (other sources)	12	37.5
NA	2	6.3
Grand Total	**32**	**100**

Source: AHEAD survey, (June 2009)

As shown in Table11 above, the greater percentage of the interviewees indicated remittances from South Africa (SA) as the main source of acquiring cattle. However, they have underlined that the profitable work in SA that represents a good source of saving is only when the person works in the mines and not the part time jobs that are more frequent nowadays.

Information obtained from the statistics of District Services for Economic Activities (SDAE) shows the growth in numbers of cattle especially, while goats' show an oscillation trend and

sheep tend to disappear. Triangulating this with information from the focus group, participants have argued that goats have a higher death rates due to diseases related to diarrhoea.

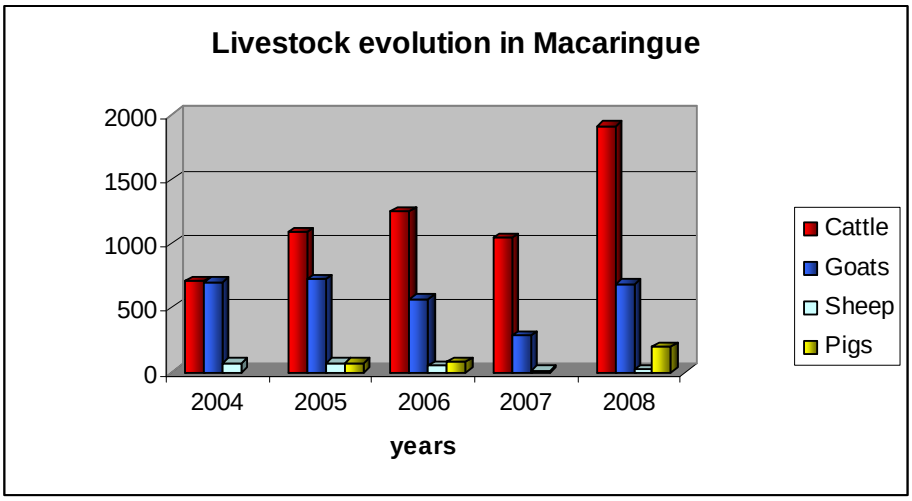


Figure 14: Livestock evolution in past five years in Macaringue
(Source: Massingir SDAE's statistics, 2009)

The livestock keepers have shared the same opinion that there is only one type of cattle raised in the village that is the traditional breed called *Landi*. However, within this breed, there are different designations according to the external characteristic of the cattle, see Table 12.

Table 12: *Landi* cattle differentiation according to external characteristics

Designation	External Characteristics
Phuphuphu	Grey camouflaged
Baumucaze	White with a black spot in front of the head and in the abdomen
Nshlavucaze	Shiny brown
Nacaze	Black and white
Mushlope	Whole white
Lungazene	White with brown spots
Sundo	Brown and black
Nconi	White with black spots
Zimacaze	Whole black
Mpevu	White face and brown body
Nhanti	Buffalo head and brown greyish colour

According to them, there have no differences among the variety in terms of susceptibility to diseases.

Institutional arrangements around livestock production in Macaringue village

Cattle and goats are the most important livestock in the Macaringue, followed by pigs. Chickens are kept in almost all household but their contribution to the household is less compared to the other 3 species before mentioned. As a common practice, cattle are kept in

kraals and herded in an extensive area between 1-5km into the forest every day, depending on the season (dry season tend to go as far as 5 km). Each household has a herd boy that takes care of the herd during the herding, which is an activity that takes the whole day. The herd boy is normally the child of the household, but he can also be a worker. For these cases a payment is done annually and costs a cow per year. The herd boy is in charge of the decision of which direction to take the cattle, based on his sense about the grass availability. Regardless of his age, the size of the herd under his responsibility depends exclusively on the herd size of the owner. The herds do not use any type of identification like necklaces or earrings, or any other, but the owner or herd boy can distinguish his cattle from the others.

There is no established rule about the herding/grazing areas. Since there exists two places for grazing they normally take the nearest direction from the departure place. As reported by the focus group discussion there is no management plan or strategy around grazing areas. Even though the grazing sometimes overlaps with other villages there is no conflict around grazing area. The only conflict mentioned is when cattle invade the crop fields, for this matter, the community have established a fine of 100Mt (USD4) per head invaded.

Grazing and watering patterns

Grazing

The grazing land is communal and it varies according to the season and rain patterns. During the rainy season and a month after, cattle are herded in the village surrounds, whereas in the dry season they are moved more into the Mopani forest (see Table 13). The distance their go depend on the availability of grass and the size of the herd. In addition, they also send the cattle to the cultivated area after the harvesting. Bigger herds in a critical dry season do move to other neighbours' village. Regarding goats and sheep they always browse around the village area.

Table 13: Seasonal cattle grazing areas

Movement patterns	**November/February**	**March/July**	**August/October**
Surrounding village			
In the forest			
In the fields			

Based on the information on the focus group discussion indicated that during the dry season the grass tends to be scarce, which leads to long distances for herding. However, Table 14 below, from the survey data shows that 50% of the respondents answered YES to the question whether there is enough grazing in the village, against 37.5% that answered NO.

Table 14: Villagers opinion about grass availability

Enough grazing? n=32	Total	%
No	12	37.5
Yes	16	50.0

don't know	1	3.1
Not answer	3	9.4
Grand Total	32	100.0

(Source: AHEAD survey, June 2009)

The cause of the divergence on the answer is possible because of the way the two questions were stated. In the discussion group they were referred to the availability of grass during the dry season, whereas in the survey the question was generalized.

Drinking Points

The water patterns have not changed over past 20 years as affirmed by the livestock keepers. The main source of cattle drinking points are the two rivers, however, during the rainy season there are pools that are formed inside the forest, whereby cattle drink during that season. The cattle routine consists of grazing the whole day and drinking in the river on their way back from grazing in the forest, except in the wet season where drinking is also possible in the forest.

These water points do not have any management strategy, neither a use rule.

Disease management and control

The management of disease consists basically of spraying against ticks and vaccinations. As the Vet technician has indicated, each livestock farmer is responsible for treating their cattle, but the Vet service at district level sells drugs at subsidized prices of 250,00MT/L.

The Vet technician also mentioned that vaccination is done once a year between May and June against "aftosa" fever, carbunculos hematico and sitomatico in both sexes. He added that the most common diseases are: anaplasmose and babesiose, both caused by the ticks and paralysis of the posterior legs, possibly caused by deficiency of minerals. He also informed that in 2007/2008 there was an epidemic of nodular dermathose in Macaringue, and the neighbouring villages of Munhamane and Maconguele.

On the other hand, the informants from focus group and semi-structured interviews revealed that the vet assistance is very rare and irregular. Most of the diseases they detect through external signs and they treat using local plants. Livestock farmers with more that 8 to 10 heads do their spraying personally using pesticide (Amitrz) bought from Chokwe vet shops. Households with small herds (less than 5) share the pesticide with bigger farmers and pay 10 to 15Mt/head of cattle sprayed. The frequency of spraying depends on the ticks' infection.

Attitudes and Perception of small-scale livestock producers towards wildlife and the GLTFCA

The survey has indicated that most of the people living in Macaringue, which is located within the support zone of the Limpopo National park, are not aware of the Great Limpopo Transfronteir Conservation area. Most of them only know that they live inside the park (Table 15).

Table 15: Community awareness of GLTFCA

Have you heard of GLTFCA	Total	%

n=32		
No	24	75
Yes	8	25
Grand Total	32	100

In the same way, when asked if they see it as an opportunity or a constraint, the greater percentage (78%) responded that they don't know. Only 3% responded as seeing it as an opportunity, however, he added that it is an opportunity for the country and not for the community.

Table 16 illustrates the different perception of the community about the interaction with the wildlife.

Table16: Interviewees perceptions about the interaction with wildlife

Statement n=32	Strongly agree	Agree	Disagree	Strongly disagree	Don't Know	Total
Wildlife a nuisance in your environment	28.1	62.5	9.4	0.0	0.0	100
Wildlife as non-destructive (harmless)	9.4	3.1	37.5	43.8	6.3	100
Wildlife as a benefit to yourself	21.9	25.0	18.8	18.8	15.6	100
Wildlife transmits diseases to your animals	25.0	25.0	12.5	0.0	37.5	100
Wildlife transmits diseases to humans	12.5	15.6	21.9	0.0	50.0	100
Livestock transmit diseases to wildlife	15.6	21.9	21.9	3.1	37.5	100
Wildlife causes destruction of crops	93.8	6.3	0.0	0.0	0.0	100
Wildlife preys on domestic animals	34.4	28.1	31.3	3.1	3.1	100
Wildlife preys on humans	50.0	21.9	28.1	0.0	0.0	100
Wildlife is a good source of meat	21.9	40.6	12.5	9.4	15.6	100
Wildlife can contribute towards tourism development	25.0	37.5	21.9	3.1	12.5	100
Wildlife is a source of conflict	21.9	46.9	15.6	3.1	12.5	100
Wildlife is good for making biltong	15.6	50.0	21.9	3.1	9.4	100

In general, there is a perception that wildlife has a negative impact on the humans' life. As many (62.5%) agreed that it constitutes a nuisance in their environment, 93.8% agreed that it causes destruction of crops as well as being seen as a source of conflict (78.8%). On the other hand, there are few that also have a positive views and agreed that it contributes towards tourism development (62.5%), and is good source of meat and biltong (62.5 and 65.6% respectively)

3.4 COMBOMUNE RIO

Introduction
Qualitative data only was collected from Combomune Rio. Key informant interviews and focused group discussions with members of the community, including the local leadership, in Combomune Rio were used to collect information on institutional arrangement around small-scale livestock farmers.

Background
Combomune Rio, in Mabalane District, Gaza Province, is approximately 15 km from Combomune Estaçao (station) which is on the rail line and road from the Chiqualaquala border post with Zimbabwe to Chokwe. Combomune Rio is situated on the right bank of the Limpopo River, opposite the Limpopo National Park. The community of Combomune Rio, which is predominantly Shagaani, consists of about 800 people whose major livelihoods concentrate on use of the water from the Limpopo, especially for agriculture and cattle rearing. There is a predominance of women in this community due to men working in South Africa and other cities in Mozambique.

In Mozambique all land is owned by the state. In Combomune Rio, the community hold the land traditionally, but with no official title under the Land Law.

Socio-economic issues
In Combomune Rio, a rich person is characterised by having more cattle and wives. The households own the usual agricultural assets particularly hoes, and some have ploughs. Mobile phones are rare because there is no network in the area. Some of the villagers who return from South Africa bring mobile phones, but these are not considered to be a sign of wealth. There are three vehicles in the village, all pickups, including one bought in South Africa by the leader of the Producers Association.

Work in South Africa
The pattern amongst this community is that youths, from 14 or 15 years old, go to South Africa, usually illegally, work for several years as casual labourers or farm workers and then some return to the village in their 20s and then usually get married. This practice means that they miss out on education and when they return they regard themselves as being too old for studying. In the case of girls, they also tend to miss out on education as they are married very young.

Those youth who work in South Africa do not normally send money home as remittances. However, when they visit during Christmas, they bring money and presents. Although many of the youth go to South Africa to work, they rarely use this to buy assets. An important motivation for going to South Africa is to acquire money for bride price (*lobola)* or to build a house.

Unlike in Zimbabwe, there is no cross-border trade.

Livestock assets
Most households own cattle and the numbers are rising as the farmers build up their herds slowly after they were decimated during the Renamo war (1980 -1992). A small breeder is considered to be one that has between 4 and 5 heads of cattle, while the largest herds are between 50 and 60. The average herd size is around 30 cattle. In recent years, nobody has reached 100, although one of the farmers indicated that before the war he had 120 cattle, but

these were all taken from his kraal by Renamo bandits in 1988. Three of his sons were also killed by Remano. Apparently most of the farmers in Combomune Rio during this time experienced loss of cattle, and other assets such as irrigation pumps, to Renamo during the war.

Although the farmers of Combomune Rio consider themselves to be poor because their cattle were stolen, their herd sizes are actually larger than the national average.

The local breed of cattle is called *chinowani,* a small old breed which the farmers believe has acclimatised to the local conditions over many generations. The farmers perceive the breed to be resistant to disease and hunger.

Uses of cattle

The major use of cattle in Combomune Rio is for traction. Agriculture is the main activity. In a good year the granaries are full. Cattle are regarded as security during times of bad harvest. Neither livestock manure, nor any other fertiliser is used in the fields. However, crop residues are ploughed back into the soil.

Transport is another important use of cattle. Cattle and donkeys are used to transport water and timber. The timber is used in the flourishing charcoal industry. The charcoal is transported to the nearby railway station in Combomune. The mopane forests in more accessible areas around Massingir, south of the Limpopo National Park, have all been exploited so charcoal merchants now come to exploit the mopane forests around the Combomune area. Maputo and other cities provide an insatiable market for charcoal.

Cattle are also used for the household's own consumption for meat (occasionally) and milk, both fresh and sour. On average, a family would kill a beast for home consumption once a year, usually at Christmas or other holiday when the family gathers. On the other hand, goats are eaten more frequently, on average between 0 and two per month. Other sources of household protein are chickens and ducks, with occasional wildlife such as rabbit and small antelope.

Cattle are sometimes sold to sustain the family. The frequency of cattle sales depends on the situation, for example, in years of hunger when crops fail, more cattle are sold. One farmer had already sold eight of his cattle this year between January and April 2009.

Cattle also have cultural or traditional uses. One farmer had recently paid five cows in bride price (lobola), which is considered to be a reasonable amount.

Another use mentioned of the proceeds from cattle sales is to pay taxes.

Cattle markets

The main market for cattle sales is in Chokwe, about 200 km away, and at times Maputo. Buyers come from Chokwe in trucks to buy cattle from the villagers. At times, the government organises agricultural fairs.

Loss of cattle

One farmer lost 10 heads of cattle last year, most likely stolen. The cattle get lost in the bush and cannot be found and therefore are presumed to be stolen. Cattle rustling is becoming a

serious problem and is now a common occurrence. The cattle are not branded or marked in any way.

Grazing and watering

The vegetation is mopane bush and grassland. The cattle graze in the mopane forest and open bush (*managa)*, regarded as common property by all the villagers. Cattle are brought back to the village by herd boys. It appears that the animals are herded in large groups, comprised of a number of households. It is a common sight to see large herds being herded along the roads and tracks back to the village in the evening. The animals do not cross the river to the Park, although they drink water from pools in the river bed. During our visit animals were apparently wandering freely about the village. Some of these had just been untied from the plough.

Lack of grazing and watering points in the dry season were cited as the major constraints to livestock rearing in Combomune Rio.

Organisational practices for livestock

Each cattle owner has a breeder's book and pays fees annually for doses and dip. This book is obligatory and without it, or if the fees are not up to date, animals cannot be treated by the veterinarian. There was a huge programme of support with medicines (see section on VETAID) which has now finished. There are dip tanks from colonial times, but these were not refilled and in disrepair. The farmers agreed that they never worked properly anyway, possibly due to wrong concentrations of chemicals. A few (of the more wealthy) cattle owners spray their cattle themselves with dip chemicals they procured. Most of the farmers had not sprayed their cattle, while a few said that they spray once a year. A farmer who used the dip spray powder twice a year complained that the medicine is no longer effective. The frequency of dip spray application depends on money available.

Veterinary technicians are responsible for vaccinating the community's cattle. This is supposed to be annually, but occasionally vaccination campaigns are carried out by the District Veterinarians and paravets. According to the paravet, the last vaccination programme in Combomune Rio was June/July 2008. The farmers were not aware of what the vaccine was for: '*The vet just does it without informing the people what it's for*'. Apparently, according to veterinary sources, the vaccination is for lumpy skin, anthrax and foot and mouth disease. Three doses are given to younger animals, while two doses are given to older animals. Dogs are vaccinated against rabies.

The farmers indicated that they would like to learn more and are open to new ideas. They want to be linked up with other programmes.

Livestock health

The paravet treats sick animals. He purchases medicines from Mabalane Veterinary District office and then the farmers buy from him. The medicines are relatively cheap (similarly with the cost of human medicines), the most expensive being 50 meticais (about 2.5 USD) for an antibiotic injection.

Only a few farmers stated that they use traditional treatments, and they indicated that they prefer the paravet. However, the paravet has not always been popular as VETAID, the pararvet and German Technical Assistance (GTZ) were blamed for the death of a great many

poultry from Newcastle disease. It was believed by the villagers that the vaccines brought the disease.

A succulent climbing plant, *tsovoloti*, is used to treat wounds. The juice is extracted and the plant tissue ground into a paste and applied to the wound.

VETAID Combomune Rio

The VETAID programme was implemented in Combomune Rio for 6-7 years and ended in 2007. The capacity building programme trained paravets in knowledge and skills. Initially medicines were provided, but now they are bought at a relatively low price from the government veterinary department. In Combomune Rio, the paravet, still operates with his veterinary kit, providing services and advice, but does not have any medicines at the moment.

According to the paravet, the dip spraying should be monthly, but it depends on the families' situation and is normally more infrequent. The spray costs 3 meticais (0.15 USD per month.

Protected Areas

Most farmers felt that it was a disadvantage being next to the Limpopo National Park, primarily because of the elephants which destroy their crops, and lions which attack cattle. The last lion attack was in July 2007 (winter) when cattle were drinking in the river. One lion killed two heads of cattle. In February 2009 (wet season), four elephants crossed the river and extensively damaged the maize fields.

All of the farmers had not heard of the Great Limpopo Trans Frontier Conservation Area (GLTFCA), although the school teacher had heard the name but knew nothing else about it.

During the discussion on livestock and wildlife interactions, the farmers indicated that their cattle did not normally mix with wildlife. However, they were concerned about whether their cattle could get diseases from drinking in the same pools in the river bed that the wild animals drink from.

Combomune Rio Producer's Association garden project

The majority of households (85%) of Combomune Rio belong to the Producer's Association. The project is regarded as being very well organised, with good leadership.

The community has a number of assets which are regarded as being communally-owned. These include the motor pump for the garden project, two heads of cattle for ploughing, which belong to the Association and two public boreholes with hand pumps. They work well, but the water is rather salty. The village has no grinding mill and the women prepare maize porridge (sadza) by 'souring' the cracked maize in water for a couple of days, before mashing it.

The production from the garden is not enough to pay for seeds or fuel for the pump.

Development projects

A number of donors and non-governmental organisations were active in the past in Combomune Rio. However, the majority of these projects have now finished. For example the VETAID programme. The ten-year SADC Sustainable Forestry Project which was implemented in Mabalane District has just ended. However, Combomune Rio was not included in this project.

Previously, a lot of non-governmental organisations used to assist the Combomune Rio Producer's Association garden project with seeds and gardening implements. However, it is only the government that helps now.

Currently the World Food Programme and Jamlife (a US religious organisation) feed school children and also provide monthly handouts of food. This is regarded as being potentially problematic as it is becoming institutionalised and counter-productive. For the school feeding programmes, the food is prepared daily by the parents.

The Local Government gives money for community projects. There appears to be a weakness in the ability of the community to access these funds. Technical assistance may be needed to assist Combomune Rio accessing these funds and formulating a proposal. One reason is that the village has a debt with the District Administration that has to be paid before more funds are disbursed.

Coping with climate change

The community is already aware that the rainfall patterns are no longer as regular or as certain, as they used to be. The rainy period is now shorter. The last major drought was in 1983, while there were serious floods in 2000, caused by Cyclone Eline. They have adopted a number of coping strategies, mainly increasing exploitation of the mopane forest timber for charcoal production. Another coping strategy has been sale of cattle for grain and income. They do not use more drought resistant crops as they make more use of the wet river bed to grow sweet potatoes and pumpkins. When there is a serious drought, they can only cultivate in the river bed of the Limpopo.

For cattle during periods of drought, they use a succulent climbing plant called *nheta* which is cut up into animal feed. The cattle also browse on the mopane leaves.

During floods, the animals are taken to higher ground.

4.0 Conclusion and next steps

The data received so far needs to be refined, consolidated and repackaged. So far, only preliminary analysis has been carried out. The questionnaires were analysed using SPSS statistical package and further cross tabulations will be done. The interview findings need to be consolidated and correlated across themes. Feedback meetings with the stakeholders will help to validate the findings, clarify or elaborate findings if necessary and also identify gaps. The findings will then be interpreted and a comparative framework analysis applied.

The feedback meetings will double as awareness raising and information sharing seminars for the stakeholders so that they can gain more knowledge and skills, as well as share their experiences. Therefore, to benefit the farmers, it is envisaged that we invite technical experts to make presentations with interactive discussions with the farmers. Topics identified by the farmers include:

- general animal practices;
- ethno-veterinary issues and impact on environment;

- drought coping strategies;
- disease control and management from a community perspective;
- proposal writing;
- more information about the GLTFCA.

The feedback meeting will include developing scenarios and action plans with the information obtained through the study. The information may be used with the community to develop livestock management plans.

A consolidated final report will be produced and from the findings of the project and it is planned that the researchers will write a co-authored academic journal article.

Dissemination

Dissemination of the results will be on several levels. Feedback meetings will be held with each community to share the results and also to obtain their input. From the research findings, a poster, calendar or booklet, containing information, illustrations and photographs will be produced and distributed to participants in each community. The nature of this will be determined by the farmers and other stakeholders, particularly the local veterinary officers, during the feedback meetings.

There will also be a stakeholder workshop, where the results will be shared with a wide range of national and regional stakeholders.

Presentation of the results will be made at the AHEAD-GLTFCA Technical Workshop in 2010, and therefore feed into the wider AHEAD-GLTFCA agenda.

APPENDIX 1

A comparative study of institutional arrangements for small-scale livestock farmers in communities the GLTFCA, in Mozambique and Zimbabwe

LIVELIHOODS SURVEY

Name of interviewee..... Date of interview.....

Village / location.....

BACKGROUND OF RESPONDENT

1. Sex of respondent	
2. Age of respondent	
3. Martial status: Single /Married/ Divorced/ Widowed	
4. Level of education? None/ primary / secondary/tertiary / vocational/other	
5. Occupation	
6. Period of residence in the area you are living in (In years)	

HOUSEHOLD INFORMATION

7. Are you the household head?	
8. If respondent is not the household head, who is it?	
9. Age and gender of household head	
10. Number of people in the household	
11. Which members of your household are living away? Where?	
12. How often do they visit?	

13**. Major source of income** for the household.....

14. What other **economic activities** do you or your household members engage in:
....
.....

15. Does your household receive **remittances** from other family members? .....
If yes:

Type (Cash, grocery, farming inputs, other..)	From who? (relationship)	How often?	From where?	Value?

16. Which of the following does your household own?

Motor vehicle Bicycle Scotch cart	Plough Tractor Cultivator	Hoes Solar Panel Water drums	Radio Television Satellite	Mobile phone Wheel barrow Other.....

17. What are the sources of drinking water for the family?	
18. What are your sources of energy?	
19. What are the available sanitation facilities?	

20. What is the most labour intensive activity in your household?
.....

21. HOUSEHOLD LIVESTOCK DETAILS

Animal	**Number in 2002**	**Number now**	**What was the source?**	**Uses and products**
Cattle				
Goat				
Donkey				
Sheep				
Pig				
Chicken				
Other fowl				

22. Cattle numbers

bulls		**cows**		**heifers**		**steers**		**calves**		**oxen**	

23. How many livestock would you like to have? .....

24. What limits you having this number (eg money, grazing land, etc)?..... ....

LIVESTOCK AND CULTIVATION

25. Do you use animals for draught power?.....Cattle or donkeys or both?.....

26. If yes, how many animals do you use for ploughing (span).....

27. Are these animals and ploughs owned by you or do you share/borrow/rent for ploughing?.....

28. If you do not use animals for ploughing, what method do you use for cultivation? (hoe, tractor, other ...) .....

29. What method would you prefer to use? .....

30. Which is more productive: crop production or livestock production ?
.....

LIVESTOCK GRAZING

31. Is there enough grazing in your area?	
32. Who allocates an area for grazing land	
33. Do your livestock ever graze in a National Park or wildlife conservancy? If yes give details.	
34. Do you provide any **supplementary feeding** to your livestock? If yes, what?	

LIVESTOCK HEALTH

35. What is your perception of a sick animal? .....
.....

36. Animal diseases

Animal	**Diseases in 2002**	**Did the animals die?**	**Diseases now**	**Did the animals die?**
Cattle				
Goat				
Pig				
Chicken				

LIVESTOCK OFF-TAKE AND SALES

37. How many cattle are removed from your herd per year? (Eg: sale, consumption, barter, ceremonial, lobola).....

38. If you sell **y**our animals, what are the reasons? (to buy food, other household needs, purchase of breeding animals, agricultural inputs, wages for agricultural workers, clothes, medicine, school fees, pay debts, lobola, etc)

.....
.....

39. Do you also sell meat? .....

40. If yes, give details (local market, private buyers, butcheries, cross border, quantities, prices, quality of meat etc).
.....
.....

HUMAN, WILDLIFE/LIVESTOCK INTERACTIONS

41. Do you rely more on wild animals or domestic animals for meat?
.....

42. Have you heard of the Great Limpopo Trans-frontier Park / Conservation Area (GLTFCA)? .....
43. If yes, do you regard it as an opportunity or constraint? .....
Explain your answer.....
.....

44. Indicate whether you agree or disagree to the following statements about your attitude towards wildlife:

Statement	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
Wildlife a nuisance in your environment				
Wildlife as non-destructive (harmless)				
Wildlife as a benefit to yourself				
Wildlife transmits diseases to your animals				
Wildlife transmits diseases to humans				
Livestock transmit diseases to wildlife				
Wildlife causes destruction of crops				
Wildlife preys on domestic animals				
Wildlife preys on humans				
Wildlife is a good source of meat				
Wildlife can be a source of wages				
Wildlife can contribute towards tourism development				
Wildlife is a source of conflict				
Wildlife is good for making biltong				

45. Which wildlife rules or regulations are you aware of? ..... .
....
....

46. Who enforces these rules? (the Rural District Council/ National Parks / local leaders / community / other (specify) /nobody/ don't know).... .....

47. Do you think that most of these wildlife regulations are necessary? .....

48. How often do you eat wildlife meat? (*3 –often, 2 – sometimes, 1 – rarely, 0 –never)* ..... (Name the species consumed).....

49. Do you prepare biltong? If yes, from which type of animal?.....

50. If you were asked to give up any of your land for wildlife production, would you agree? .....

ADAPTATION

51. What hazards (disasters) have you experienced in the last 5 years? (eg: droughts, floods, human disease epidemics, animal disease out breaks, animal predation)

Hazard	**Response**

Thank you

APPENDIX 2

A comparative study of institutional arrangements for small-scale livestock farmers in communities the GLTFCA, in Mozambique and Zimbabwe

CHECK LIST OF QUESTION AND ACTIVITY GUIDELINES FOR FOCUS GROUP DISCUSSIONS AND SEMI – STRUCTURED INTERVIEWS WITH KEY INFORMANTS

***Before each interview or group discussion, think about the questions and activities, from the checklist below that will be relevant to the occasion.*
**This checklist is a guide – please feel free to add more questions where it is appropriate*

INFORMATION REQUIRED

FOR ALL:

Date of interview/ group discussion

Name(s) of interviewee (s) (for groups state the number in group, list of names, and where appropriate, status of members / type of group, gender, ages, chairperson of group)

Location: village, Ward, District

Leadership: Chief, headman, or councillor

FOR SEMI-STRUCTURED INTERVIEW WITH KEY INFORMANTS:
For each respondent: **Background of respondent** questions:

Sex of respondent	
Age of respondent	
Martial status: Single /Married/ Divorced/ Widowed	
Number of wives (where appropriate)	
Number of children (with ages)	
Level of education did you achieve? None/ primary / secondary/tertiary / vocational/other	
What is your occupation?	
Do you hold a leadership position in your community or are you a member of any organisation or institution in your area? Which ones?	
Period of residence in the area you are living in (In years)	

Add any more information about background of the respondent as you think relevant, including why the person is regarded as a key informant.

For the interview chose appropriate questions from the question check list below:

TOPICS FOR INVESTIGATION

*Topics **A to S** below cover a wide range of areas and activities. They cannot all be done at one time. Choose before the interview or discussion, which topics or activities you want to investigate.*

*There is no need to do the following sections in order. If time is a limiting factor, you will have to prioritise and concentrate on **sections E a) to O** which concern institutional arrangements around cattle.*

A. BACKGROUND INFORMATION OF THE COMMUNITY

(To be supplemented with secondary sources and observation)

Population of area, Male/female ratios, Different age group composition, population density, Ethnic composition
Climate, Vegetation, Topography
Land tenure, land use patterns

B. HISTORICAL EVENTS

Group constructs a time line to indicate major events (such as war, drought, floods, disease outbreaks, changes in government and policies, etc) that have affected the community, including trends in resource and environmental quality. (for example: erosion, loss of biodiversity, deforestation etc..)

C. SOCIO-ECONOMIC ISSUES

Wealth and poverty

Perceptions of wealth: why are people regarded as being 'rich'?

Who is rich in the community?

Wealth ranking exercise

What type of houses do community members live in? What do they aspire to live in?

Assets

What are the main assets acquired by community members?

How many (%) of the community have: bicycles, cars, trucks, TVs, solar power, telephones, tractors, etc?

Does the community have any 'community assets', such as a grinding mill?

Do members engage in any of the following livelihood strategies?

Wood carving Knitting/ sewing Medicinal processing Cross Border Trade Hired farm labour (maricho) Natural Products Enterprises	Brick making Beer Brewing Thatching Building Welding Fishing	Vending Pottery Hunting Healing Tobacco Crafts	Bee keeping Food Processing other.....

Education and health issues

What percentage of children attends primary school / secondary school / tertiary?

What are the constraints around school attendance?

Do more boys than girls attend school? Discuss reasons and consequences.

How would you rate the health services for the community? Has it improved or got worse?

Infra structure and services

Indicate distance from the each of the following service areas:

Clinic Primary school Secondary school Retail shop Police Postal service Bus stop		Dirt road Dip tank Cattle handling facilities Veterinary centre Abattoir Agricultural extension office		Public telephone Bank Tarred road	

Which resources and services does your community have difficulty in accessing? Rank the 3 most serious for the community:

Land for cropping Land for grazing Water Draft power Timber	Extension services Veterinary drugs Dipping chemicals Building materials Cattle marketing	Government Assistance Donor Aid Other

Institutions and social networks

What **social networks** exist in your community? (For example: Women's Club, Burial Society, Cultural Group, Garden group, borehole group, Church Group, School Development Association, farmers group, or other)

What sort of **support networks** exists between members of the community? Reciprocity (nhimbe, jangano, etc) information, mutual help, occasional visits, loans (zvikwereti), (money or goods) others

Do members of the community ever **volunteer** to do anything for other members of the community? (specify which and give details). For example:

Paying school fees Looking after orphans Provide food, Pay a debt Offer transport	Take member to hospital, Build something Provide moral support	Cultivate land Herd cattle Sharing livestock drugs and dip chemicals Other

Are there any **child headed households** amongst your community?

If YES, what are the forms of assistance given to child headed households?

Are there many **terminally ill patients** in your community?

If YES, what are the forms of assistance given to these households?

What **institutions** exist in your community*?* (For example: Farmers Club, group garden, traditional healers, political party, religious association, war veteran, burial society, money or savings club, other .....)

Institutional analysis

Institutional mapping **:** Venn diagrams of institutions in the community.

Rank in the order of most helpful/important / significance to community.

What services do they provide? Internal or externally driven? Membership, governance etc...

D. EXTERNAL SUPPORT PROGRAMMES

Is your community benefiting from **government programmes**?
If YES, which government programmes ? (eg: food projects, HIV and AIDS projects, food for work, agricultural input schemes, educational projects, resettlement, dams, natural resources conservation, immunisation, livestock programmes etc)

Is your community participating or benefiting from **donor projects**?
If YES, which donor funded programmes?

Does the community sometimes get **donor aid**? If yes, give details. (What kind, how often, which organisations, what criteria is used to select households that receive the aid?)
If no, what kind of aid would you like to receive?

E. COMMUNITY MAPPING

a) Group draws a map of their area with the most significant features on it (rich picture)
   For example, some features that could be included are: residential (homesteads), kraals, stores, roads, paths, railway, grazing land, cultivated land, land under irrigation, rivers, hills, rocky outcrops, wetland, fallow land, woodlots, etc.

b) Group draw a map of the **grazing area** with features such as:
   boundaries, infra structure for cattle management (fences, dip tanks, handling facilities, boreholes, etc), 'key resources' including wetlands, preferred areas, winter and summer grazing areas, rivers, dams, boreholes, springs, topological features.

F. LIVESTOCK

Do most families have cattle? What %?

What are the main breeds or type of livestock.

What is the average herd size and range of sizes? Discuss the ownership of cattle – are some owned by absentees and looked after locally? Give an approximate %.

How important are cattle to the community? What are the main uses / roles of cattle in the community? (For income, security, savings, status, cultural events (explain), ploughing, meat, milk, etc). Rank the importance of these uses.

Are livestock numbers controlled? If yes, who by? How effective is this? Does everyone comply? Were livestock numbers ever controlled in the past? *For Mozambique:* Describe communities ownership of cattle, in relation to the movements of people over the last 30 years. Did they move with their cattle, or start afresh? What happened to their cattle, and where did they acquire more cattle?

Do you know the official **'carrying capacity'** of your area? How does this compare with the *actual* stocking capacity? If there is a discrepancy, what do you think of this?

Who is responsible for **managing** the cattle? Who makes decisions regarding cattle in households/community? Who does the work around cattle management ?

Who ploughs?

Who herds? Under whose instructions?

Who is responsible for dipping? Who takes the cattle to the dip tank? What activities take place at the dip tank (eg vet services, interaction with other farmers, plans for sale or purchase of cattle?

Who builds the kraal?

Who is responsible for the security of the cattle?

Who decides to sell or otherwise dispose of cattle?

Who treats sick animals?

What other animals do the community rear? Discus these including, numbers, uses, management.

G. GRAZING LAND

How much grazing land does the community have access to?

Has this changed over the last 5/10/20 years? If yes, give details.

Where are cattle grazed in: i) wet season ii) dry season
How far is this from the homesteads? (near the houses, less than 1 km, less than 5 km, more than 5 km)

Is there enough grazing in your area?

If not, how do you overcome the problem?

Have there been any negotiations for access to more grazing land?

What are considered to be the key (best) grazing areas?

Who allocates an area for grazing land (eg, cheif/headman, local government, local agricultural officer, etc)? What criteria are used?

What are the rules and regulations that govern access and use of grazing land?
How is grazing and herding organised? Who makes the rules for grazing?

Are **paddocks** used ? If yes: How many? What size? How are the paddocks fenced? Who was responsible for the fencing? Are paddocks used all year round? If not explain.
Are the paddocks adequate for pasture and forage?

Are animals rotated within a grazing area?

Do community cattle sometimes enter into the National Park or wildlife conservancy for grazing? If yes, give details.

Are there any conflicts about moving cattle? Within the community or with other communities or stakeholders (such as conservancies or national parks)?

Which plant species are important for the diet of your animals throughout the year? (Different seasons) Which plant species do cattle prefer?

Do the livestock **browse** on bushes/small trees? If yes, name the species, places and seasons when this occurs.

Are there any particular places where the cattle prefer to feed? If yes, describe the characteristics of these places (what makes them special?)

Is any **supplementary feeding** for cattle provided? If yes: i) when, ii) what kind, iii) quantities.

What plants are useful for supplementary feeding? Explain.
Do you buy supplementary feed? If yes give details.

Are there any wetlands in your area? Do you regard these as important or not?
What are the rules that govern access to these wetland resources?
Do you use animal manure as fertiliser for crops? Give details (amounts, type of crop, application, efficiency, etc)

Do you make use of crop residues?
If yes, give details (for supplementary feeding, collected or free grazing, for fertiliser – green manure, type of crop, effectiveness)

Transect
To determine the different types of vegetation in the area.

Estimate potential carrying capacity.

H. CATTLE WATER POINTS

What are the major watering points for cattle? Wet season, dry season. Do other animals use this source?

How far do your animals travel to drink water? (near the house, less than 1 km, less than 5 km, more than 5 km)? Wet season, dry season.

Is the quantity of water adequate throughout the year? Explain.

Do you consider water for cattle to be a problem? If yes, explain.

What is the quality of water?

What are the rules and regulations and institutional arrangements over cattle watering and access and use of water points?

Are there conflicts over water in your area?

I. LIVESTOCK HEALTH AND DISEASE MANAGEMENT ISSUES

What measures are taken to ensure that animals are healthy?

How often (if at all) are cattle dipped and dosed? Describe.

Are there any non-functional dip tanks in your area? How many?

Has the frequency of dipping and dosing changes over the last 5 -10 years? Explain.

What are the constraints to dipping?

What chemicals are used for i) dosing, ii) dip?

Where does the community currently get chemicals and drugs? Has this changed over the last 5-10 years? If yes, give details.

Where is the nearest animal health centre?

Are there any Community-Based Animal Health programmes in the area? If yes, give details.

Is there a community animal health centre in the area? If yes, give details. If no, do you think that one would be useful?

Who gives advice on cattle management? (eg family members, community members, community leaders, government agricultural officers, government veterinary officers, NGOs, others)

Does the advice come with support (such as medicine and drugs)?

Common disease that affects the cattle	**How is the disease treated?**	**Do the animals usually die from this disease?**	**How are these diseases controlled / prevented?**

Are non- conventional medicine and herbs sometimes used to treat cattle?
If yes, which ones (eg name plants used), and for what diseases? How effective is it? Is it used in conjunction with western medicine, or by itself? Who administers it?

Has there been any major disease out breaks in your area recently / in the last 5 -10 years? Give details.

Do you think that some breeds are more resistant to disease than others? Give details.

Is there any government surveillance of livestock diseases? If yes, give details. How efficient are the government veterinarians and services?

Do you think that the government is more interested in commercial rather than communal cattle rearing? Explain.

What is your birth rate in cattle?

What is the death rate?

What are the opportunities for improved animal health?

What additional skills are required?

What measures/initiatives are you willing to invest in?

Kraal inspection
Map kraals in the village (use GPS if possible). Determine their positions and density.

Determine their size and structure. How many cattle per kraal? Breakdown into age groups.

How many households use the kraal?

Describe kraals for other livestock, such as goats.

Examine the cattle in the kraal and observe fitness and any sign of disease. Examine cattle for presence of ticks. Estimate their density and occurrence, and type (if possible). Devise an abundance scale.

J. OFF TAKE AND MARKETING

When do farmers kill animals for their own family consumption? Which are the preferred animals for family meat? (What are other sources of protein?)

Are cattle sometimes sold? If yes, to whom (eg private buyers, state slaughter house, butchery, locals)

At what prices?

Why are cattle sold?

What is the frequency of cattle sales?

Are other livestock such as goats, pigs and sheep sometimes sold? If yes, to whom, for what reasons and how often?

Has the market for live animals and meat changed over the last 5 -10 years? Explain.

How often are livestock purchased / acquired? Under what circumstances? From where?

Are there any police requirements for moving cattle or other livestock?

What are the institutional arrangements for livestock marketing?

K. SUPPORT FOR LIVESTOCK MANAGEMENT

Does the government provide any support for livestock management? If yes, give details (type, frequency, benefits).

How effective is this assistance?

What more assistance would you like?

Do NGOs/donors provide any support for livestock management? If yes, give details (type, frequency, benefits).

How effective is this assistance?

What more assistance would you like from NGOs/donors?

Have you heard of any other government or NGO/donor initiatives for livestock?

Have you heard of the Transboundary Animal Disease Information Management System (TADinfo)? If yes, give details.

Have you heard of the VETAID programme (Mozambique) and para-vets? If yes, give details, and for paravets, describe their role and effectiveness of their support. What progress has been made?

L. LIVESTOCK ORGANISATIONS/COMMITTEES

Are there any institutions or organisations for livestock farmers in your area/community (eg dip tank committees)?

If yes, how long has the organisation been operational? How was it formed (who initiated it?) Who are the members? Roles and activities? Effectiveness? Representation? Financial and accountability structures? Benefits. Sustainability?

M. LIVESTOCK PLANS

Does your community have any strategies or plans for livestock management? If yes: who developed them (government, NGO, farmers etc...)? Participatory or top down? Who oversees the implementation?

Describe the plans and their implementation.

N. HUMAN, WILDLIFE/LIVESTOCK INTERACTIONS

Which wildlife frequents your home or fields, during which seasons?
(*Frequency:3– often, 2 – sometimes, 1 – rarely, 0 – never)*

Wildlife	**Wet season**	**Dry Season**	**Details**
Lion			
Leopard			
Warthog			
Hyena			
Kudu (or other antelope			
Elephant			
Hippo			
Buffalo			
Baboon			
Other (specify)			

How do you protect your livestock and crops from wildlife? Is it effective? Explain.

Give details of any domestic animals that have been lost to wildlife in the community:

Type of domestic animal killed	Species of wild animal killer	Details (dates, other animals injured, etc)

Is wildlife regarded as a benefit from your environment to the community

(For Mozambique, put these questions in the past tense, as the village is in a buffer zone and hunting is not allowed)

Is there any hunting for wildlife in your community?

If yes, give details – type of animal, type of hunting (eg snares, dogs, pits, arrows, guns, etc), use of animal (sale, family meat, biltong for sale or for family consumption). If biltong is for sale, give details of the marketing.

Are there any professional hunters in your area? If yes, do you have any relationship with them? If yes, explain. Do you regard professional hunters as useful or not useful? Explain.

What are the wild life regulations?

Does your community observe wildlife regulations?

Do these regulations benefit your community?

Have you heard of CBNRM (Community Based Natural Resource Management)? If yes, give details.

Which is the nearest National Park, Protected Area, or Conservancy? How far away is it from your community?

Have you heard of the Great Limpopo Trans-frontier Park / Conservation Area (GLTFCA)? If yes, what do you know about it?

Do you think that the GLTFCA will benefit your livelihoods? If yes, how? If no, why not?

Is your community involved in a CBNRM programme such as the CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) or other type of wild life management project?

If yes, give details. What are the institutional arrangements? How are local people involved and in what capacity? (casual worker /input provider / outlet seller / community group / administrative mediator / other)?

What are the benefits and costs? What do you think of the programme? Do you think that it is for the environment/wildlife or for people?

If the community was asked to give up any of its land for wildlife production, would they agree? *(For Mozambique: this is a very sensitive issue, people there are not happy with the park creation, so may be find a different way of ask)*

Are there any funding opportunities that you know of?

O. CONSTRAINTS FOR LIVESTOCK FARMERS

What are the constraints to livestock production?

Constraint	**Rank (1 = most important constraint)**
Low quality of pasture	
Lack of water points	
Lack of grazing land	
Predation by wildlife	
Disease from ticks	
Disease caused by interaction with wildlife	
Lack of improved breeds	
Lack of supplementary feed	
High costs of inputs (veterinary services, drugs)	
Poor access to inputs (veterinary services, drugs)	
Unavailability of markets	
Lack of infrastructure	
Other (specify)	

After ranking, discuss causes and solutions to the main challenges.

Describe incidence of cattle theft and cattle rustling. What measures are being taken to prevent this?

P. CULTIVATION

How would you describe the soil quality? Is it suitable for cropping? Which crops?

What are the main crops grown?

Describe the yields. Have the yields changed over time?

Q. COMMON PROPERTY RESOURCES

What common property resources occur in the area? (forests, woodland, grazing, wetlands, rivers, springs, lakes, etc)

What are the rules of access, use and management around these resources?

Are there any threats or conflicts around common property? If so, what is the nature of threat or conflict and how is it being resolved?

Community ranking of importance of natural resources: land, trees, forest products, wildlife, water, minerals, etc.

R. ADAPTATION

What hazards (disasters) have been experienced in the last 5 years? (eg: droughts, floods, human disease epidemics, animal disease out breaks, animal predation)

Hazard	**Response**

Do you think that the climate has changed over the last 5 – 10 – 20 years? If yes, explain. (Construct a time line of climatic events – droughts, floods, etc).

How do you cope with persistent droughts (or floods)? Give details of coping strategies and responses to climatic shocks.

Are you getting any institutional support to cope with climatic shocks? If yes, give details?

If no, what sort of help would you need?

Cattle management drought responses

When was the last serious drought?

What was the effect on livestock grazing and watering?

What coping mechanisms were applied to cope?

How many cattle were lost?

S. CREDIT FACILITIES

Does the community have access to credit facilities? In particular, for livestock rearing? If yes, give details – how much, how often, from whom, for what, any conditions attached, repayment arrangements, any defaulting, short and long term benefits?