Baseline Profile

Okavango-Boteti-Chobe Riverine Crops and Other Income Livelihood Zone

REPUBLIC OF BOTSWANA
Acknowledgements

The Botswana Vulnerability Assessment Committee (BVAC) would sincerely want to extend their gratitude to the Botswana Government, through the Ministry of Finance and Development Planning for providing transport, financial resources, some office equipment and stationary and the overall coordination of the Baseline Training and Profiling of the Okavango Boteti Riverine Crops and Natural Resources (OBRCNR) Livelihood Zone.

We would also want to extent our gratitude to all government Ministries, who willingly released their senior staff to participate in the four weeks Baseline Training activity to improve capacity of the BVAC.

Thanks are also due to both Central Government and Council staff in Maun and surrounding areas who facilitated the meetings with village leaders and key informants and for providing secondary data that was used in the report.

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Last but certainly not least let me thank the SADC Regional Vulnerability Assessment and Analysis (RVAA) programme through the Programme Management Unit (PMU) for making the whole process a success through provision of trainers, team leaders, stationery and financial resources.

Specifically we would like to extend our gratitude to Peter Muhangi, the lead trainer, James Acidri, his assistant, Daison Ngorazi, Chancy Chilimbila, and Gladys Zimba, who successfully led the assessment teams.
Introduction and Methodology

The newly established Botswana Vulnerability Assessment Committee (BVAC) requires baseline information on rural households as a reference point for modelling likely effects of shocks such as drought, floods and market failure. Such shocks may severely affect people’s ability to maintain their livelihoods and any response needs to be based on information and analysis designed to give solid guidance for short term relief, medium and long term recovery and development initiatives. The essential target for any response would be the household since this is the basic unit of economic operation, and the unit which must try to cope with shocks.

For the above reason, the Household Economy Approach (HEA) was the preferred methodology since it gives both a geographical template of Livelihood Zones, and within these zones an analysis of the livelihoods typical of households within different wealth groups - given that these exhibit different levels of vulnerability to shocks.

The Household Economy Approach (HEA) is an analytical framework, developed between 1992 and 1997 by Save the Children in collaboration with the Food and Agricultural Organization (FAO). The approach provides a framework to predict the likely effects of shocks such as drought and floods on future food supply and livelihood patterns. These predictions are based on an assessment of livelihood patterns in normal (i.e. non-shock) years combined with an assessment of coping strategies.

The baseline training and field work assessment was conducted over a four week period between October 21 and November 14, 2009 in Boteti and Ngamiland Districts. The first week was dedicated to training participants in the HEA methodology including methods of information collection, and practicing how the information will be analysed.

Baseline information was collected for two weeks and the last week was used to analyse the information and start compiling the baseline report.

In total, 14 villages were visited in the Boteti, Maun and Shakawe areas during which 14 interviews were conducted with village leaders and key informants. In addition, 44 interviews were conducted with representatives of the 4 wealth groups defined by the Community leaders & key informants in their respective villages in the zone. Follow up interviews were also conducted with selected key informants at village and District levels.

The baseline assessment focused on understanding the various household sources of food, income and expenditure patterns among the four wealth groups defined by community key informants. It also explored the issues related to household vulnerability in case of shocks as well as the coping strategies and options they undertake during bad years.

Household economy analysis establishes a picture of typical, normal livelihood patterns for households in a specific livelihood zone. In order to understand the range of conditions that local communities must cope with in most years, a “year ranking” exercise was conducted with community leaders. The community leaders discussed and ranked individual years over the past four years, and identified the determinants of what makes a year “very good,” “good,” “normal/average,” “bad” and “very bad”.

The details of the year ranking by the community leaders and the assessment team were then used to identify the year 2008/2009 as the baseline or reference year for the livelihoods assessment and analysis.

The identified baseline year (2008/09) was characterized by the following:

- Fairly good rains although the rains were too much in some places resulting in flooding.
- Better crop harvest compared to 2007/08 especially in the dry land although molapo farming was adversely affected by massive floods.
- Crop destruction by Quelea birds and elephants
- Good grazing conditions as a result of good rainfall in the zone.
- Recurring problems of cattle diseases.

Main Conclusions and Implications

Crop production is a main source of income in the zone contributing over 30% of the Very poor household food access in the reference year and over 60% for the Better- off. There is potential for increased
production for both consumption and for sell if problems caused by wild animals (elephants) especially in the southern parts of the zone are addressed. The current support by government in the agricultural sector (provision of seed, fertilizer and ploughing costs) should be done hand in hand with improved management of the wildlife.

The very poor and poor households heavily rely on off-farm and on-farm activities for their incomes and in times of drought, off-farm activities like weeding are severely affected resulting in loss of income. The current public works programme (Ipelegeng) would address this problem but needs to be expanded to cover more households and should be better targeted to ensure the poorest households get most employment opportunities.

There are a number of Livelihood support programmes that the government is implementing in the zone. These include provision of seed, fertilizer, livestock drugs, field fencing, ploughing and are aimed at boosting production and hence improving livelihoods.

The main concern is the lack of adequate targeting and monitoring of these interventions to ensure maximum impact on beneficiaries (who should mainly be the very poor and poor wealth groups)

Expenditure on staple and non staple food by the very poor and poor households accounts for 53% and 43% respectively, of total household expenditure. This makes food the most expensive item on the household expenditure list. It is worth noting that such households will be seriously impacted by increases in the price of food and therefore there is need to closely monitor changes in price of food especially maize meal.

Household expenditure on social services is low for all wealth groups and this is partly attributed to the government intervention in the social services sector such as health and education. In addition, government support in the agricultural sector in form of provision of inputs has resulted in households having to spend less on these essential items. It would be appropriate if such support is more targeted to benefit the poorer wealth groups since the wealthier households have enough resources to look after themselves.

The very poor and poor wealth groups barely managed to meet their minimum food energy requirements in the reference year and their expenditure more or less equals to total income. These groups are living on the edge and any shock will push them into deeper vulnerability and poverty. Additional ways to further improve their livelihoods should be investigated.

The education costs are subsidized by government making it affordable for all but due to some differences in the wealth status of households, children of the very poor and poor are generally not able to progress with their education. The other challenge in the zone are lack of facilities such as electricity, highly qualified teachers, adequate classrooms as well as stationery.

A significant proportion of incomes for the very poor and poor is derived from old age pensions amounting to about 20% of total income for a typical very poor household income. There is need to investigate feasibility of other income generating projects such as keeping of small livestock, so as to help these households support themselves and the pension becomes supplementary income.

**Zone Description**

The zone covers parts of Okavango, Boteti and Ngami sub Districts of Ngamiland District. **Chobe area will be covered later.** This is a lowland region, with average annual rainfall of 450-660 mm that falls between November and March. Temperatures soar to a maximum of between 25-42 °C during summer (Seleno) and drop to a low of 15-20 °C during winter (Marija). The main geographical features found in the zone include among others the Okavango River which flows in to the Okavango swamps and give rise to the Thamalakane and Boteti rivers. In the south lies the Lake Ngami and on the western side of the Okavango pan handle is the historical Tsodilo hills. Soil types found in the zone are the Kalahari sand deposits, Sandy-loamy infertile soils and fertile alluvial soil deposits around rivers. The zone is linked by a main tarred road from Maun to Mohembo, Maun to Orapa and a gravel road linking Mohembo and Beetsha on the northern side of the Okavango River. This zone has an estimated population of..... People.

The area is characterised by mixed agriculture of both crop and livestock farming, with riverine cropping (molapo farming) especially in the northern parts of the zone.

Fishing (mainly for household consumption) is also common especially for areas near rivers and swamps.
In the Okavango area, crop farming is more predominant while livestock is more predominant in Ngami and Boteti areas. Overall, the zone can be described as having high potential for livestock farming and low to moderate potential for crop production.

Crop farming is mainly rain fed and flood recession (molapo). The main cropping season is rain fed and starts in November to Mid-February while the minor Molapo farming season starts from October to November.

Crops grown for consumption include Millet, maize, sorghum, cowpeas, pumpkins, groundnuts and the main crops grown for sale are Green maize, sweet reeds and water melons. The cereal crops are sometimes sold when households have surplus or need cash for other household requirements.

Most poor households use hand hoes for cultivation while draught power and tractors are used by wealthier households. The ministry of Agriculture however, supplies tractors as well as seeds for maize, cow peas, millet and sorghum.

The main economic activities of the area are livestock sales, mainly cattle (within the zone) and goats, fishing, mining in Orapa and tourism related activities such as lodges, sale of crafts and employment at tourist facilities and activities. These activities avail seasonal employment opportunities for households. Agricultural activities that require most labour such as weeding and harvesting are important sources of income for the very poor and poor households.

The natural resources found in the area such as wildlife in the Moremi game reserve, fish and wild fruits also present an opportunity for exploitation by communities to sustain their livelihoods.

The main types of livestock are Cattle, Goats, Sheep, Chicken and donkeys which are reared in the free communal grazing areas and provide a source of milk and meat for consumption and income. The source of water for livestock in the wet season is major rivers, seasonal pools and shallow wells.

The zone is characterised by recurring animal diseases such as, Parasites, Lumpy skin, Black leg and Foot and Mouth Disease which affects all the cloven hoofed animals particularly cattle. Although the Ministry of Agriculture uses the Foot and Mouth (FMD) vaccine to vaccinate all the affected cattle free of charge, the presence of the disease has resulted in restrictions for marketing of cattle outside the zone.

Markets and Trade

Main food markets are locally situated within the zone and the majority of households (especially in villages close to urban areas) have good access to the food markets. The main trading areas are Maun and Shakawe towns but other areas have Super markets and local shops spread out in the zone. The markets function well and provide a reliable supply of food and other basic household items.

Households intending to purchase food items in bulk and at discounted price occasionally travel to the urban centres like Maun and Shakawe but this is mainly practiced in villages that are close to the main towns due to additional costs of transport that one would incur.

Access to markets to sell agricultural produce and livestock/livestock products is difficult given the remoteness of most villages, coupled with lack of a bridge across the Okavango. Agricultural produce is purchased by the Botswana Agricultural Marketing Board (BAMB) who may not offer competitive prices thus discouraging farmers.

Seasonal calendar

The above calendar outlines the months during which various agricultural and other activities are carried out. The colour bars show the period in which various activities take place. Although activities such as ploughing and planting are done by both men and women, respondents indicated that women are more involved in planting, while men do more of the manual work such as ploughing.

Community Wealth Breakdown

The wealth breakdown exercise was determined by the descriptions that the community key informants made of the typical characteristics (determinants of wealth) that differentiated each wealth group. Four wealth groups were identified by the key informants namely the very poor (Bathoki), the Poor (Bahumanegi), the Middle (Badiidi,) and the Better-off (Bahumi).
In terms of proportion of total households in the different wealth groups, the very poor and poor make over half of the population with 33% and 31% respectively. The middle and better-off households are about 25% and 11% respectively, of total households in the zone.

The main determinants of wealth in the zone are livestock holdings, and amount of land cultivated. The wealthier households own significant numbers of cattle and goats while the poorer households typically own very small numbers of livestock – usually goats and chickens.

In rural Botswana, there is open access to land regardless of wealth status. The amount of land cultivated, however, varies significantly by wealth status. The wealthier households are able to cultivate larger areas and use animal draught power, tractors and planters. The poorer households, on the other hand can only cultivate small pieces of land mainly because they have to work elsewhere for money and this reduces the time available to do own crop production. In addition, the poorer households use basic tools like hand hoes and therefore cannot cultivate large pieces of land.

Education in Botswana is free for primary school level and households pay a small annual fee of about P300 for junior secondary schools, P450 for Senior Secondary schools and buy uniform and other necessary items for school children. The other major costs to the household would be if the schools are far off and the households have to incur transport costs. Typically, most children from poorer households drop out of school at Standard Seven or Junior Certificate and few reach Senior Secondary level while most children from better-off households are able to attend tertiary education.
The level of education of breadwinners and the level they can afford to promote their children to, that is upper secondary and tertiary level is equally a crucial determinant of wealth in the zone. The importance of level of education is highlighted in the proportion of income the wealthier households get from formal employment and the likely guarantees from their educated children. For the poorer households, the opposite is true in that the restriction to primary school or Junior Certificate education, limits their long term capacity to obtain better paying jobs.

Income activities mainly done by the poorer households include casual labour (mainly weeding), herding, selling of grass, house-smearing, selling of crafts, collection and selling of wild fruits, public works activities (Ipelegeng), fishing and domestic work.

Income activities for the wealthier households include sale of livestock, sale of crops, selling of crafts, formal employment, trade, and fishing.

In terms of ownership of productive assets, the very poor and the poor typically own hand hoes, axes, machetes and sickles; the poor own hand hoes, machetes, axes, sickles, hand made fishing nets, donkey carts and mould board ploughs. The wealthier households own fishing nets, ploughs, donkey carts, planters and some own tractors.

Sources of food

The main sources of food across all wealth groups in this livelihood zone include own crop production, livestock products, purchase, labour exchange and food transfers. Own crop production and purchase have a significant contribution of about 33-64% and 28-63% respectively across all wealth groups. Labour exchange contributes about 6% of annual consumption for the very poor and the poor households. Livestock products including milk and meat provide 5%–23% of annual consumption for the poor, middle and better off households. Below is a detailed description of how each source contributes to the household food income for each wealth group.

Own crop production

The main food crops grown by all wealth groups in this zone are millet, maize, sorghum and beans. Millet is the main staple hence all households strive to produce as much as they can. As a percentage of total annual consumption, Own crop production contributes 64% for better off, 59% for the middle, 45% for the poor and 33% for the very poor.

The wealthier households cultivate bigger pieces of land and also use more modern farming equipment and tools. This contributes to higher production and more reliance on own crops compared to the poorer households.
**Purchase**

Food purchase is a main source of food for all the wealth groups in this zone and main food purchases are done during the hunger period (October – January). During other months of the year, households still purchase food to supplement what they got from own production.

The main food purchased is maize meal and other food purchased by all wealth groups included cooking oil, beans, fish and meat. The contribution of food purchases to annual consumption stands at 63% for the better-off, 28% for the middle, 31% for the poor and 36% for the very poor. Although all wealth groups purchase food, the very poor and poor households’ expenditure is mainly on staple foods while the wealthier households spend significant amount of money on items like meat, sugar, rice and cooking oil.

It is important to note that although all wealth groups purchase food items, the very poor and poor spend approximately 20 – 30% of their total annual income on staple food as compared to 10% for the middle and 9% for the better off.

**Food Transfers:**

This is an important source of food for all wealth groups and it is supplied by the Government of Botswana through school meals and the nutrition programme for children five years of age and below. Average number of 2 children in school was used to estimate the food consumed from school meals and one child per household on the nutrition programme for children below five years, was used to estimate the contribution to annual household consumption. The food transfers contributed about 12% of reference year consumption. Other food transfers in the zone are for orphans and vulnerable children (OVCs), including those who are terminally ill and destitute persons. The number of households in these transfers is small and as such this transfer is not included in the typical household sources of food.

**Labour exchange for food**

Labour exchange is not a very typical source of food in the zone as most households which hire labour pay in cash. The very poor and poor households accessed 5% and 6% respectively from labour exchange and the main activities for this source of food are weeding and harvesting. It appears payment in kind is more common in the north of the zone while cash is the main form of payment in the southern parts of the zone. This could be attributed to the fact that there are big urban areas such as Maun in the southern part and cash transactions are more typical.

**Livestock products**

The middle and better off obtain a significant proportion of their food energy from livestock products especially milk. The middle obtained 11% while the better off obtained 23% given the higher number of livestock they own. The poor obtained 5% of food energy from livestock products. Given the high number of livestock in the zone, coupled with the long distances from urban centres, most households are not able to find market for the milk and consume most of it. This explains the high contribution of milk to the calories accessed by the middle and better off.

**Gifts**

Social support networks are still strong in the zone and as such, the poorer households receive gifts from the wealthier households especially after the main harvest. In the reference year, the very poor and poor received gifts equal to 4% - 6% of their annual consumption.

Fishing is mainly practiced in the northern part of the zone along the Okavango River. A licence is required for one to fish for commercial purposes but not for fishing for home consumption. Villages close to the rivers have access to fish and those far off buy the fish at high prices

**Sources of Cash**

**Employment**

Employment is an important source of income for all wealth groups, the poorer households getting a significant proportion from casual labour such as weeding and smearing house while the wealthier households engage in more formal employment such as government workers and in the private sector. Employment contributed 53% of total income for the very poor, 38% for the poor, 22% for the middle and 7% for the better off. Public works programmes (Ipelegeng) are a regular source of income in the zone although the number of people involved is small and employment is on a rotational basis.
**Self employment**

Self employment activities such as crafts, sale of construction materials, fishing and brewing are important sources of income especially for the very poor (27%), poor (40%) and middle (25%). Selling of crafts in particular is linked to the tourism and tour activities in the zone. The materials used for crafts are not seasonal and this guarantees supply throughout the year. Brewing is done by all wealth groups but for the very poor, it is in the form of casual labour where by they are employed by the middle to do brewing.

**Sale of livestock and livestock products**

The middle and better off households sell livestock and this contributes 17% and 24% respectively, of total annual incomes. The main livestock sold are goats and cattle.

In addition to sale of livestock, the middle and better off sell livestock products especially sour milk and this contributes about 12% of total incomes for the two wealth groups. In the reference year, livestock sales were restricted to butcheries within the zone due to restrictions on livestock movements imposed following the outbreak of Foot and Mouth disease (FMD). The restrictions also led to low prices for livestock due to the limited local market.

**Sale of crops**

The middle and better off households sell some of their crop production especially when they have some surplus and the main crops sold are maize, sorghum and sweet reeds. Crop sales contribute 3% of total income for the middle and better off and therefore not a main source of income.

**Trade**

Trade is commonly practised by the middle and better off households and is the most important source of income for the better off contributing 37% of total income, while it is also significant for the middle contributing 15% of total income. Trade activities include shops and bakeries.

**Old Age Pension**

This safety net is aimed at financially assisting the elderly who are 65 years and above and it is not means tested. Based on estimations by the community members and the official statistics, approximately 40% of the households earn income from old age pensions and therefore a percentage of total old age entitlement was used for a typical household income.

Old age pension is an important source of income for the very poor and the poor contributing 20% and 16% respectively as compared to the middle and the better off for whom pensions contribute 6% and 3% respectively.

![Sources of Cash](chart.png)

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<tr>
<th>Annual Income in Pula</th>
<th>Very Poor</th>
<th>Poor</th>
<th>Middle</th>
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Expended Patterns

The expenditure patterns of the wealth groups in this livelihood zone vary significantly across the groups. The very poor and poor households spend 30% and 22% of their total income on staple food purchases as compared to 10% and 9% for the middle and better-off households, respectively. Staple purchases as a percentage of total household expenditure stands at 37% for the very poor and 26% for the poor.

The combined (total) expenditure on staple food and non-staple food for the very poor and poor households is 53% and 43% respectively, of total annual household expenditure. This makes food the most expensive item on the household expenditure list. It is worth noting that such households will be seriously impacted by increases in the price of food.

Expenditure on social services by the poor and very poor households is very significant at 22% and 19% respectively, of the total household expenditure. The most significant area in social services is education costs especially uniform. Expenditure on social services as a percentage of total household expenditure decreases with wealth status as the very poor spend 22%, the poor 19%, while the middle and better off spend 15% and 5% respectively.

Overall there is low expenditure on social services mainly because government subsidises services like health and education in addition to support in the crop and livestock sector where ploughing costs, fertilizers and vaccines are provided by government.

‘Other’ expenditure include transport, beer, gifts, festivals and community obligations and all wealth groups have a proportion of their total expenditure going to other items.

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<tr>
<th>Annual Expenditure in Pula</th>
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Hazards

Livestock diseases especially Foot and Mouth Disease is the biggest problem faced by households owning cattle. The disease attacks animals every year resulting in restriction of livestock movements from affected areas. This affects sales as people are not allowed to sell out of the area for example to the Botswana Meat commission (BMC). In addition, because of restricted livestock movements and the limited local market, farmers are forced to sell at low prices in the local butcheries and occasionally to individuals. Other livestock diseases include lumpy skin and Black leg.

Wild animals especially elephants are a major problem especially in the southern part of the zone. The elephants destroy crops and this is one main reason why crop production in very low in the zone. There have been attempts to scare away elephants by using pepper but this has not been very successful.
Quelea birds (*Thaga*) and corn cricket (*Setotojane*) are very destructive and affect crop production in the zone.

Drought occurs about once in every three years and is severe about once in every 5 years. Drought seriously affects both livestock and crops and therefore has adverse consequences in the area.

Fire out breaks are common in the dry season and cause massive destruction to pastures, and human settlements. The zone is relatively flat especially in the south and this makes it easier for fire out breaks to spread very quickly posing danger to humans, livestock and wildlife as well as causing destruction to both assets and natural resources.
Appendix I

Villages visited during the Assessment

Shorobe, Komana, Toteng, Makalamabedi, Motopi, Samedupe, Chanoga (in southern Ngamiland District); Estha 6, Sekondomboro, Beetsha, Mohembo West, Ngarange, Xhaoga, Nxamasere in northern part of Ngamiland District.

Map showing villages visited during the assessment
Appendix II
Livelihood Zone map

Botswana Livelihood Zones

Major settlements
Population (2001 Census)
- Up to 25,000 people
- 25,000 to 150,000 people

Capital City

Hydrology
- River, large
- River, small
- Stream
- Non-perennial streams and rivers
- Underground courses
- International boundary
- District boundaries
- Dams
- Pans and non-perennial bodies
- Swamps
- Lakes and wide rivers
- Underground pans and bodies

Livelihood zones
- Restricted area
- Protected parks and reserves
- Government
- Tuli and Tsel Blocks exclusive access
- Ghanzi-Kgalagadi exclusive access grazing
- Pandamatenga exclusive access cropping
- Communal exclusive grazing
- Open access livestock
- Central-Southern open access livestock and upland crops
- Central-Southern livestock, upland crops and non-farm income
- Okavango-Dietle riverine crops and other income
- Open access livestock and natural resources
- Okavango-Chobe-Nkai natural resources
- Urban and peri-urban exclusive
- Urban and peri-urban open-access
Appendix III

Government Support programmes in Botswana in the Baseline year

Crop Production: The government of Botswana provides support to farmers with the objective of increasing production and income. These are:

Ploughing: The Government provides tractors to plough up to 5 hectares per household. In case a farmer ploughs their own fields, Government pays P400 per Hectare ploughed up to 5 Hectares and the farmer is subsidised at 50% for extra up to a maximum of 16 hectares.

Seed Distribution: A package of free seed is distributed to eligible households and this includes 2 kg of beans, 10 kg of maize, 10 kg of sorghum and 2 kg of millet. This is mainly for open pollinated planting.

Fertilizer: Free fertilizer is distributed to farmers (4 bags/ha) to cover up to 5 hectares. In addition, government provides fertilizer enough to cover up to 11 hectares at a 50% subsidy.

Cluster Fencing: Government supports farmer groups by providing fencing material such as razor wire to protect crops from wild animals and livestock

Livestock: The government treats livestock free of charge for all major diseases such as Foot and Mouth Disease, Anthrax, Contagious abortion and Black Quarter. The livestock owners pay for any other diseases.

School feeding: All children in primary schools are provided with a meal for all schools term days. The food items in the school meals are sorghum, beans, samp, beef, cooking oil, milk and bread.

Old age pension: All citizens aged 65 years and above receive a monthly pension of P220.

Supplementary feeding for children below five years: This is supplied free of charge through health facilities throughout the country and the package includes highly nutritious foods such as Tsabana, Tsabotlhe, cooking oil and beans.

Orphans Support: Government support package to orphans and vulnerable children contains maize meal (12.5 kg), Sorghum (10 kg), Rice (5 kg), Sump (2.5) kg, Beans (0.5 Kg), Vegetable oil (0.75 lts) and Milk (3 lts).

Support to Needy Students: Students from very poor households are assisted by government with school fees, school uniform, toiletry and pocket money. In addition, the needy students are also given transport money to and from school based on the distance to school.

Students whose homes are far away from the school are given private accommodation (by Government) and food on a monthly basis. To qualify, one has to be from a destitute household.

Ipelegeng: Public works activities aimed at increasing household incomes of poor households. Main activities include road maintenance, digging wells and clearing bushes. The pay per day is P18.00 for workers and P24.00 for supervisors.
Appendix IV

Botswana Year Ranking and description by Community members

2008/09
Late start of rains
Good rains but too much in some places
Better harvest in dry land but bad in arrears along the river which were flooding
Floods destroyed crops under molapo farming
Destruction of crops by elephants
Pastures good especially near river
Ranking: 3 out of 5 therefore a fair year in comparison to other years

2007/08
Elephants destroyed crops
Short winter rains
Harvest better than 2008/09
No livestock sales due to Foot and Mouth Disease (FMD) outbreak
Ranking 4 out of 5 therefore a fairly good year

2006/07
Rains more reliable than 2008/09 but less reliable than 208/09
Harvest good but destroyed by rains
Persistent problems caused by elephants
Ranking: 3 out of 5, therefore a fair year

2005/06
Very little rains,
Water problems had to dig wells in the river bed
Some animals died due to drought
Drought relief assistance
Ranking: 1 out of 5 therefore the worst of the four agricultural years
### Appendix V

**Assessment Team members**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization and Department</th>
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<tbody>
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<td>Boitumelo Keabilwe</td>
<td>Ministry of Local Government- Local Government</td>
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<tr>
<td>Godfrey Gorongang</td>
<td>Ministry of Works &amp; Transport- Central Transport Office</td>
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<tr>
<td>Otlathusa Tshekiso</td>
<td>Department of Water Affairs</td>
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<td>Eric O. Mesho</td>
<td>Ministry of Agriculture – Department of Animal Production</td>
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<tr>
<td>Priscilla Mbaiwa</td>
<td>Ministry of Environment Wildlife and Tourism</td>
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<td>Imran Nedi</td>
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<td>Maureen Mwawa</td>
<td>Ministry of Agriculture and Food Security (Malawi)</td>
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<td>Lame C. Ntebang</td>
<td>Ministry of Agriculture-Department of Agri-Business Promotion</td>
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<td>Rebecca Hange</td>
<td>Ministry of Agriculture – Department of Crop Production</td>
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<td>Chancy Chilimbila</td>
<td>Malawi VAC (Team Leader)</td>
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<td>Gladys Zimba</td>
<td>Consultant (Team Leader)</td>
</tr>
<tr>
<td>James Acidri</td>
<td>Namibia VAC (Trainer/Team Leader)</td>
</tr>
<tr>
<td>Daison Ngirazi</td>
<td>Zimbabwe VAC (Team Leader)</td>
</tr>
<tr>
<td>Peter Muhangi</td>
<td>Lesotho VAC (Lead Trainer/Team Leader)</td>
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