

Baseline Profile

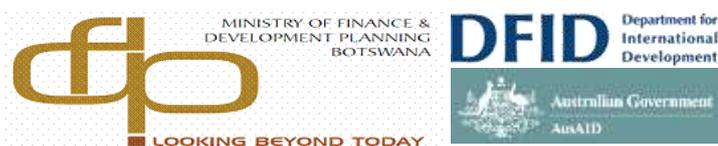


Open Access Livestock and Crops
Livelihood Zone



Republic of Botswana

Financed by:



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Implementation partners:



Republic of Botswana



- Ministry of Finance & Development Planning - EMP, CSO, Macro, PDC;
- Office of the President - Disaster Management Office;
- Ministry of Local Government - Dept of Local Government Finance & Procurement/Food Relief Services, Dept of Local Government Technical Services, Dept of Social Services, Dept of Local Government Development Planning - *Ipelegeng*
- Ministry of Environment Wildlife & Tourism - Dept of Meteorological Services, Dept of Forestry & Range Resources, Dept of Wildlife & National Parks;
- Ministry of Agriculture - Dept of Crop Production, Dept of Animal Production, Dept of Veterinary Services, Dept of Agric-business Promotion, Dept of Agricultural Research;
- Ministry of Minerals, Energy & Water Resources - Dept of Water Affairs/Water Utilities;
- Ministry of Health - Department of Public Health -Nutrition & Food Control Division
- Ministry of Lands & Housing - Dept of Lands, Dept of Surveys & Mapping;
- Ministry of Labour & Home Affairs - Dept of Labour
- Ministry of Trade & Industry - Dept of Trade & Consumer Affairs
- Ministry of Works & Transport - Central Transport Office (CTO)
- Botswana Agricultural Marketing Board, Bank of Botswana, National Food Technology Research Centre
- Botswana Red Cross Society
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- Botswana Council of Non-Governmental Organisations (BOCONGO)

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Botswana Vulnerability Assessment Committee

May 2010

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Acronyms

BMC	Botswana Meat Commission
BVAC	Botswana Vulnerability Assessment Committee
BWOLC	Open Access Livestock and Crops Livelihood Zone
CSO	Central Statistics Office (now Statistics Botswana)
CWCs	Child Welfare Clinics
FMD	Foot and Mouth Disease
HEA	Household Economy Approach
ISPAAD	Integrated Support for Arable Agricultural Development
KIs	Key Informants
LIMID	Livestock Management and Infrastructure Development
LSD	Lumpy Skin Disease
OVCs	Orphan and Vulnerable Children
SADC	Southern African Development Community
VDCs	Village Development Committee
VET	Village Extension Team

Introduction and Methodology

The 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. This profile focuses on the livelihoods of the Open Access Livestock and Crops Livelihood Zone (in North West district and a small portion of Ghanzi district).

The baseline information for the zone was collected from eight villages using the Household Economy Approach. The villages covered were; Tsodilo, Chukumuchu, Gani, Nxaunxau, Bothatogo, Tsau, Kareng and Grootlagte. Data collection was done within seven days and the following five days were used for data analysis and report writing. Eight (8) interviews were conducted with village leaders and key informants and 24 interviews were conducted with groups of representatives of the four wealth groups defined by the community leaders and key informants in their respective villages in the zone. This baseline assessment focused on understanding the various household sources of food, income and expenditure patterns among the four wealth groups of the livelihood zone.

The household economy analysis was used to establish a picture of normal livelihood patterns for typical households from each of the wealth groups in the zone. First, a year ranking exercise was conducted with community leaders and the details of the year ranking by the community leaders and the assessment team were then used to identify the 12-month period from March 2009 to February 2010 as the baseline or reference year for the livelihoods assessment and analysis. The baseline year identified was characterised by average rainfall, harvest, pasture, milk production, wild food, water, less poisonous plants and fair livestock prices.

Main Conclusions and Implications

- Households in the zone depend heavily on either livestock sales (for better-off households) or casual labour (for the poorest) for their livelihoods. There is the addition of arable crop production, which is conducted by all wealth groups. The main types of food crops grown in the zone are millet, maize sorghum and beans which are mainly drought resistant (drought susceptible).
- The zone has high livestock (cattle, goat, sheep and chicken) stocking rate, so livestock products such as milk and meat are very important for households' livelihoods. Poorer households (very poor and poor) obtain around 35% of their food needs from government food assistance, which also contributes around 13% of their total income. As such, any change in the amount of food provided through these safety nets will impact on livelihoods, as any 'lost' food will have to be purchased instead. Household incomes for the 'very poor' wealth group would fall below the livelihoods threshold.
- All wealth groups purchase a significant proportion of their food—26% to 56% of their energy requirements are bought with cash. The very poor and poor households' purchases are mainly on staple foods while the wealthier households spend significant amount of money on items like meat, sugar, rice and cooking oil. Poorer households are therefore highly vulnerable to staple food price increases.
- Sources of income are more varied among the poorer households (very poor and poor) with each source of income contributing a small proportion of the total while the middle and better off have mainly two sources (formal employment and livestock sales) both of which contribute a high proportion of their total income, 71% for the middle and 98% for the better-off.
- All the households meet and exceed their food energy needs (the very poor: 110%, poor: 126%, middle: 151% and better-off: 160%). Dietary quality is more of an issue with the poor obtaining a very basic diet, while the better-off can afford considerably more variation.
- Total incomes (the sum of all food and cash incomes) for all wealth groups exceed both livelihoods and survival thresholds. However, the incomes for the very poor wealth groups are close to the livelihoods threshold and households from this group will easily fall below the threshold in the event of even a mild hazard. Poorer households also, do not have a continuous or consistent source of income.
- Foot and Mouth disease is a major hazard for households which own cattle in this zone. Wild animal especially elephants negatively affect crop production in the zone and lead to low production in the zone.

Zone Description

The Open Access Livestock and Crops Livelihood Zone is situated in the north-western corner of Botswana, bordering Namibia on two sides. The area lies between 21° and 24° east of the Greenwich and between 18° and 21° 30' south of the equator. It is a lowland region, with an average annual rainfall of 351-550 mm that falls between September and April. Temperatures soar to a range between 29°C and 35°C during summer (*Selemo*) and drop to 8°C and 28°C during winter (*Mariga*). The main geographical feature found in the zone is the historical Tsodilo hills, while the Okavango Delta is nearby in the adjacent Okavango-Boteti-Chobe Riverine and Other Income and Okavango-Chobe-Nxai Natural Resources Livelihood Zones to the east. The zone lies in the *sandveld* with the *Arenosols* soil types sandy soils. Despite poor soils, the zone has moderately high suitability for rainfed crop production because of its relatively good rainfall. The zone is linked to the trans-Kalahari high way by a main tarred road from Ghanzi to Maun through to Molembo (Botswana/Namibia boarder gate).

Table I – Population estimates and projections for the zone by district for 2009, 2010 and 2011

Admin District	Census District	2001 Census		Proj. 2009		Proj. 2010		Proj.2011	
		BWOLC	Dist	BWOLC	Dist	BWOLC	Dist	BWOLC	Dist
Ngamiland	West	13 148	49 642	16 362	61 778	16 766	63 302	17 180	64 864
Ngamiland	East	7 900	72 382	7 588	69 524	7 615	69 767	7 654	70 125
Ghanzi	Ghanzi	1 015	32 481	1 100	35 193	1 115	35 678	1 132	36 211
Total		22 063	154 505	176 568	166 495	25 495	168 747	25 965	171 200

Populations were calculated by overlaying a map of the livelihood zones onto a map of the *enumeration areas* used in the most recent census, which was done in 2001. The populations of those enumeration areas with the greatest portion of their areas lying within the zone were then summed together. As population numbers change year-by-year, the zone populations for 2009, 2010 and 2011 were extrapolated from the yearly district population projections, supplied by the Central Statistics Office (CSO)¹.

In the table above, the numbers under BWOBR are the zone populations for each district, if the zone lies within that district. Further, the table shows population numbers down to individual and there is now rounding; this is standard practice when reporting population data; however, as these are only *projections*, no degree of accuracy is implied.

Seasonal calendar

The colour bars in the calendar below show the months during which various agricultural and other activities are carried out. 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 are more involved in ploughing. The rainy season is spread through the summer months and starts from September, lasting up until April. The zone has one cultivating season in line with the rainy season. The dry crops—maize, millet, beans and sorghum—are harvested in May and June while green crops (maize, watermelons, sweet reeds, beans and pumpkins) are harvested from February to April.

Figure 1 - Seasonal Calendar

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	Blue	Blue	Blue	Blue					Blue	Blue	Blue	Blue
Ploughing	Brown	Brown									Brown	Brown
Planting	Yellow	Yellow									Yellow	Yellow
Weeding	Orange	Orange	Orange								Orange	Orange
Green Harvest		Green	Green	Green								
Dry Harvest					Green	Green						
Threshing							Blue	Blue				
Own consumption		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow					
Hunger								Red	Red	Red	Red	Red
Wild foods/game gathering	Light Green											
Purchase	Pink	Brown	Brown	Brown	Brown	Brown						
Disease Outbreaks	Magenta	Magenta	Magenta	Magenta					Magenta	Magenta	Magenta	Magenta
Livestock sale	Light Blue											
Milking	Orange											
Grafts	Light Green											
Dehorning					Yellow	Yellow						

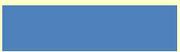
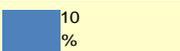
The hungriest period runs from August to December in this zone while from February to July households enjoy food from their own production. Veld products are especially berries are gathered in most parts of the year and the most common are wild *morogo* (wild vegetable), *morama*, *moretlwa*, *motsotsojane*, *mmupudu*, *mogorogorwana*, *mokgompata*, *mahupu*, *mokokose*, *mhamang*. The peak milking season is from January to May, which coincides with the rainy season and therefore it is a period with good grazing and water for livestock.

¹ Mention must be made here of the tremendous assistance rendered by the GIS Section at CSO. The process involved obtaining, organising and cleaning population data for each enumeration area, of which there are more than 9000 in the country.

Community Wealth Breakdown

Communities categorized wealth groups using livestock ownership and sources of cash income and food access as the main determinants of wealth. Household sizes are generally the same for the wealth groups except for the better-off, who are larger with nine members. Although the better-off generally have fewer children their household size is larger because of taking in poorer relatives and domestic workers. Although Government provides free farming implements and seeds for up to five hectares regardless of wealth, the poor and the very poor households cultivate one hectare and below because they typically own smaller pieces of land, while the better-off and the middle cultivate 1.5 and 2 hectares respectively. Livestock ownership is predominantly cattle especially for the ‘middle’ and ‘better-off’ wealth groups, who own between 10 to 50 and 50 to 100 cattle respectively. The ‘very poor’ in this zone own between 0-5 cattle and the ‘poor’ own between 5-10 cattle.

Figure 2 - Wealth break down and descriptions of wealth groups

		Wealth Groups Characteristics								
		HH size	Land area cultivated	Crops cultivated	Livestock Holding					Other Assets
					Cattle	Goats	Donkeys	Horses	Chickens	
Very Poor	 33%	7-12(7)	0-1	Millet; Sorghum; Maize and beans	0-5	0-5	0-4	0-3	0-3	Hand hoes, Axes, Sickles, Cutluses, Knives
Poor	 33%	7-10(7)	1-2	Millet; Sorghum; Maize and beans	5-10	5-15	0-6	0-3	0-8	Donkey Carts, Hand made fish nets, Ploughs
Middle	 24%	7-10(7)	1-3	Millet; Sorghum; Maize and beans	10-50	5-30	3-10	0-6	0-15	Fishing nets, Donkey carts, Ox Ploughs
Better Off	 10%	(7-10)(9)	0-7	Millet; Sorghum; Maize and beans	50-100	20-30	5-15	2-10	0-12	Donkey Carts, Ploughs, Tractors harrows

The wealth group breakdown shows that the zone is dominated by poorer households (the ‘very poor’ and ‘poor’) who constitute 66% of the population and the wealthier households (‘middle’ and ‘better-off’) constitute the remaining 34%. District level poverty head count figures for 2008 show that there are 40-50 % poor people in this zone.

The secondary data confirm the findings of the team that the poorer households in this zone constitute a big percentage of households in the zone.

Livelihood Strategies

Sources of Cash

Households from this zone rely on different activities for their income.

Livestock Sales

All wealth groups in the zone own and sell livestock, which contributes 5% of the total annual cash income of the ‘very poor’, 20% of cash for the ‘poor’, 34% for the ‘middle’ and 62% for the ‘better-off’. Clearly, households from the ‘middle’ and ‘better-off’ earn a large part of their income from livestock sales, the main of which are goats and cattle.

Recently, livestock owners in the Ngamiland part of the zone have experienced low sales and limited local market opportunities. This is due to animal movement restrictions imposed to control the spread of Foot

and Mouth Disease (FMD). Consequently, all cattle sales are restricted to local butcheries and individuals within Ngamiland.

In addition to sale of livestock, the poor and middle sell livestock products especially sour milk. This contributes about 12% and 17% of cash income for the two wealth groups respectively.

Employment

Casual employment is another source of income, especially for the 'very poor' and 'poor' wealth groups; they work for the 'better-off' and 'middle' wealth groups doing activities such as domestic work and agricultural labour. On the other hand, the 'better-off' and 'middle' groups get income from petty trade and self-employment.

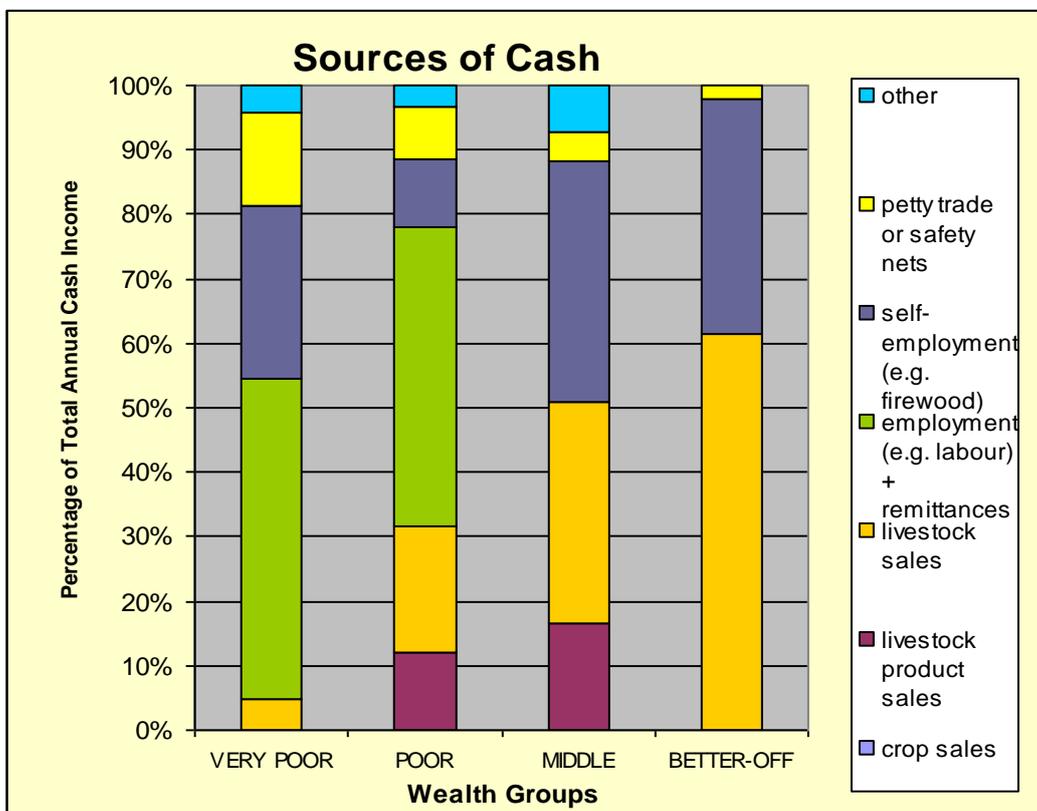
Casual labour employment contributes around 50% of cash income for the 'very poor' and 46% for the 'poor'. Public works programmes (*Ipelegeng*) are a regular source of cash in the zone although employment under the programme is limited because opportunities are provided on a rotational basis and this result in beneficiaries obtaining opportunities for three months in a year. The remuneration on the programme differs according to level of responsibility with supervisors earning P24.00 per day and other labourers earning P18.00 per working day (normally 20 days a month).

The 'middle' and the 'better-off' households engage in more formal employment such as government workers and in the private sector (conservancies). This is very significant: 34% and 36% of the cash earned in a year for the 'middle' and 'better-off' comes from this source. Indeed, it is the access to this cash income that enables a household to build up their herds and enter these two higher wealth groups.

Self employment

Self employment activities such as crafts and the sale of local construction materials are important for cash income, especially for the 'very poor'; as they provide 27% of their annual cash income, while the 'poor' obtain 11%, and the 'middle' only 4%. The local construction materials are mainly poles and thatching grass. The 'better-off' however, do not engage in these activities. The selling of crafts is linked to the tourism and tour activities in the zone, especially around Tsodilo hills. The materials used for crafts are not seasonal and this provides cash income opportunities throughout the year. It is however important to note that continuous cutting of trees for crafts will in the long run negatively affect the environment.

Figure 3 - Sources of cash income



Annual Cash Income in Pula	7 320	13 125	22 789	49 506
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Sale of crops

Households all reported producing crops for their own consumption and as a result there were no significant crop sales.

Trade

Petty trading (classified as other) is undertaken by households from all wealth groups except the 'better-off'; contributing 4%, 3% and 7% of cash income for the 'very poor', 'poor' and 'middle' respectively. Trade activities include brewing, tuck shops, vending and bakeries. The poorer households mainly engage in brewing and selling of traditional brew and households which are engaged in this activity do it throughout the year. The wealthier households on the other hand engage in running tuck shops and vendors.

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.

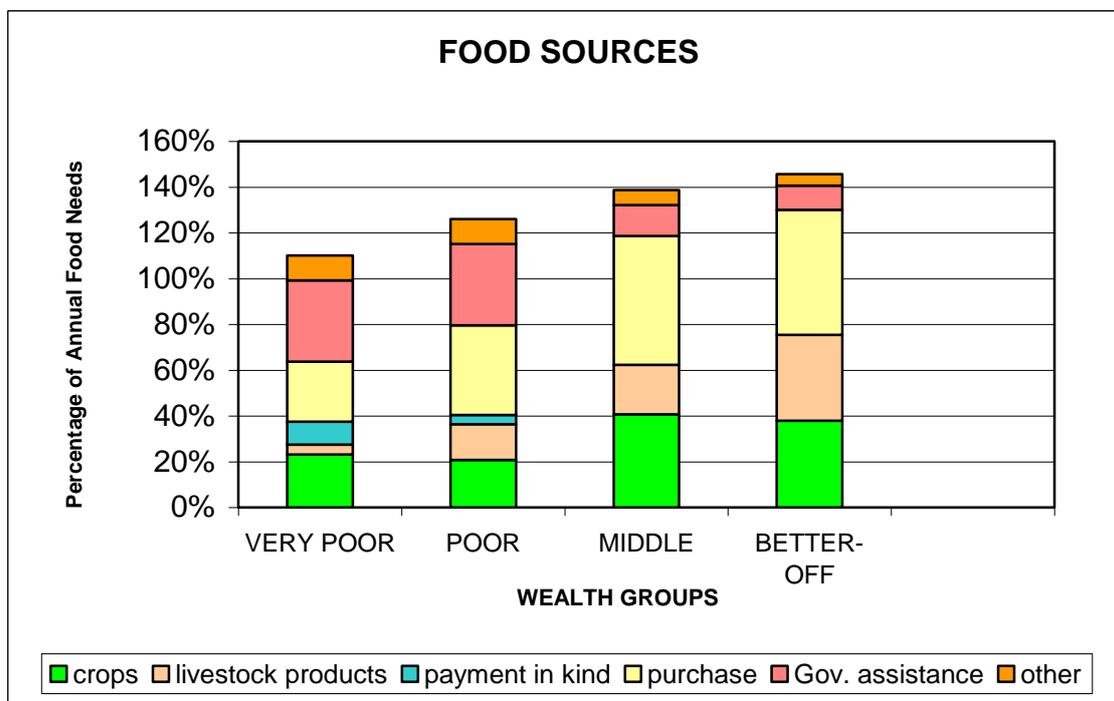
Old age pension is an important source of income more especially for the poorer households as it contributes 14% for the 'very poor' and 8% for the 'poor', while for the 'middle' and 'better-off' it contributes 5% and 2% of total income respectively. This indicates that the wealthier households have other more significant sources of income.

Summary

Overall, sources of cash income are more varied among the poorer households ('very poor' and 'poor') and each source of cash income contributes a small amount, while the 'middle' and 'better-off' are reliant on

two sources: livestock sales and formal employment. This diversified pattern gives the poorest some resilience (they reduce risk through diversification) but it also constrains them in their ability to expand any of these sources. The sources of cash for the 'very poor' and 'poor' include agricultural labour such as cattle herding and weeding, *lpelegeng*, domestic work, self-employment and petty trade. The engagement of poorer households in varied activities partly explains why they are unable to cultivate much of their own land.

Figure 4 - Sources of food (as a contribution towards the minimum average energy requirement)



The main sources of food in this zone across all wealth groups are own crops, livestock products, purchases, government assistance, payment in kind, gifts and a few other minor sources.

Own crop production

Food crops grown by all wealth groups in this zone are millet, maize, sorghum and beans and millet is the main staple in the zone. Millet production therefore contributes 10% of annual food energy requirements for very poor households, 6% for the 'poor', 15% for the 'middle' and 14% for 'better-off' respectively. Sorghum contributes 6% followed by maize at 2% for 'very poor' households. Own crop production in total contributes 38% of energy needs for 'better off', 41% for the 'middle', 21% for the 'poor' and 23% for the 'very poor'.

Although this zone is dominated by livestock farming, crop production does play a significant role, contributing 21-41% of total annual food energy requirements of households in this zone. This significant dependence for food on crop production means that a crop failure could severely impact food consumption in this zone. The level of crop production achieved is also due to Government assistance with production inputs.

Purchase

Food purchases are another major source of food in this zone, especially among the 'middle' and 'better-off' who each purchase 56% and 55% of their annual food energy requirements, while the 'very poor' and 'poor' purchase 26% and 39% respectively. Households purchase food throughout the year to supplement their production, with higher purchases done during the hunger period (August - December).

The staple food purchased is maize meal, while other foods purchased by all wealth groups include cooking oil, sorghum meal, and sugar. Although all wealth groups purchase food, the 'very poor' and 'poor' households' purchases are mainly on staple foods while the wealthier households spend significant

amount of money on items like meat, sugar, rice and cooking oil. The poorer households are therefore more sensitive changes in prices of staple food.

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.

Livestock products

The 'middle' and 'better-off' obtain 22% and 37% of total annual food energy needs from livestock products respectively. The high percentage is consistent with their high number of livestock owned. The 'very poor' on the other hand obtain only 4% of their energy needs and the 'poor' 16% 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 markets for the milk and therefore since they only consume some of it, much is wasted or used for other things such as gifts and feeding dogs.

Safety Nets

All wealth groups benefit from safety nets programmes such as school feeding, 'vulnerable group' feeding for children under the age of five and orphan care food baskets. The orphan care food basket is not means tested. In addition, poorer households get food through the food basket for destitute persons. This explains why the poorer households each obtain 35% of their food from safety nets, while the 'middle' and the 'better-off' get 14% and 11% respectively. This is an indication that the lower wealth groups ('very poor' and 'poor') depend more on government assistance and would be affected by any change in the amount of food provided through these safety nets.

Gifts

Poorer households receive gifts from wealthier households who usually have excess especially after the main harvest. The 'better-off' households also give milk to the poorer households and to relatives who may not be 'very poor', especially during the peak milking period (January to May).

Summary

Despite differences in sources of food, all wealth groups are able to meet their food requirements. However, government assistance does play a significant role, especially for the poorer wealth groups.

Expenditure Patterns

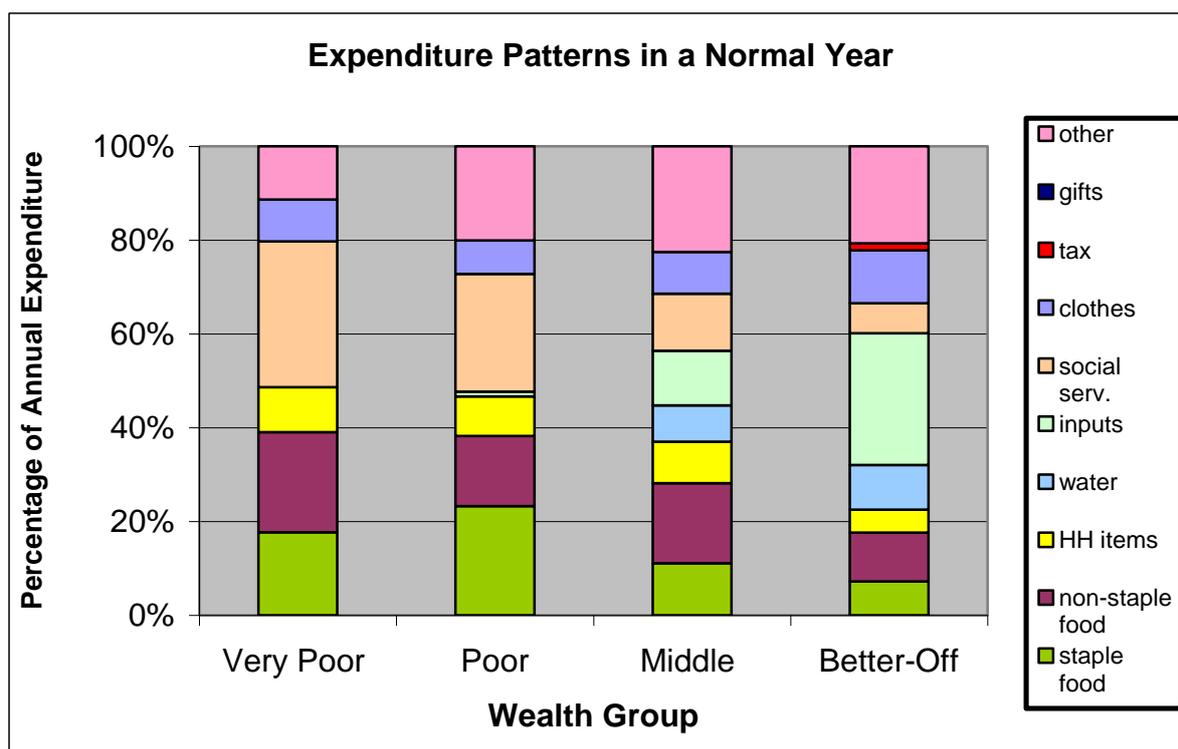
The 'very poor' and 'poor' spend 18% and 23% of their income on staple food respectively, while 'middle' and 'better-off' spend 11% and 7% respectively. The 'very poor' also spend 21% of their income on non-staple food. This shows that expenditure on all types of food (staple and non-staple) uses up 39% of the 'very poor' households' income—a large proportion. Thus, food is the most significant expense for 'very poor' households and they are highly vulnerable to increases in food prices. The percentage on expenditure on food for the 'very poor' is, however, mitigated by the food obtained directly from social safety nets.

A major percentage of the income of very poor households-31%, goes to social services, this is mainly in the form of school uniform, because government subsidises services like health care and school fees. Without government assistance expenditure on social services will be higher across wealth groups. In addition there is government supports for crop and livestock farmers through provision of ploughing costs, fertilizers and vaccines.

However, the better-off and middle groups spend 28% and 12% of their income respectively on inputs while the poorer households are spending almost nothing on the same items. The expenditure for the

better-off households is mainly on purchases of diesel for boreholes and vaccines which are not provided for by Government.

Figure 5 - Expenditure break downs



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

Total Income

Food consumed directly from own production or obtained as payment or as a gift can be converted to cash income, since this food would have been purchased had the household been dependent entirely on cash. The conversion of a food consumed to cash is done by converting the energy of the food consumed into an equivalent staple quantity and pricing the staple. The result is then normalised against the household size of the 'poor' wealth group, so the four wealth groups can be compared.

The result is shown in Figure 6.

The total income is compared with two thresholds: Survival and Livelihoods. The Survival Threshold is the amount of income required to meet very basic survival needs: food (an undiversified diet of mostly staples, with a few proteins and fats added in, very basic health and other household needs. The Livelihoods Threshold on the other hand, is the amount of income it would take to eat a more healthy food basket, afford health care and education, as well as preserving assets base and making some basic investments (such as purchasing seeds) to ensure the household, at the very least, maintains its present standard of living.

Notice that the Survival Threshold is the same across all four wealth groups. This is because this threshold is for a very basic basket of goods and services, and does not depend on a person's wealth status.

The Livelihoods Threshold, on the other hand increases sharply as wealth increases. This is for a number of reasons:

- The Livelihood Threshold is about preserving livelihoods and if a person has more assets, they have to spend more on maintaining and preserving them.
- The Livelihood Threshold includes expenditure such as that on employment and casual labour, which the wealthier households must do to preserve the incomes of the poor.

- The wealthier households have higher expectations of living standards that they would meet before they spend on other 'essential' expenses. For example, these higher expectations include more expensive (and better quality) foodstuffs, services such as secondary or higher education for their children, etc., which they would prioritise ahead of, for example, providing employment or giving gifts to the poor.

Note that as with cash income, the poorest households have more diversified but more limited amounts from different sources, while the wealthier households rely on relatively fewer sources.

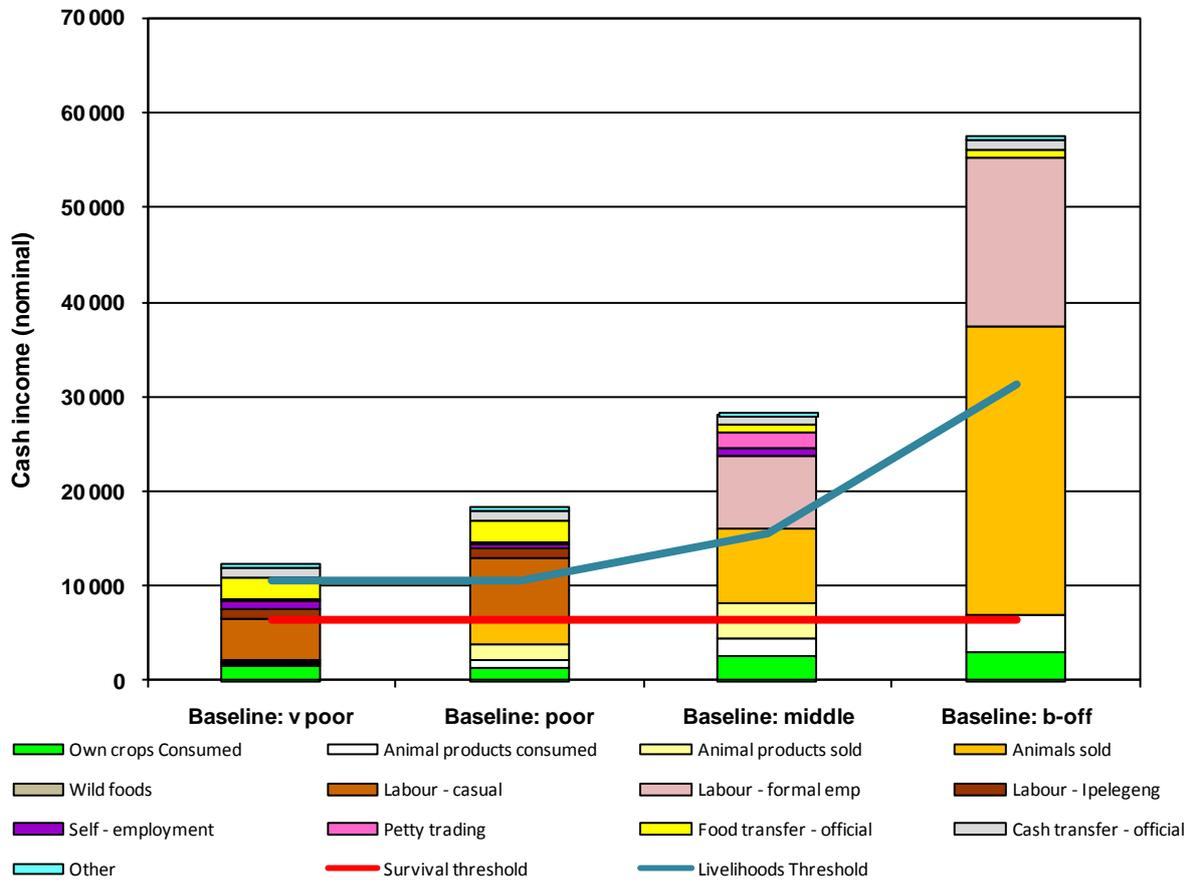


Figure 6 - Total income normalised to poor household size

Risks and Hazards

Livestock diseases especially Foot and Mouth Disease is a major problem faced by households owning cattle mainly in this zone. The disease attacks animals almost 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 or to the Botswana Meat commission (BMC) for example. In addition, because of restricted livestock movements and the limited local market, farmers are forced to sell at low prices in the local butcherries and occasionally to individuals. Other livestock diseases include Lumpy Skin Disease (LSD) and Black leg.

Wild animals especially elephants are another major problem in the zone. The elephants destroy crops and this is one main reason why crop production is low in this zone. There has been an attempt to scare away elephants by using chilli pepper, but this has not been very successful. Predators such as lions, jackals, wild dogs, and hyenas kill livestock in large numbers and some of them are not compensated.

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 outbreaks are common during the dry season and they cause massive destruction to pastures, and human settlements. The zone is relatively flat 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. Poisonous plants (*Mogau - Dicapetalum Cymosum*), this plant occur mostly after the veldt fires and it looks attractive to livestock although it is very dangerous.

Appendix I

Villages visited during the Assessment (see map on next page)

Tsodilo

Chukumuchu

Gani

Nxaunxau

Bothatogo,

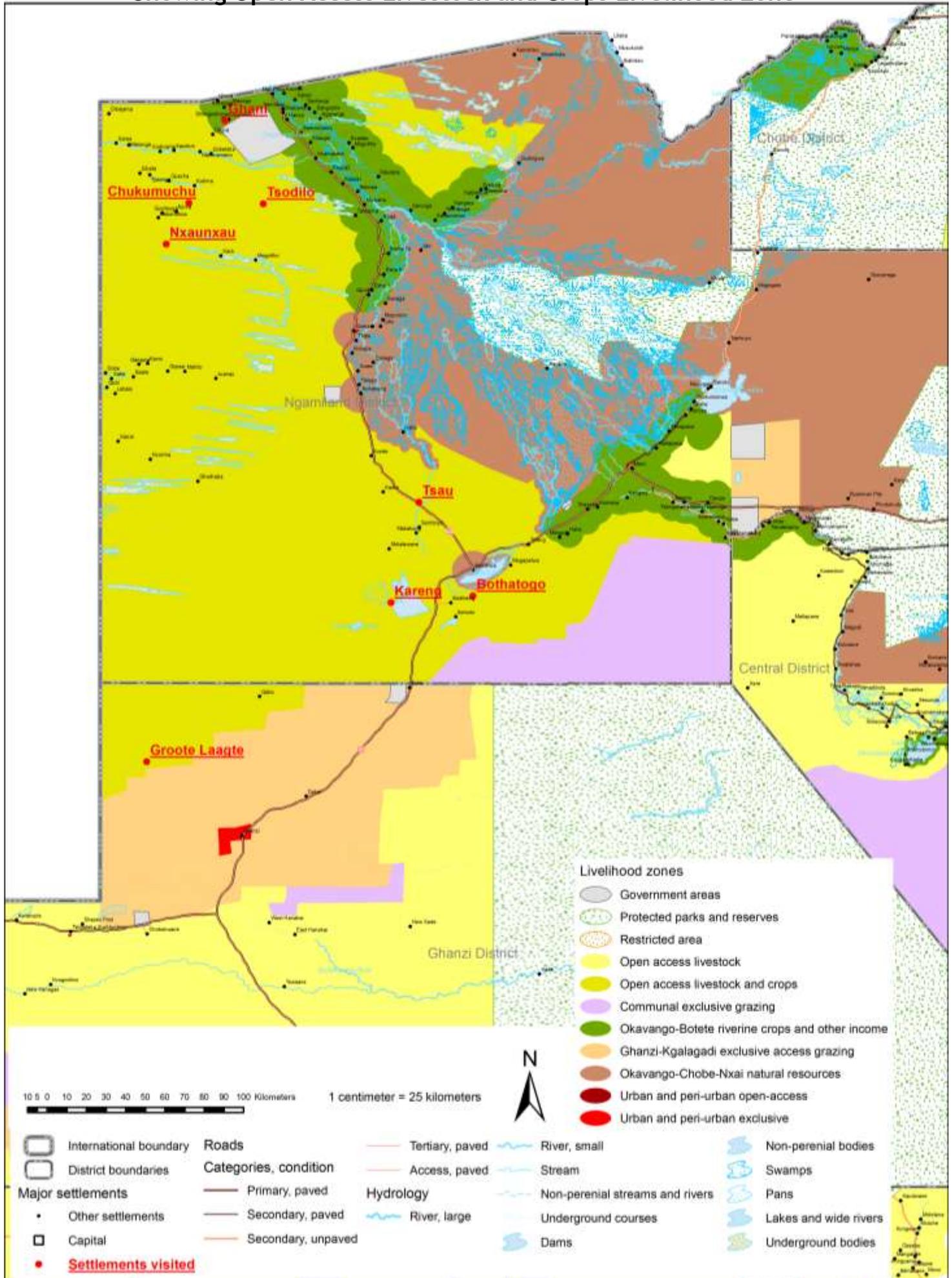
Tsau

Kareng

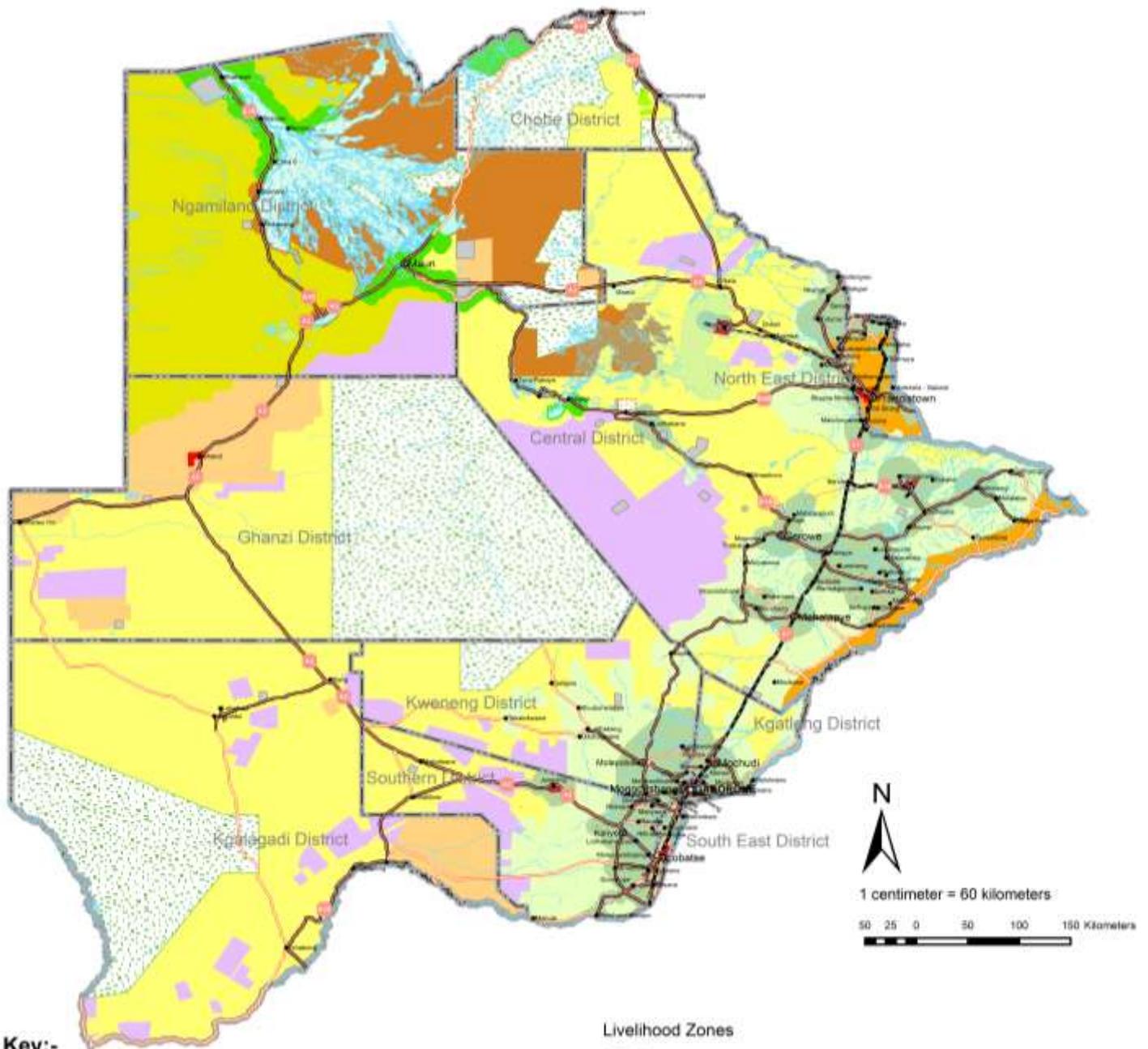
Grootlagte

Map showing villages visited during the assessment

Botswana Livelihood Zones Showing Open Access Livestock and Crops Livelihood Zone



Appendix II



Key:-

Major settlements

Population (2001 Census)

- Up to 25,000 people
- 25,000 to 150,000 people
- ◻ Capital City

Railway

Roads

Categories, condition

- Primary, paved
- Secondary, paved
- Secondary, unpaved
- Tertiary, paved
- Access, paved

Hydrology

- River, large
- River, small
- Stream
- Non-perennial streams and rivers
- Underground courses
- ◻ International boundary
- ◻ District boundaries
- Lakes and dams
- Non-perennial lakes
- Flood plains
- Pans and occasional flooding
- Swamp
- Islands
- Underground water bodies

Livelihood Zones

- ◻ Government areas
- ◻ Restricted area
- ◻ Protected parks and reserves
- ◻ Tuli and Tati Blocks exclusive access
- ◻ Ghanzi-Kgalagadi exclusive access grazing
- ◻ Pandamatenga exclusive access cropping
- ◻ Communal exclusive grazing
- ◻ Open access livestock
- ◻ Open access livestock and crops
- ◻ Central-Southern open access livestock and upland crops
- ◻ Central-Southern livestock, upland crops and non-farm income
- ◻ Okavango-Botete riverine crops and other income
- ◻ Okavango-Chobe-Nxai 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 of economic importance 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 through out 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 (OVCs) 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. **However, the wages have been revised upwards to P20.00 for labourers and P26 for supervisors, effective 1st April 2011.**

Appendix IV

Botswana Year Ranking and description by Community members

2009/10

Average rainfall,

Average harvest, pasture,

Milk production,

Wild foods

Less poisonous plants and fair livestock prices.

Ranking 3 out of 5 therefore a fair year in comparison to others

2008/09

Late start of rains

Good rains but too much in some places

Better harvest in dry land but bad in areas 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

Appendix VI

Assessment Team members

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