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Baseline Survey of the Chobe Enclave FINAL REPORT

**Prepared by
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(SIAPAC-Africa)
Gaborone, Botswana**

**for
Department of Wildlife and National Parks
Ministry of Commerce and Industry**

**as part of the
Natural Resources Management Project
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Preface

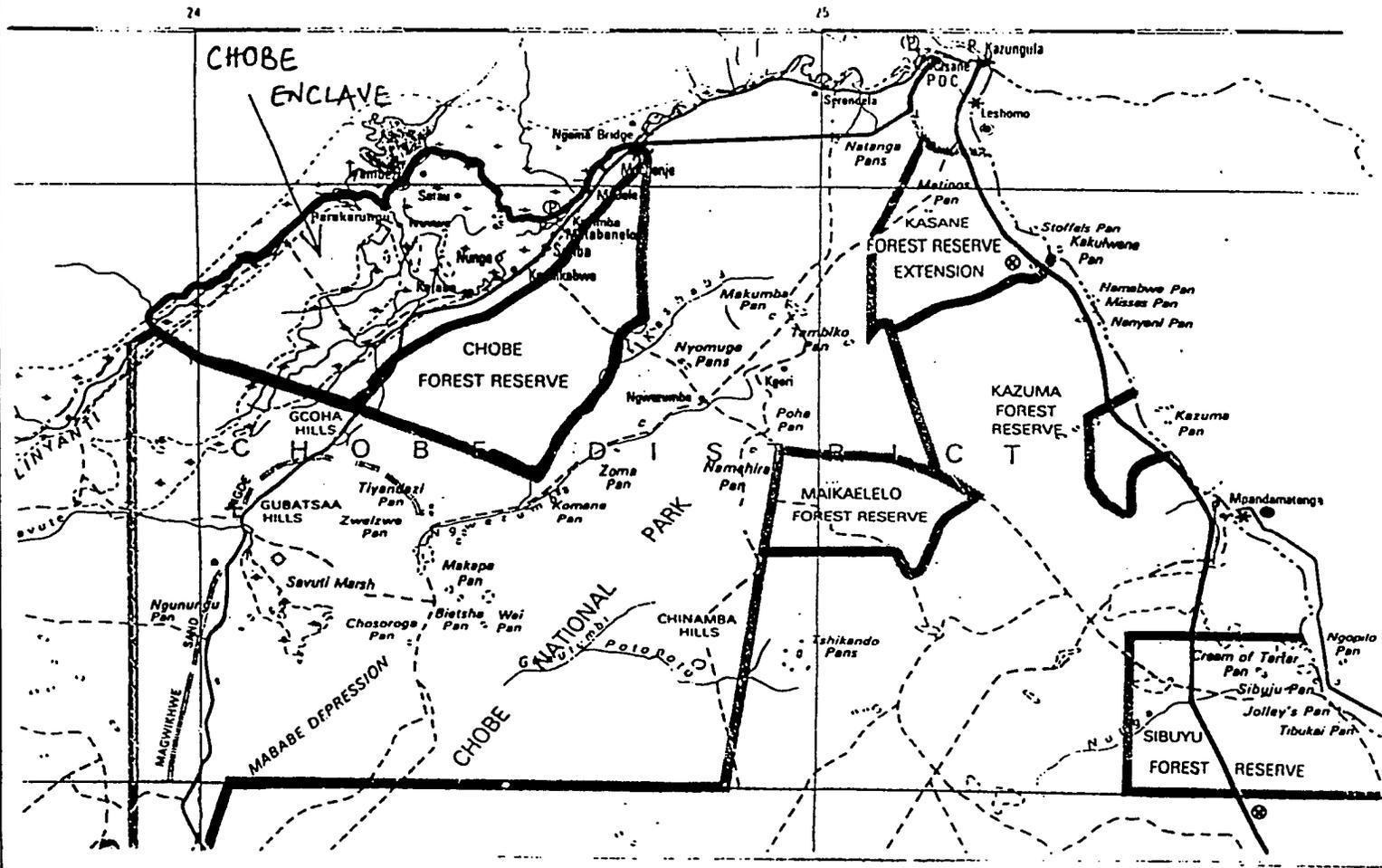
The Natural Resources Management Project (NRMP) is a USAID-funded project with three principal objectives:

- Strengthen the capacity of participating governmental and non-governmental organizations to protect, maintain and utilize wildlife and other natural resources.
- Improve the social and economic well-being of the target area's communal lands residents through conservation and utilization programs.
- Demonstrate, through practical examples, the economic, social, technical and ecological feasibility and replicability of community-based wildlife utilization programs for marginal lands.

The baseline survey of the Chobe Enclave is intended to provide base measures from which project impacts can be measured. In the Enclave, the first intervention is intended to be the turning over of hunting quotas to the communities for onward allocation. The goal is to help the communities ensure that they have control over the number of permits allocated to enclave residents, and the degree to which those from other areas in Botswana can hunt in the area. Other interventions are expected to follow, based on the felt needs of enclave residents.

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Map of Chobe Enclave

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Chapter 1: Introduction

Introduction

The Natural Resources Management Project (NRMP) is a USAID sponsored regional initiative designed to enhance community involvement in natural resource management. More specifically, the project aims to support natural resource projects which are sustainable, viable, profitable, strengthens local institutions for decision-making and self-management, and improves the participation and role of women in sustainable natural resource programme (NRMP, 1991). As with similar projects in Zambia, Zimbabwe and more recently Namibia, the Botswana NRMP has as a principal objective ensuring that local communities have a central role in determining the nature of community involvement in natural resource activities in their areas, and that these same communities share in the economic and other benefits to be derived from the projects. By giving rural communities a central role, the Project also intends to engender attitudes and ensure practices that support the sustainability of these resources. Such attitudes, often latent in rural communities due to circumstances beyond their control, can often be engendered by empowering communities with the ability to make decisions over resources, and by providing sufficient incentives and outside support to realise household-level and community-level economic benefits.

The community-based approach to natural resource development accommodates one of the central tenets of the NDP7 planning period: "a strengthening of conservation policy both to promote development and to ensure that more diversified growth does not endanger the nation's renewable resources or result in other forms of environmental decay".

The purpose of the baseline study was to provide baseline measures through which the social and economic benefits (and, when relevant, their absence) of the Chobe projects could be directly assessed over time, and through which other variables (e.g., empowerment) could be indirectly and directly assessed in future.

Methodology

Two methods of measurement were used to carry out the study. One consisted of a quantitative instrument targeted to household heads in the five enclave villages of Kachikau, Mabele, Kavimba, Satau and Parakarungu. The other consisted of a community checklist, investigating what community organisations, extension services, and infrastructure existed in each of these five communities. The presentation of the quantitative data is included in Chapter 2, while the information from the community checklist is included below, along with other background information.

1991 census results were not available for sampling purposes. Therefore, the 1981 census was used, from which an equal probability sample was pulled. A total of 253 interviews were conducted, with larger villages having a proportionately larger number of interviews.

The quantitative instrument was designed by SIAPAC-Africa, working with a Project Technical Team (PTT). In addition to officers from SIAPAC-Africa, the PTT consisted of two members of the Department of Wildlife and National Parks (DWNP), two members from the Ministry of Agriculture, and one member from the Ministry of Local Government and Lands. In addition to repeated review by the PTT, the questionnaire was also reviewed by a larger Reference Group, consisting primarily of members from DWNP and NRMP. Altogether the questionnaire went through nine revisions and one pre-test prior to implementation. The questionnaire was prepared in English and was translated into Setswana. The translation was checked by a second translator to ensure that it was correct. A copy of the questionnaire is included as Annex C.

The project was supervised in the field by a representative from the NRMP and by the SIAPAC-Africa Senior Field Supervisor. Enumerators were selected from the enclave, after screening. This served two purposes: 1) they spoke Sesubiya and were familiar with the area; and 2) they provided a further link for the project with the communities. Field work was undertaken in July and August, 1992.

Issues raised in the questionnaire included the following:

- demographic background (e.g., gender of household head, education levels, marital status, composition of household);
- community functions (e.g., involvement in community action groups, linkages with extension services);
- household income (e.g., employment status, involvement in small-scale enterprises, access to training and government assistance);
- household assets (e.g., ownership of a series of assets);
- agricultural production and land use conflicts (e.g., crop production, crop damage by wildlife, livestock production, livestock damage to wildlife; livestock assets);
- natural resource use (hunting, fishing, gathering, forestry).

We also included a series of attitudinal statements at the end of the questionnaire which we asked respondents to 'strongly agree', 'agree', 'disagree', or 'strongly disagree' with. If the statement did not apply, they responded 'not applicable'.

As a baseline survey, the principal intention of the questionnaire was to provide information from which change could be measured over time. With repeat measures in future, the intention will be to assess change over time, and what factors (including project interventions) led to this change.¹

Descriptive Overview

Chobe District consists of just over 22,000 square kilometres, of which half is comprised of the Chobe National Park. Communal land comprises less than 10% of the total district, with the remainder including commercial land in Pandamatenga, the Nunga Wildlife Management Area (2,350 square kilometres), and six forest reserves (covering 4,451 square kilometres).

¹ Annex A lists some indicators which could be measured to assess project impact in future studies in the enclave.

The Chobe Enclave is an area, covering approximately 1,690 square kilometres, located to the west of the district capital of Kasane. It is bordered by the Chobe National Park on the south and east, and by Namibia on the north and northwest. The Enclave has the highest rainfall of any settled area in Botswana, at over 650mm per annum, and has a (mean) high temperature of 30 degrees centigrade, with less variability than the remainder of Botswana. Rainfall reliability is also higher than other locations in Botswana. As a result maize, which requires higher and more consistent rainfall, is grown widely in the area, compared to sorghum, the favoured crop elsewhere in Botswana.

The Chobe Enclave consists of five principal settlements: Mabele, Kavimba, and Kachikau, along the ridge bordering the park, and Satau and Parakarungu, on sand ridges in the floodplain area. These five settlements are also comprised of lands and cattle post locations, as is the case with other villages in Botswana. In some cases settlement at these lands and cattle post locations is relatively permanent, while in other cases smaller settled areas exist which are administratively and economically linked to the five main villages (Muchanje, Mawana and Ngoma for Mabele; Matabanelo, Seriba, Legotlhwane, Makose and Lungara for Kavimba; Kataba, Mpetleke, Old Kachikau, Munga and Barangwe for Kachikau; Mazunzwe, Liambezi, Nchenene, Metsemahaha, Huhuwe, Maunga, Masanzu, Chida and Chiakabi for Satau; and Karoga, Ikonde, Mabozo, and Chituzanamatako for Parakarungu).

We collected information on characteristics of each of the five main communities:

Table 1.1: Community Characteristics

Facility	Mabele	Kavimba	Kachikau	Satau	Parakarungu
<i>Services</i>					
Health Facility	clinic	clinic	clinic	clinic	clinic
Schools	primary	primary	primary	primary	primary
Banks	none	none	none	none	none
Telephone	no	no	no	no	no
Post Office	yes	yes	mail bag	yes	mail bag
<i>Extension Services</i>					
Kgotla	yes	yes	yes	yes	yes
Agricultural Demonstrator	yes	yes	yes	yes	no
Veterinary Assistant	yes	yes	no	no	yes
Literacy Group Leader	no	no	no	yes	yes
Literacy Assistant	no	no	yes	no	no
Senior Asst. Comm. Dev. Officer	no	yes	yes	yes	yes
Social Welfare Officer	yes	no	no	no	no
Family Welfare Educator & Nurse	yes	yes	yes	yes	yes
<i>Village Committees & NGOs</i>					
Village Development Committee	yes	yes	yes	yes	yes
Farmer's Committee	yes	yes	yes	yes	yes
Village Health Committee	yes	yes	yes	yes	yes
PTA	yes	yes	yes	yes	yes
Red Cross Committee	yes	yes	yes	yes	yes
4Bs (school-based)	yes	yes	yes	yes	yes
Botswana Council for Women	yes	yes	yes	yes	yes
Youth Club	yes	no	no	yes	yes
Wildlife Club / Conservation Club (school-based)	yes	yes	yes	yes	yes

Table 1.1 indicates that clinics and schools are located throughout the area, however Kasane serves as the regional centre for further schooling. Banking services are non-existent, except through the Botswana Saving Bank at the newly built post office in Kavimba. In Kachikau and Parakarungu only Mail Bags are currently being used. There are a wide variety of extension officers in the enclave villages, covering health, non-formal education, agriculture, and social welfare. The Industrial Officer and wildlife officers are located in Kasane, and cover enclave villages.

A number of village committees and NGOs are active in the area. One would expect that Village Development Committees would be active, due to payments made for meetings. Voluntary organisations without remuneration, such as farmer's committees are, however, also in existence.

Closing Comments

This report is intended to be a concise presentation of the findings from the field work undertaken in mid-1992 in the Chobe Enclave. Readers interested in more detailed information about the enclave itself, or in the NRMP, should consult the documents listed in Annex D. In particular, a review of the document Natural Resources in the Chobe Enclave: A Review of Their Status and Potential Use, prepared by the Natural Resources Management Project, would provide readers with information on earlier attempts to involve enclave communities in the sustainable use of natural resources for community benefit.

Chapter 2 consists of a presentation of quantitative findings. Chapter 3 is a summary of findings and their implications. Annex A contains the questionnaire used in the baseline survey, Annex B contains the recommended revised questionnaire, Annex C includes a list of general indicators and how they might be measured, and Annex D consists of references consulted and recommended for review by those interested in the Chobe Enclave.

Chapter 2: Findings

Introduction

A total of 253 interviews were conducted across five villages in the enclave. Questions covered demographic issues, community functions, household income, household assets, agricultural production and land use conflicts, natural resource use, and a series of attitudinal statements covering these other issues.

Percentages of responses are presented, followed where relevant by discussions of variation across location and/or gender of household head. Locational considerations are often important for project interventions, as benefits are expected to be accrued at the village level, as well as the individual household level. Gender of household head was important for the same reason, as it points out current areas of variation across male- and female-headed households.

In Chapter 3, we present some of the implications of these findings for DWNP and for the NRMP.

Demographic Findings

The following number of interviews were conducted in the five enclave villages:

Table 2.1: Location of Interviews

Village	Frequency	Percentage
Mabele	67	26.5
Parakarungu	58	22.9
Satau	58	22.9
Kachikau	50	19.8
Kavimba	20	7.9

As 1991 census findings for the enclave had not been released at the time of the study, the above sample proportions were derived from the 1981 census listings. Sampling was proportional based on the 1981 census, meaning that each household had the same opportunity of appearing in the study.

Gender of the head of the household is indicated in Table 2.2:

Table 2.2: Gender of Household Head

Head of Household	Frequency	Percentage
male	98	38.9
female de jure	43	17.1
female de facto	111	44.0

Household head was defined as female *de jure* if a responded indicated a female head. Female *de facto* was defined as households where males were identified as household heads, but were away from the household at least six months over the past year. Male headed households were defined as those where a male was defined as head, and where the male had been present for more than six

months in the past year. As Table 2.2 shows, the Chobe Enclave area is a heavy male out-migration area, with female-headed households comprising over 60% of the total (compared to 35-50% for rural Botswana). 'Push factors' leading to high male out migration are generally based on low on-farm productivity and the lack of local job opportunities. 'Pull factors' include the relatively high availability of formal sector jobs in the tourist industry in Kasane and the tourist camps.

We ran household head by village, to see if there were any patterns of variation. Results indicate that there is virtually no variation in household headship across location (chi-square insignificant at the .1 level; .9418).¹ This means that out-migration of males does not vary across location.

The educational status of the respondent and the respondent's spouse are indicated in Tables 2.3 and 2.4, respectively:

Table 2.3: Educational Status of Respondent

Educational Status of Respondent	Frequency	Percentage
none	119	47.0
primary	126	49.8
junior secondary	3	1.2
senior secondary	4	1.6

Table 2.4: Educational Status of Spouse of Respondent

Educational Status of Spouse	Frequency	Percentage
none	66	43.0
primary	77	50.1
junior secondary	4	3.0
senior secondary	6	4.4

Education levels are quite low in the Enclave, with well under 10% having junior secondary or higher education. In part this is due to the past lack of educational opportunities, although strong pressures for the establishment of a community junior secondary school in the enclave suggests that educational opportunities continued to be limited.

Marital status of the respondents is indicated in Table 2.5:

Table 2.5: Marital Status of Respondent

Marital Status	Frequency	Percentage
single	59	23.3
married	128	50.6
divorced	23	9.1
widowed	43	17.0

¹ The chi-square test establishes the degree to which there is correlation between two variables, and whether or not it is likely to have occurred by chance. In this study, we have set the test of significance at .1, meaning that, at .1 level, we are 90% certain that the relationship did not occur by chance. It should be underlined that the chi-square test, as with all measures of significance, is only useful if the relationship at hand is theoretically interesting and plausible.

Half of the respondents were married, although many of these households were female headed with absent males.

Table 2.6 indicates the average number of children per household:

Table 2.6: Average Number of Children per Household

Number of Children	Frequency	Percentage
none	17	6.9
one	30	12.1
two	46	18.6
three	39	15.8
four	38	15.4
five	30	12.1
six or more	47	19.1

Table 2.7 indicates the average number of adults per household:

Table 2.7: Average Number of Adults per Household

Number of Adults	Frequency	Percentage
one	75	31.5
two	65	27.3
three-four	43	18.1
five-six	20	8.4
seven-eight	18	7.6
nine-ten	9	3.8
eleven or more	8	3.3

Table 2.7 shows that households with only one adult comprise almost one-third of all households in the enclave, indicating high out-migration as well as a high dependency ratio.

Economic Status

The total percentage of households with members in formal employment is indicated in Table 2.8:

Table 2.8: Formal Employment

Number in Household Formal Employment	Percentage
none	26.2
one	34.2
two	23.2
three or more	16.4

The Chobe Enclave is unusual in the relatively high percentage of household which have at least one member in formal employment. The principal employers are affiliated to the tourist industry, although a number of Enclave residents work for the timber concession. Household involvement in formal employment does not vary across gender of household head (chi-square insignificant at the .1 level; .66871).

Employment varied little across location, with the exception of higher rates for Satau and Parakarungu:

Table 2.9: Number in Formal Employment

# in Formal Employment	Kachikau	Mabele	Parakarungu	Satau	Kaviriba
none	34.7	31.6	25.9	15.8	20.0
one	32.7	29.8	35.2	42.1	25.0
two	18.4	22.8	20.4	21.1	50.0
three or more	14.2	15.8	18.5	21.1	5.0

Half of all households were involved in a small-scale enterprise:

Table 2.10: Small-Scale Enterprises

Involved in Small-Scale Enterprises	Percentage
yes	51.2
no	48.8

These small-scale enterprises consisted of beer brewing (74.2%), followed by trading (12.9%), handicrafts (6.8%), gathering (2.3%), sewing/knitting (2.3%), fishing (0.8%; n=1), and metal work (0.8%; n=1).

Two-thirds were in production less than 6 months, with only one-third in production full time.

Household involvement in small-scale enterprises does not vary across gender of household head (chi-square insignificant at the .1 level; .63773).

Community Participation and Government Assistance

One purpose of the baseline survey was to determine current levels of community organisation and community involvement (attitudes towards community organisation are dealt with in the attitudinal section below). The objective was to establish what groups existed and what the level of involvement was. Table 2.11 indicates the number of households involved in the various community action groups identified by respondents:

Table 2.11: Involvement in Community Action Groups

Community Group Involvement	Percentage
none	46.2
Church-related Groups	18.4
Village Development Committee	12.8
Village Health Committee	5.2
Parent Teachers Association	6.9
Farmers Committee	5.6
Other	4.9

Over half of all respondents are involved in a community action group. While the majority were church-related groups, a range of groups nevertheless existed. Table 2.12 indicates membership by gender, as well as regularity of attendance and the frequency of meetings:

Table 2.12: Number of Members in Community Action Groups

# of Members	Males	%	Females	%
one	78	83.9	68	66.0
two	10	10.8	15	14.6
three or more	5	5.3	20	19.4
TOTAL	93	100.0	103	100.0

Table 2.13 indicates the degree to which people are linked to extension officers, while Table 2.14 shows the average number of visits across extension officers:

Table 2.13: Links with Extension Officers

Links with Extension Officers	Percentage
None	39.1
<i>OF THOSE WITH VISITS:</i>	
FWE/Nurse	29.0
Agricultural Demonstrator	25.5
Livestock Assistant	12.4
Wildlife Officer	11.2
Community Development Officer	7.7
Tirelo Sechaba Participant	7.7
Other	6.5

Table 2.14: Number of Visits

Number of Visits (of those receiving visits)	Frequency	Percentage
one	109	38.4
two	60	21.1
three	38	13.4
four	40	14.1
five	10	3.5
six or more	27	9.5

Linkages between Government and enclave residents are quite high, over 60%. Most visits were by Agricultural Demonstrators and Livestock Assistants. Those visiting with Family Welfare Educators/Nurses had the highest frequency of visits.

In addition to active involvement in community action groups, over half of all households had received at least one form of Government assistance:

Table 2.15: Government Assistance

Received Government Assistance	Percentage
yes	52.4
no	47.6

Male-headed households are significantly more likely to have received government assistance than female-headed households (chi-square significant at the .1 level; .00000).

Table 2.16 indicates the type of assistance received:

Table 2.16: Type of Government Assistance Received

Type of Assistance Received	Frequency	Percentage
ARAP	100	59.9
ALDEP	62	37.1
FAP	3	1.8
NDB	2	1.2

Table 2.16 indicates that ARAP was the most popular government assistance, in line with findings from throughout rural Botswana. Unlike other areas of Botswana, Financial Assistance Policy (FAP) and National Development Bank (NDB) are not popular. The findings for FAP are somewhat surprising, given that over half of all households are involved in small-scale enterprises (Table 2.10). Given that many of these enterprises are in a non-eligible FAP area (beer-brewing), however, access to FAP would generally be lower than first considered. Even if beer-brewing is excluded, levels of access are still surprisingly low, at 1.8%, compared to an average of 13.7% in Botswana overall (SLAPAC-Africa, 1991a).

Access to training, while lower than access to Government assistance, could nevertheless be considered quite high:

Table 2.17: Type of Training Received

Received Training	Percentage
yes	24.0
no	76.0

Table 2.18 indicates that the training was generally related to formal sector employment, suggesting that the training would not generally be applicable outside the tourism sector, and in many cases not applicable to self-employment:

Table 2.18: Applicability of Training

Apply Training	Percentage
Yes - Agriculture	1.5
Yes - Small-scale Enterprise	7.6
Yes - Formal Employment	62.1
Yes - Other	12.1
No	16.7

Assets

One of the principal measures of change over time in the economic status of enclave households is their ability to invest in various assets. While it is true that significant economic change would lead to varied patterns of investment (e.g., higher-risk capital investments), for the duration of the NRMP change in economic status should principally be measured by investigating existing patterns of investment.

Patterns of cattle ownership suggest that, as with other locations in Botswana, male-headed households tend to own more cattle than female headed households (chi-square significant at the .1 level; .00001):

Table 2.20: Number of Cattle Owned by Gender of Household Head

Household Head	none	1-5	6-10	11-15	16-20	21+
male	16.3	17.4	20.9	8.1	5.8	31.4
female de jure	17.5	27.5	22.5	7.5	10.0	15.0
female de facto	39.5	38.3	12.3	2.5	1.2	6.2

Goat ownership is indicated in Table 2.21:

Table 2.21: Goat Ownership

Goat Ownership	Percentage
none	56.4
1-10	36.4
11-25	4.7
26-50	1.2
51+	1.3

These figures suggest variance with patterns of goat ownership elsewhere in Botswana, with the number of households without any goats higher.

Almost half of all households indicated that they owned oxen, suggesting that the majority of cattle owning households also owned oxen. Donkeys were owned by very few families:

Table 2.22: Number of Oxen and Donkeys

Number of Oxen		Percentage
none		52.1
1-5		29.2
6+		18.7
Number of Donkeys		Percentage
none		95.4
1-9		4.6

Table 2.23 outlines assets held by respondent households:

Table 2.23: Household Assets

Assets	% of Households with Assets	Male	Female	One	Two	Three or More
Plough*	66.0	87.2	52.9	60.6	24.6	14.8
Spade*	30.4	63.0	17.9	50.0	19.5	30.5
Axe	77.5	91.1	81.1	60.4	25.0	14.6
Tractor	4.0	na	na	70.0	30.0	0.0
Donkey Cart	0.4	na	na	100.0	0.0	0.0
Sledge*	27.7	45.5	9.4	74.3	25.7	0.0
Wheelbarrow	9.5	na	na	87.5	12.5	0.0
Bicycle	15.8	na	na	97.5	2.5	0.0
Vehicle	7.9	na	na	65.0	20.0	15.0
Gun*	24.5	38.5	15.2	75.8	19.4	4.8
Snare	5.5	na	na	57.1	42.9	0.0
Bow	0.0	na	na	0.0	0.0	0.0
Cooking Pot	71.1	na	na	45.0	30.6	24.4
Plastic Drum	43.5	na	na	62.7	29.1	8.2
Fishnet	11.9	na	na	30.0	16.7	53.3
Mokoro	11.9	na	na	86.7	13.3	0.0
Large Furniture*	66.4	72.5	86.3	30.4	26.2	43.4

* Chi-square test of difference between male- and female-headed households significant at the .1 level.
na = not applicable, number of households with assets inadequate

The natural resource environment for the Enclave varies considerably from most other locations in Botswana, and as a consequence ownership patterns for a few less common items is quite high (e.g., fishnet, sledge, gun), particularly when considering that under-reporting of gun ownership should be severe.

Contrary to much of the remainder of Botswana, access to sanitary means of human waste disposal was quite low in Chobe. Further, virtually no households had access to water in their own compound. A study carried out for the Ministries of Health and Local Government and Lands found that, on average, 41% of all rural households owned pit latrines, compared to 5.1% in Chobe. Further, 15% of all households had a tap in the yard, compared to 0.4% for Chobe (SIAPAC-Africa, 1991b). Table 2.24 gives the findings:

Table 2.24: Sanitation and Water

Pit Latrine		Percentage
yes		5.1
no		94.9
Tap in Yard		Percentage
yes		0.4
no		99.6

Agriculture

Table 2.25 indicates the number of hectares owned by respondent households:

Table 2.25: Hectares Owned

Hectares Owned	Percentage
none	12.5
1-4	42.7
5-9	26.9
10+	17.9

Landlessness is less problematic in the Enclave than in other parts of rural Botswana (in some areas it is estimated to be as high as one-quarter). Land holdings tend to be quite small, however, with less than one-in-five owning more than ten hectares.

The number of hectares ploughed tends to be lower than the number of hectares owned:

Table 2.26: Hectares Ploughed

Hectares Ploughed	Percentage
none	10.1
1-4	51.8
5-9	25.2
10+	12.9

Good early rains in Chobe suggest that poor planting rains were not the most important constraint. Nor does it appear to be primarily due to a lack of necessary agricultural inputs. An important casual factor appears to be the lack of sufficient labour at peak labour demand seasons.

However, figures indicate that the intermittent nature of rainfall from the first of the year had a serious impact on yields for the main crop, maize:

Table 2.27: Yield Per Hectare (Maize)

Yield Per Hectare (Maize)	Percentage
none	51.7
< 1 bag	26.6
1-3 bags	12.1
> 3 bags	9.6

Over half of all households received no yield of their principal crop. There was no variation across gender of household head (chi-square insignificant at the .1 level; .54694).

Yields from the secondary crop, sorghum, and generally less drought resistant, was also poor due to the poor rains but also due to the small area planted:

Table 2.28: Yield Per Hectare (Sorghum)

Yield Per Hectare (Sorghum)	Percentage
none	72.2
< 1 bag	15.7
1-3 bags	7.4
> 3 bags	4.7

There was no variation across gender of household head (chi-square insignificant at the .1 level; .50245).

The poor yields and the lack of established, competitive markets for the sale of Enclave produce undermined crop sales:

Table 2.29: Income From Crop Sales

Income From Crop Sales	Percentage
none	94.1
P70	1.5 (n=1)
P200	1.5 (n=1)
P300	1.5 (n=1)
P400	1.5 (n=1)

Financial agricultural investment was quite low:

Table 2.30: Agricultural Investments

Hire Services for Ploughing	Percentage
yes	28.5
no	71.5
Purchase Fertiliser	
yes	0.0
no	100.0
Purchase Seeds	
yes	37.9
no	62.1
Purchase Pesticides	
yes	0.6 (n=1)
no	99.4

The hiring of services for ploughing relates to the shortage of labour, particularly amongst female-headed households. The purchase of seeds partially reflects poor 1990/91 harvests; almost no households invested in fertilisers or pesticides.

Of those households with livestock, almost half purchased medicine for the livestock:

Table 2.31: Livestock Investments

Purchase Medicine for Livestock	Percentage
yes	45.1
no	54.9
Purchase Feed for Livestock	
yes	3.0
no	97.0
Purchase Stud Service for Livestock	
yes	0.0
no	100.0
Purchase Goats	
yes	5.1
no	94.9
Purchase Cattle	
yes	13.1
no	86.9

30% of all households were involved in the commercial sale of cattle, while 25% slaughtered one or more beasts:

Table 2.32: Cattle Utilisation

Cattle Slaughtered	Percentage
none	76.1
1-2	18.7
3+	5.2
Cattle Sold	
none	70.6
1-2	24.8
3+	4.6

Commercial transactions of goats, while less common, involved almost 20% of all households:

Table 2.33: Goat Utilisation

Goats Slaughtered	Percentage
none	78.6
1-2	12.8
3+	8.6
Goats Sold	
none	82.7
1-2	12.1
3+	5.2

Use of Natural Resources

We measured the harvesting and use of natural resources, including fish, veld products, wood and wildlife.

Almost half of all households consume fish at least once a week, while very few households are involved in the commercial sale of fish:

Table 2.34: Consumption and Sale of Fish

# of Times Per Week Eat Fish	Percentage
none	53.4
once	34.5
2-6 times	11.2
daily	0.9
Involved in Sales or Barter of Fish	
yes	3.9
no	96.1

Over half of all households are involved in the gathering of wild foods, with 23% gathering on a regular basis:

Table 2.35: Gathering

# of Gathering Events (past 12 months)	Percentage
none	46.8
1-10	29.4
11-20	0.4
21-30	0.4
> 30	23.0
Involved in Selling or Bartering Veld Products	
yes	11.7
no	88.3

The number of gathering events did not vary across gender of household head (chi-square insignificant at the .1 level; .15454). 11.7% were involved in commercial transactions involving veld products. This did not vary across gender of household head (chi-square insignificant at the .1 level; .80525).

The types of veld products gathered are indicated in Table 2.36 below:

Table 2.36: Veld Products

Types of Veld Products Harvested	Number	Percentage
motshentshela	89	38.5
mokonkolwane	45	19.5
mbiringwa (tsaro)	23	10.0
mowana	22	9.5
moretologa	20	8.7
mogwana	17	7.4
mmupudu	14	6.1
mokgonphata	1	0.3

While all households consumed fuelwood, only 3 of the 253 households interviewed stated that they were involved in the selling or bartering of fuelwood. A higher proportion used wood in their enterprises:

Table 2.37: Wood Use and Sales

Sell or Barter Fuelwood	Percentage
yes - using pick-up truck	0.4 (n=1)
yes - on foot	0.8 (n=2)
no	98.8
Use Wood in Small-Scale Enterprise	
yes	12.3
no	87.7

Respondents in Parakarungu and Kavimba were more likely to use wood in small-scale enterprises than respondents in other locations (chi-square significant at the .1 level; .05512).

We asked respondents about their hunting practices:

Table 2.38: Hunting

Number of Times Hunted (past 12 months)	Percentage
none	92.3
1-10	6.9
> 10	0.8
Sell or Barter Game Meat	
yes	14.3 (n=4)
no	85.7 (n=24)

Less than 10% of all households hunted. Because of the sensitivity of the question, these is very likely an underestimate. For example, while less than 10% admitted hunting, 25% owned guns. Of those who hunted, most did so for own consumption; little seemed to be entering the market.

Wildlife and Domestic Resource Damage

Many households reported crop damage by wildlife, with the vast majority of damage caused by elephants:

Table 2.39: Crops Damaged by Wildlife

Crops Damaged by Wildlife	Percentage
none	31.4
elephants	58.2
other wildlife (gemsbok, zebra, kudu, lion)	10.4

Over half did not report the crop damage:

Table 2.40: Reporting Crop Damage

Report Crop Damage by Wildlife	Percentage
yes	45.3
no	54.7

Female-headed households were considerably less likely to report crop damage than male-headed households (65.0% for male-headed households and 29.5% for female-headed households; chi-square significant at the .1 level; .00003).

In those situations where crop damage was reported, respondents were unsatisfied with the response from DWNP. For those who did not report, almost half did not report due to past inaction:

Table 2.41: DWNP Response to Crop Damage

If Reported, Ministry Response	Percentage
did not help	70.7
came and shot	12.1
checked damage, but nothing	6.9
other	10.3
If Not Report, Why Not	Percentage
no action, so no need to report	44.1 (n=15)
did not have a gun	14.7 (n=5)
DWNP should just take action & prevent this	11.8 (n=4)
cannot report small animals	5.9 (n=2)
other (animal escaped, did not know how to kill)	23.5 (n=8)

Those in Kachikau and Kavimba were more likely to report crop damage than those in the other three locations (chi-square significant at the .1 level; .00006).

We asked what respondents did to wildlife that damaged their crops:

Table 2.42: Actions Taken for Wildlife Crop Damage

Kill Wildlife Which Damaged Crops	Percentage
yes	4.4
no	95.6
If No, Why Not	Percentage
did not have a gun	51.1 (n=38)
animal escaped	19.2 (n=14)
DWNP should kill it	6.8 (n=5)
wanted to report it, but no action would be taken	4.1 (n=3)
do not know how to kill	4.1 (n=3)
other	14.7 (n=10)

Few admitted to taking direct action, with half stating (plausibly) that they did not have a gun. A number of other respondents noted that they were unable to kill the animal because it escaped.

For those who sought compensation for crop damage, few received any such compensation:

Table 2.43: Compensation for Crop Damage

Compensated for Damaged Crops	Percentage
yes	9.1
no	90.9

The low percentage could be due to two factors: 1) compensation is assessed based on the *commercial* value of the crops damaged, meaning that if the crop was not commercially viable, the Agricultural Demonstrator would often value the loss as 0; or 2) compensation is a long process, and would extend beyond the period under review (our question referred to the last growing season, and compensation usually takes more than one year).

While crop damage affected almost 70% of all households with land, wildlife attacks on livestock affected almost one-third of all households with livestock:

Over 70% of all households did not report the attacks:

Table 2.44: Reporting Wildlife Attacks

Report Wildlife Attack on Livestock	Percentage
yes	28.7
no	71.3
What Happened When Reported	
no action	47.4 (n=18)
DWNP told us to kill it	23.7 (n=9)
DWNP would not come at night	18.5 (n=7)
DWNP came & killed it	5.2 (n=2)
Received skin	5.2 (n=2)
Why Not Report	
they never take action	35.7 (n=15)
DWNP reporting office is too far	16.7 (n=7)
not know who to report to	11.9 (n=5)
not know needed to report	11.9 (n=5)
not report, animal was protected	11.9 (n=5)
DWNP should take preventive actions	4.8 (n=2)
other	7.1 (n=3)
Household Kill Wildlife Which Attacked	
yes	7.3
no	92.7

Female-headed households were significantly less likely to report wildlife attacks on livestock than male-headed households (40.6% for male-headed households and 17.9% for female-headed households; chi-square significant at the .1 level; .00280). Those in Kavimba, Mabele and Kachikau were more likely to report attacks on livestock (chi-square significant at the .1 level; .01206), perhaps due to the distance to Kasane from Parakarungu and Satau.

When asked what happened when they reported the kill, most respondents stated that no action was taken. For those who did not report, one-third argued that no action had been taken in the past, so none was likely to take place this time. A further 16.7% argued that the DWNP office was too far

away (in Kasane), while a relatively high number (23.8%) did not know who to report to or that they could apply for compensation. Very few households stated that they took direct action (7.3%).

Attitudinal Questions

We presented a series of statements with which we asked respondents to 'strongly agree' (SA), 'agree' (A), 'disagree' (D), or 'strongly disagree' (SD). To avoid patterns of responses not due to the actual statement, we mixed positive and negative statements. Charts 2.1-2.28 give the results.

Chart 2.1: DWNP Has Too Much Power

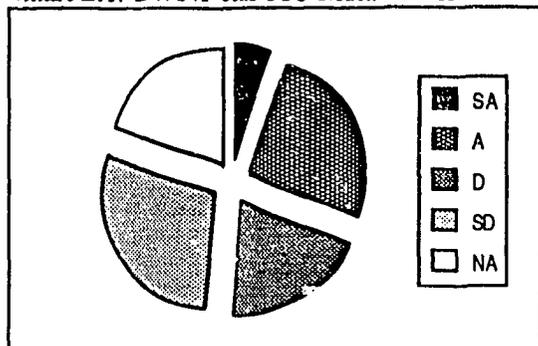
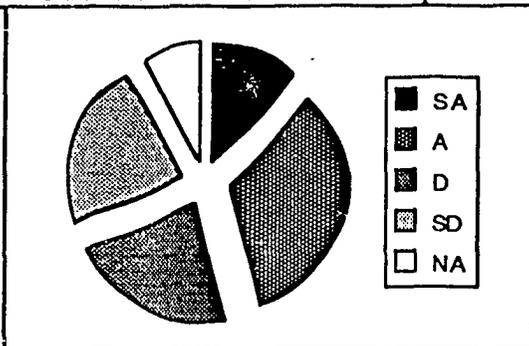


Chart 2.2: DWNP Scouts Show Respect



Originally the question was thought to refer to a concern that DWNP was too powerful in the community and had too much control over the resources people used. However, the responses to the questions appeared to have been moderated by some people interpreting the statement in light of difficulties they had in securing compensation for livestock or crop damage.

Roughly half of the respondents had positive personal interactions with wildlife scouts, or had believed that their reputation was good, while the other half did not feel that the relationship between game scouts and enclave residents was particularly good.

Relationships were particularly strained in the three villages bordering the game park (Kachikau, Mabele, and Kavimba)

Table 2.45: Relationship With Wildlife Scouts by Location

Location	SA	A	D	SD	NA
Kachikau	10.0	34.0	16.0	30.0	10.0
Mabele	7.5	34.3	23.9	32.8	1.5
Parakarungu	6.9	43.1	22.4	12.1	15.5
Satau	22.4	29.3	24.1	15.5	8.6
Kavimba	15.0	25.0	30.0	20.0	10.0

Female-headed households were particularly concerned about DWNP having too much power (chi-square significant at the .1 level; .02564). Interestingly, male-headed households were less likely to have positive interactions with game scouts than female-headed households (chi-square significant at the .1 level; .00003).

Chart 2.3: Community Game Scouts

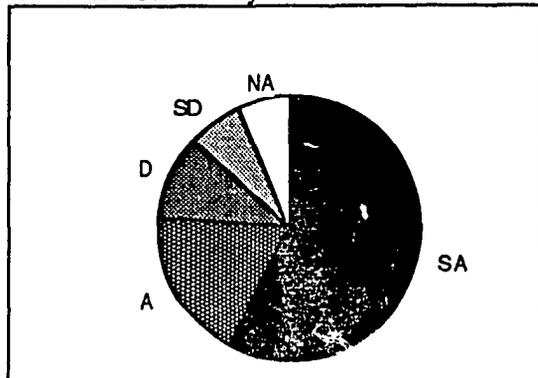
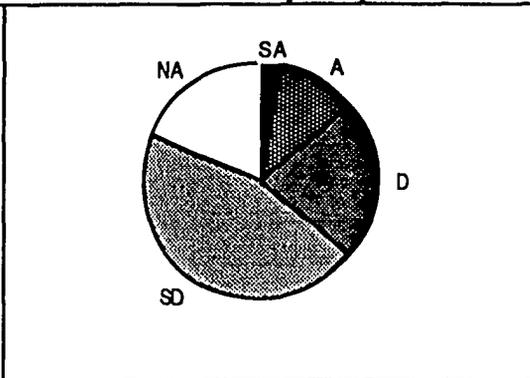


Chart 2.4: Govt Usually Compensates Farmers



There was extensive support for the idea of community game scouts, with over three-quarters of all respondents either strongly agreeing or agreeing with the statement; this relationship held across location (chi-square insignificant at the .1 level; .27384). Female-headed households were significantly more likely to agree that community game scouts were needed (chi-square significant at the .1 level; .03775). We ran this against attitudes on whether or not the community should control the hunting quotas. Those who felt that community game guards should be put in place also felt that the community should have control over the hunting quota (chi-square significant at the .1 level; .00013). Unfortunately, the question as worded does not give reasons behind why community game scouts would be a good idea (e.g., is it based on direct employment benefits, on a desire to have community members involved, or based on a felt need to have more game scouts to prevent crop and livestock damage?).

There was an equally clear unhappiness with the degree and speed of compensation, with almost half the respondents strongly disagreeing with the statement; this relationship held across location (chi-square insignificant at the .1 level; .14096) and gender (chi-square insignificant at the .1 level; .56449).

Chart 2.5: DWNP Does Not Compensate Enough for Crops Damaged by Wildlife

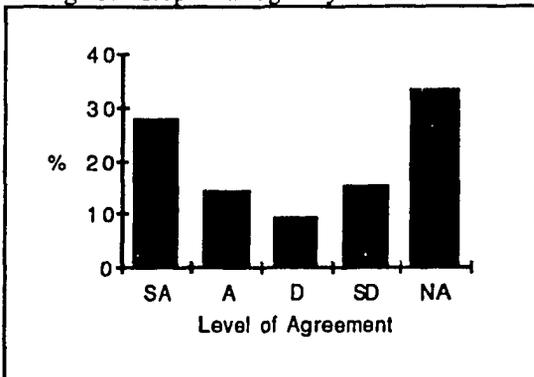
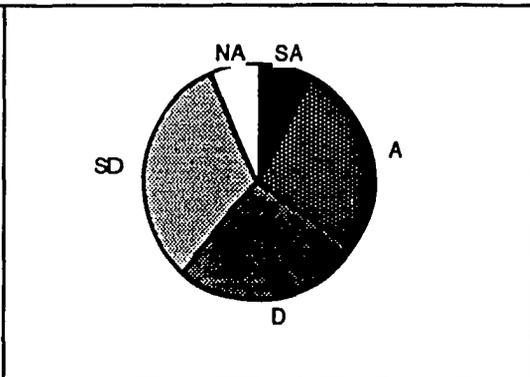


Chart 2.6: DWNP Helps Residents Solve Wildlife Problems

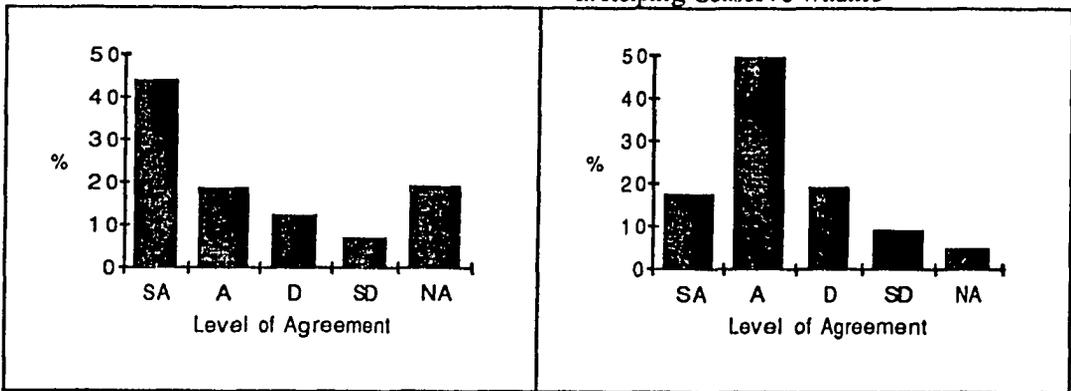


For those who had submitted claims or who had experience with others submitting claims, many were unhappy with levels of compensation. However, this figure may be artificially high due to concerns over receiving *any* compensation. The relationship held across location (chi-square insignificant at the .1 level; .22316) and gender of household head (chi-square insignificant at the .1 level; .57012).

About 60% of all respondents felt that DWNP was not helping residents solve wildlife problems to the extent that they should have been; this relationship held across location (chi-square insignificant at the .1 level; .39322) and gender of household head (chi-square insignificant at the .1 level; .50199).

Chart 2.7: Lack of Food Due to Wildlife Damage

Chart 2.8: DWNP Should Assist Communities In Helping Conserve Wildlife



To try and assess the level of concern about wildlife damage, we asked respondents to agree or disagree with a statement that wildlife damage actually affected their basic food stocks (crops and livestock). In an area of high malnutrition, such as the Chobe Enclave, challenges to the basic food stock are viewed as quite serious. Of those who had experienced such damage, there was a clear concern about the effects on food intake. Concern was particularly high, as could be expected, in areas bordering the park (most especially in Kachikau, but also in Mabele and Kavimba; chi-square significant at the .1 level; .07435):

Table 2.46: Wildlife Damage and Food Intake by Location

Location	SA	A	D	SD	NA
Kachikau	64.0	10.0	10.0	2.0	14.0
Mabele	41.8	25.4	11.9	4.5	16.4
Parakarungu	37.9	17.2	15.5	10.3	19.0
Satau	34.5	13.8	12.1	10.3	29.3
Kavimba	45.0	35.0	5.0	5.0	10.0

Chart 2.8 suggests that the communities would be willing to work closely with DWNP to sort out wildlife issues; this held across location (chi-square insignificant at the .1 level; .70998).

When seen in the context of how sympathetic people view DWNP, it would suggest that the establishment of such a relationship should be a high priority. Full two-thirds of all respondents, and three-quarters of all respondents with an opinion, felt that DWNP was not sympathetic to the problems facing enclave residents:

Chart 2.9: DWNP is Sympathetic

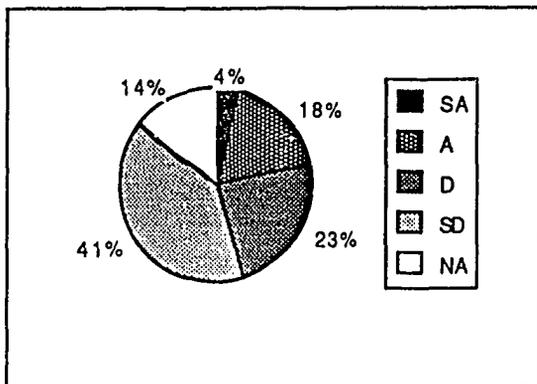
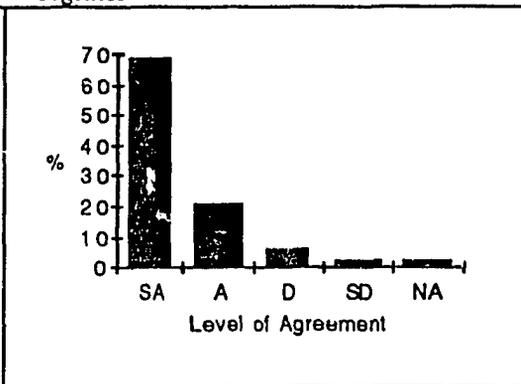


Chart 2.10: DWNP & ADs Should Work Together



The relationship regarding the level of sympathy on the part of DWNP varied across location, with attitudes being especially negative in Kachikau, but also in Mabele and Satau (chi-square significant at the .1 level; .00795):

Table 2.47: Level of Sympathy of DWNP by Location

Location	SA	A	D	SD	NA
Kachikau	0.0	14.0	18.0	58.0	10.0
Mabele	7.5	22.4	23.9	43.3	3.0
Parakarungu	5.2	19.0	20.7	27.6	27.6
Satau	1.8	10.5	29.8	40.4	17.5
Kavimba	10.0	25.0	20.0	35.0	10.0

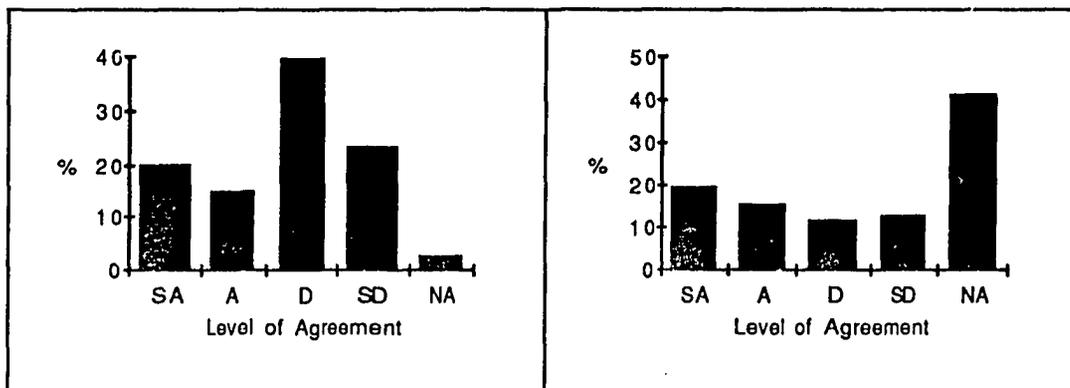
Male-headed households were particularly likely to feel that DWNP was not sympathetic (chi-square significant at the .1 level; .02214).

There was a clear perception that ADs and DWNP should work closely together, in part due to the fact that people had regular contacts with their ADs. There was no variation across location (chi-square insignificant at the .1 level; .29180), nor across gender of household head (chi-square insignificant at the .1 level; .74074).

Hunting questions, not unexpectedly, were quite sensitive. It is likely, therefore, that the following seriously under-reports hunting, as respondents would not have viewed the questions in light of illegal hunting.

Chart 2.11: Hunting is an Important Source of Meat for the Community

Chart 2.12: Too Many People Hunt in My Area



Hunting is viewed as a relatively unimportant source of meat, with the implications being that people are reliant on foodcrops and livestock. The relationship varied across location, with Kavimba residents viewing hunting as a particularly important source of food. Given that the issue of hunting licenses is a very sensitive issue in Kavimba, this is not surprising (chi-square significant at the .1 level; .00216):

Table 2.48: Importance of Hunting by Location

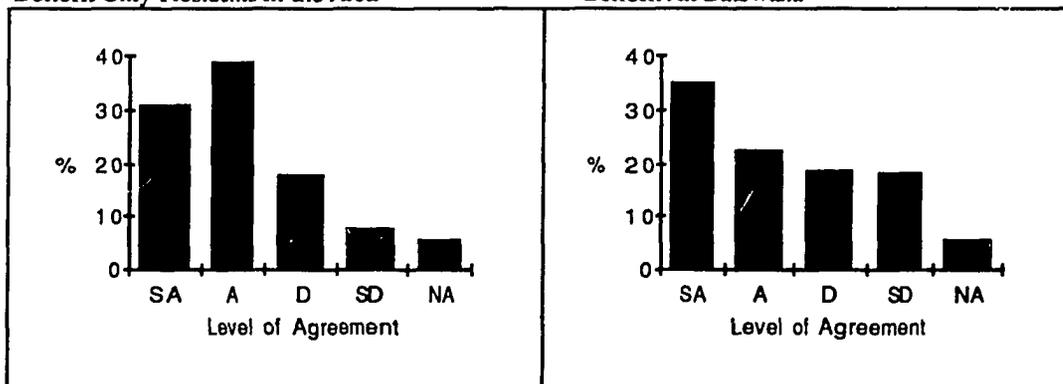
Location	SA	A	D	SD	NA
Kachikau	20.0	18.0	44.0	18.0	0.0
Mabele	19.7	7.6	43.9	24.2	4.5
Parakarungu	14.5	30.9	41.8	9.1	3.6
Satau	20.0	5.5	32.7	40.0	1.8
Kavimba	36.8	10.5	26.3	26.3	0.0

The findings for Chart 2.12 are not surprising in light of Chart 2.11, as people often stated that hunting did not occur. Amongst those who did respond, male-headed households were significantly more likely to believe that there was overhunting (chi-square significant at the .1 level; .00433).

We next enquired about how hunting license benefits should be distributed:

Chart 2.13: Hunting License Money Should Benefit Only Residents in the Area

Chart 2.14: Hunting License Money Should Benefit All Batswana



At first appearance it would seem that the respondents wanted it both ways (e.g., to have only enclave residents benefit and to have all Batswana benefit). In part this is true, but more important are locational differences. In Kachikau, Kavimba and Mabele there is a strong desire to see enclave residents benefit, while in Parakarungu and Satau there is more of a desire to see all Batswana benefit. Responses are likely due to the greater distance between Parakarungu and Satau and the park, and the proximity of the other three locations to the park boundary (for benefiting all Batswana, the chi-square was significant at the .1 level; .00040; for benefiting enclave residents only, chi-square significant at the .01264 level).

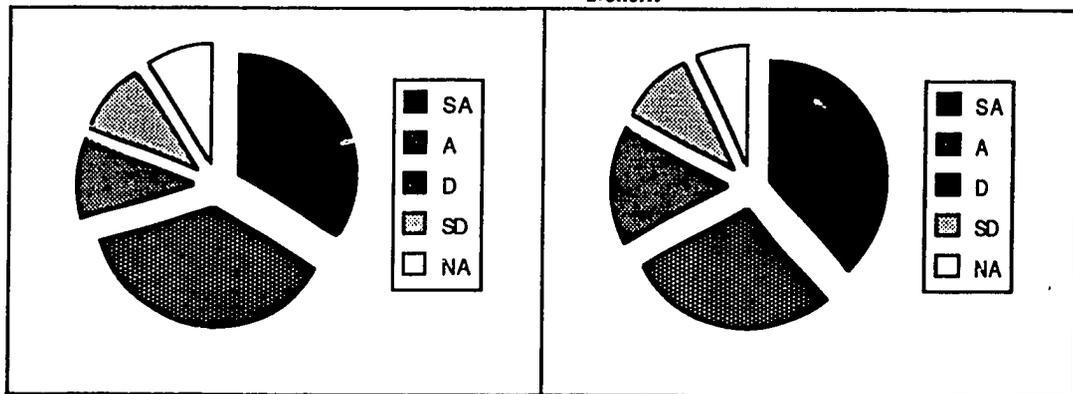
We made four statements about community control over hunting quotas: "The community should be given control over the hunting quota, as we know how to control things so that there is no over-hunting"; "The community should be given control over the hunting quota, as we are the ones who should directly benefit"; "If the community takes control of hunting quotas, those who are not powerful in the community will not benefit", and finally "If the community takes control of hunting quotas, there will be many conflicts in our community".

Concerning community control and the prevention of over-hunting (Chart 2.15), there was significant overall support for the idea. While the relationship was strong across all locations (chi-square insignificant at the .1 level; .27132), it was strongest in Mabele and weakest in Kavimba and Kachikau, while it varied across gender of head of household, with male-headed households more concerned about control (chi-square significant at the .1 level; .00502)

There was also a perception that the control over hunting quotas should lead to direct community benefits (Chart 2.16); this relationship held across location (chi-square insignificant at the .1 level; .40531), but varied across gender of head of household, with male-headed households more convinced that the community would benefit (chi-square significant at the .1 level; .01472):

Chart 2.15: Community Should Control Hunting Quotas, We Know How to Prevent Over-Hunting

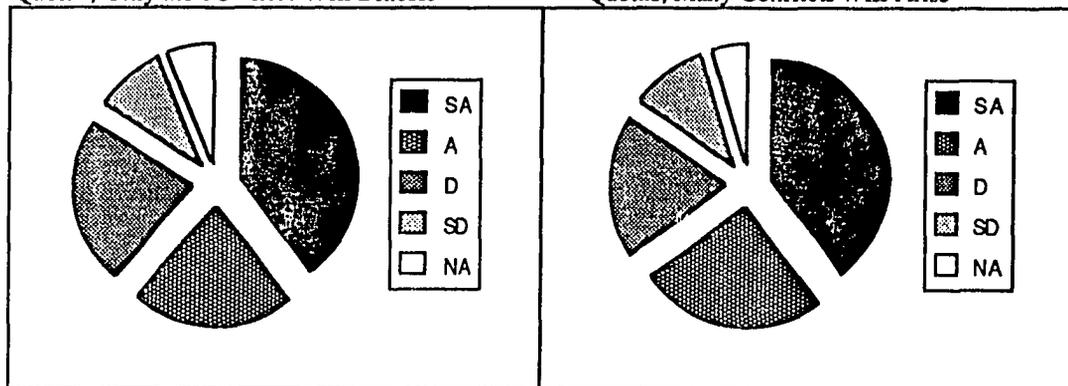
Chart 2.16: Community Should Control Hunting Quotas, As We Should Directly Benefit



At the same time, there was considerable fear that community control over hunting quotas could end up meaning the control of powerful individuals in the community (Chart 2.17); this did not vary across gender of household head (chi-square insignificant at the .1 level; .32590). There was also a considerable fear that many conflicts would arise (Chart 2.18):

Chart 2.17: If Community Controls Hunting Quotas, Only the Powerful Will Benefit

Chart 2.18: If Community Controls Hunting Quotas, Many Conflicts Will Arise



There was a particular fear about the powerful benefiting in Kachikau and Satau (chi-square significant at the .1 level; .01972):

Table 2.49: Community Control and Powerful Groups by Location

Location	SA	A	D	SD	NA
Kachikau	50.0	20.8	16.7	8.3	4.2
Mabele	26.9	28.4	22.4	17.9	4.5
Parakarungu	36.2	22.4	27.6	3.4	10.3
Satau	50.0	22.4	22.4	1.7	3.4
Kavimba	30.0	10.0	25.0	25.0	10.0

There was no variation across gender of household head regarding fear that conflicts would arise (chi-square insignificant at the .1 level; .31287).

Those in Kachikau, Kavimba and Satau especially felt that conflicts would arise (chi-square significant at the .1 level; .08986):

Table 2.50: Fear of Conflicts by Location

Location	SA	A	D	SD	NA
Kachikau	40.4	29.8	6.4	12.8	10.6
Mabele	29.9	28.4	23.9	16.4	1.5
Parakarungu	39.7	22.4	20.7	10.3	6.9
Satau	46.6	27.6	20.7	3.4	1.7
Kavimba	50.0	10.0	30.0	5.0	5.0

We read three statements related to utilisation of forest materials: "Residents of the enclave should not have to pay to get licenses to exploit forest resources commercially", "There are many people in this community earning a living from exploiting forest resources commercially", and "The community should have complete control over issuing forest reserve licenses". Forestry questions were important because there was an general perception that the creation of the forest reserves was a major point of conflict between residents and Government.

Chart 2.19 suggests that people feel that their proximity to the reserve should give them unrestricted access to the forest reserve, with over half strongly agreeing or agreeing; this did not vary across location (chi-square insignificant at the .1 level; .15579). Chart 2.20 indicates that people are generally unclear on whether people do make a living exploiting forest reserves commercially.

Chart 2.19: Residents Should Not Have to Get Licenses to Exploit Forests

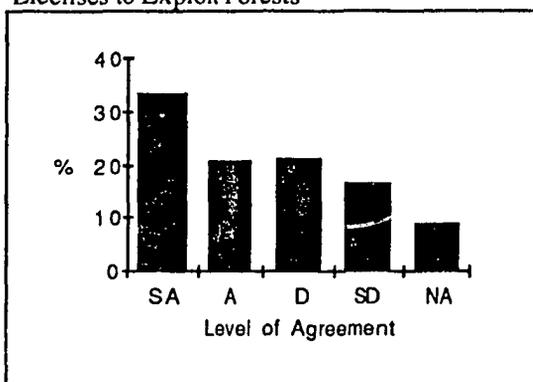
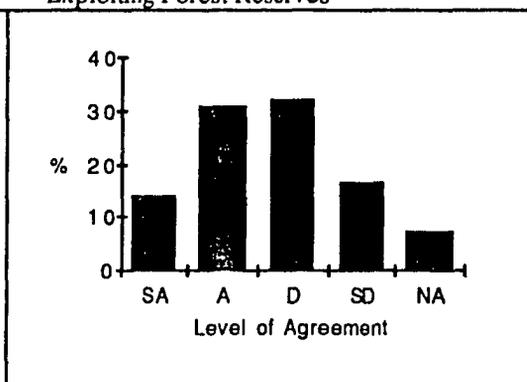


Chart 2.20: Many People Here Earn Living Exploiting Forest Reserves



When we asked about community control over the issuing of licenses for the forest reserve, there was widespread agreement that the enclave communities should have control, with three-quarters of all respondents either strongly agreeing or agreeing. The variance between Charts 2.19 and 2.20 are likely due to two factors: 1) people are not currently making a commercial living off the forests, except for wage employment for some households; and 2) people view control as a subsistence as well as a commercial issue, and would like to have continued access for firewood harvesting. There was no variation across location (chi-square insignificant at the .1 level; .31749), although there was variation across gender of household head, with female-headed households less interested in community control, perhaps due to fears that this would imply male control (chi-square significant at the .1 level; .05128).

Respondents agreed with the statement that the community should control the issuing of forest reserve licenses, and expressed an unhappiness with the method in which the licenses were currently issued (Chart 2.21):

Chart 2.21: Community Should Completely Control Issuing Forest Reserve Licenses

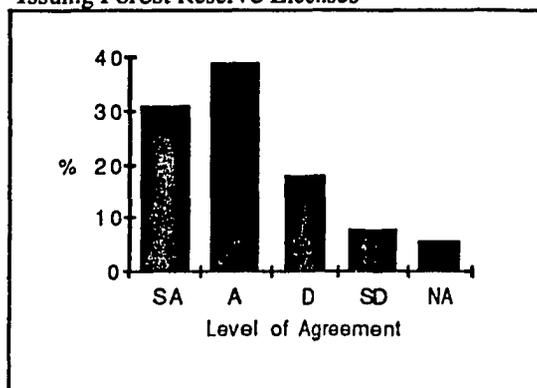
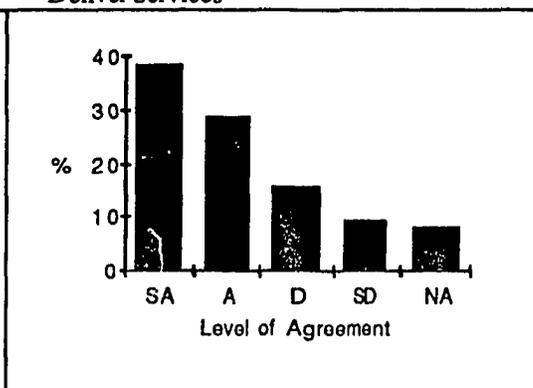


Chart 2.22: Community Groups Effectively Deliver Services



We moved to a series of questions about the perceived role of community action groups. Chart 2.22 was in response to the statement "Community groups operating in this area are effective in delivering needed services to the community". Two-thirds of all respondents felt that this was true. There was, however, locational variation, with residents of Mabele and Kavimba feeling more positive (chi-square significant at the .1 level; .01569), although there was no variation across gender of household head (chi-square insignificant at the .1 level; .97920):

Table 2.51: Effectiveness of Community Groups by Location

Location	SA	A	D	SD	NA
Kachikau	34.7	18.4	10.2	14.3	22.4
Mabele	47.8	26.9	13.4	9.0	3.0
Parakarungu	31.0	32.8	19.0	6.9	10.3
Satau	34.5	36.2	19.0	8.6	1.7
Kavimba	50.0	25.0	15.0	10.0	0.0

When asked who these groups provided services too, however, there was a mixed perception (Chart 2.23). Half of the respondents felt that the community action groups were only successful in reaching a minority of the population; this did not vary across location (chi-square insignificant at the .1 level; .21975) nor across gender of household head (chi-square insignificant at the .1 level; .15964). Based on the findings in Chart 24, it would appear that the reason they reach only a small number of people is because of their small numbers/limited outreach. Respondents came out strongly in favour of new community action groups. There was no variation across location (chi-square insignificant at the .1 level; .10856) nor gender of household head (chi-square insignificant at the .1 level; .12790).

Chart 2.23: Community Groups Only Help a Small Number of People

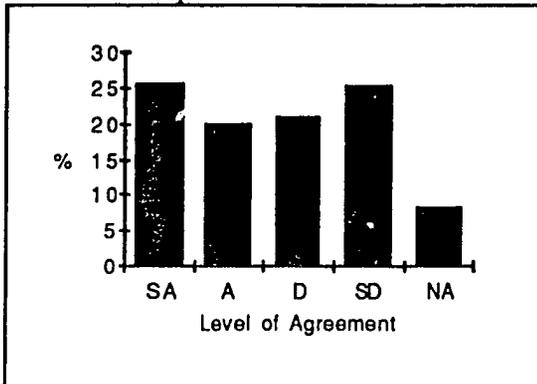
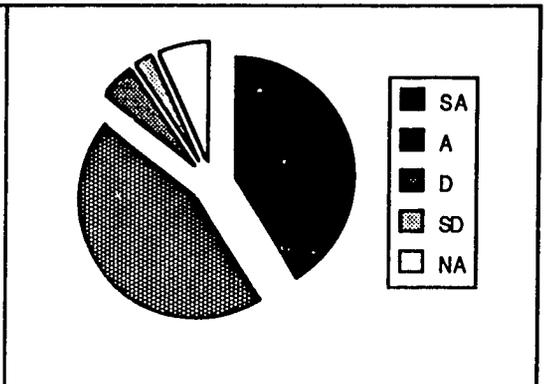


Chart 2.24: More Community Groups Should be Formed



Respondents felt that they should have control over veld product harvesting in their areas (Chart 2.25) (chi-square insignificant at the .1 level; .12320). This does not appear to be related to overharvesting, as over half of the respondents did not feel that overharvesting was a problem (Chart 2.26).

Chart 2.25: Community Should Control Veld Product Harvesting

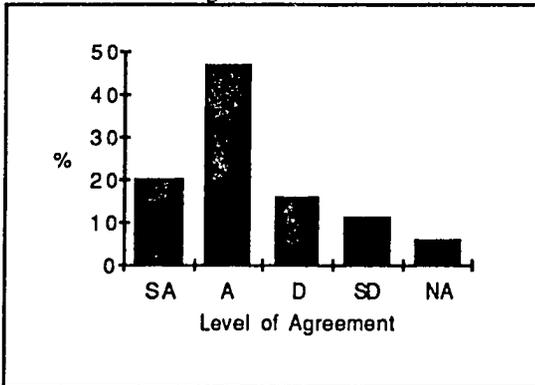
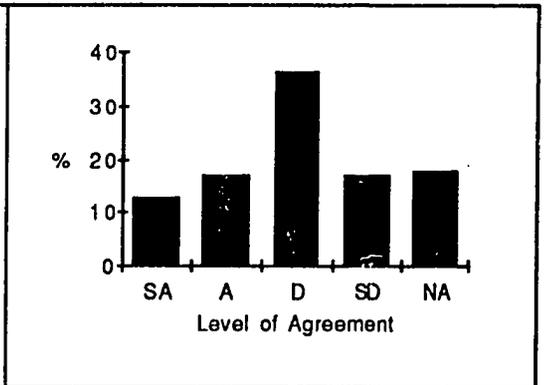


Chart 2.26: Veld Products Are Overharvested



There was, however, significant locational variation, with respondents in Kavimba and Mabele feeling that veld products were overharvested (chi-square significant at the .1 level; .00024); up to one-quarter of respondents could not assess whether overharvesting was a problem.

Table 2.52: Veld Product Harvesting by Location

Location	SA	A	D	SD	NA
Kachikau	12.0	16.0	26.0	26.0	20.0
Mabele	20.9	23.9	40.3	10.4	4.5
Parakarungu	0.0	10.5	50.9	10.5	28.1
Satau	15.5	10.3	32.8	22.4	19.0
Kavimba	15.0	30.0	15.0	15.0	25.0

When asked about community control over fishing grounds, most felt the question was not applicable both because many did not fish, and because they already felt that they had some control (Chart 2.27); there was no variation across location (chi-square insignificant at the .1 level; .24644). There was little to no feeling that the fishing grounds were being overexploited (Chart 2.28); there was no variation across location (chi-square insignificant at the .1 level; .12219).

Chart 2.27: Community Should Control Fishing Grounds

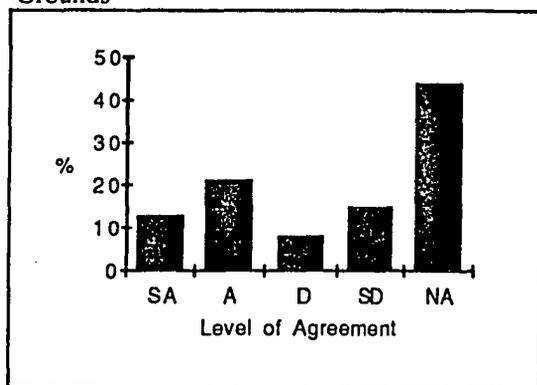
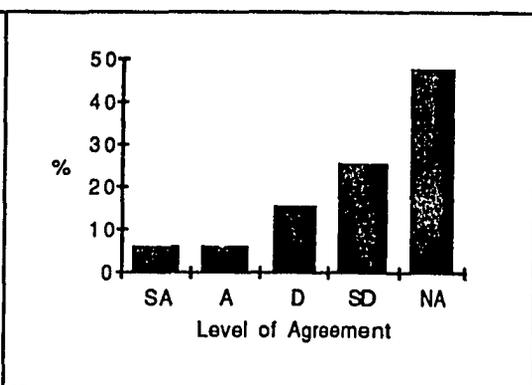


Chart 2.28: Fish Products Are Overharvested



Summary

A total of 253 interviews were conducted across the five enclave locations in the study area. Findings provide a basis from which changes in assets and other investment patterns can be measured over time. Attitudinal data suggest that respondents hold relatively strong feelings about a number of issues which have implications for project interventions. Further, in a number of cases this varied across location and gender of household head. In Chapter 3, Conclusions and Implications, we discuss these findings and what they might imply for project activities.

Chapter 3: Summary Findings and Implications

Introduction

In this chapter, we present the main findings from the survey, and discuss the implications of these findings.

Summary Findings

Finding 1: Measurement of project impact will need to take into account not only social and economic outputs and outcomes, but also important attitudinal variables.

Findings suggest that there is a need to improve the relationship between the Department of Wildlife and National Parks and Chobe Enclave residents. Acceptability of NRMP project inputs, including mobilisation activities, are critically dependent on an improvement in this relationship. Further, the project itself should consider intensifying social mobilisation activities in the Enclave, and assessing which mobilisation channels--traditional (e.g., dikgosi, traditional doctors, community opinion leaders), political (e.g., councillors) and Governmental (e.g., extension officers, district administration)--might serve as the most effective mobilisation channels.

Evidence from the baseline survey suggests that residents are not against DWNP *per se*, but rather have some fears arising from past interactions. A review of the compensation system leading to more timely compensation would also go a considerable way in improving relationships; it is understood that an internal review of the system is currently underway (December, 1992) with an eye to accelerating compensation while still avoiding fraud.

It is suggested that any future measures of project impact not just concentrate on economic progress, but also on key attitudinal variables. Further, attitudinal questions could serve as important measures of changing perceptions of the relationship between communities and wildlife resources. Particularly important attitudinal measures centre around attitudes towards DWNP, concerns over the distribution of benefits and costs in community-based wildlife utilisation programmes, and attitudes towards wildlife utilisation innovations.

Finding 2: The presence of a high number of female-headed households in the Chobe Enclave suggests that any project interventions must pay particular attention to how such households would be affected, and who willing and able they are to participate in the programme.

Female-headed households comprise over 60% of all households in the enclave, higher than in most other parts of Botswana. A nutrition survey undertaken by the Ministry of Health (1989) in 1989 indicated that, in spite of the drought-relief feeding programme, malnutrition in Chobe District was almost 50% higher than the average for other regions. While this is partially due to the presence of malaria and water-borne diseases, it is likely that it is also related to the high number of single-parent (de facto and de jure) households, and overall high levels of poverty and subsequent alcohol abuse.¹

Such an orientation should not, however, make the mistake of ignoring females in male-headed households when designing interventions and measuring project impact.

Finding 3: Plans to shift control over hunting quotas to communities should proceed.

Two-thirds of all respondents felt that the community should control the allocation of hunting licenses, arguing that community members should be the first to benefit from the utilisation of wildlife in their area. There was a fear, however, that only powerful members of the community would benefit unless sufficient care was undertaken. There was also a fear, expressed by two-thirds of all respondents, that conflicts would arise in the community over how the benefits would be distributed. These findings suggest that current plans for hunting quotas should proceed, but that considerable thought should be given to how this would actually occur. As fears about the influence of the powerful in allocating hunting licenses were particularly evident in Kachikau and Satau, it may be wise to first pilot activities in the other three locations.

It would also be necessary to fully consider the gender impact of the intervention, as per Finding 2 above.

¹ Unfortunately the survey did not measure malnutrition by the gender of household head.

Finally, given apparently positive attitudes towards the establishment of a community game guard system, it is recommended that consideration be given to such an intervention. The modified questionnaire, included as Annex B, suggests a number of measures which may be used. It is further recommended that upcoming community mobilisation activities probe carefully into this issue, to assess initial views towards such an intervention.

Finding 4: There is considerable room for working with Chobe Enclave residents through expanded community organisations. These organisations must, however, be community-based and community-driven. The NRMP should consider how it could facilitate the creation and expansion of such organisations.

The baseline survey found that a variety of community organisations and external non-governmental organisation activity existed in the enclave. Of particular interest are adult involvement in the primary schools in the area (through the PTA), church-related organisations, and the farmers committees. It is suggested that community organisations be considered as an important vehicle for mobilisation activities, with the proviso that enclave residents view some of the existing organisations as serving the interests of a few people. Further, membership and activism in such organisations could serve as a measure of project impact over time, particularly if natural resource-oriented organisations were to develop (e.g., wildlife clubs, conservation clubs, etc.). It is understood that, as of December 1992, all five villages have formed committees to liaise with DWNP and NRMP on initial project interventions; in four cases these are new committees, in one case the Village Development Committee has assumed this responsibility. While it is too early to tell whether these committees will function, and what role they might play, it does represent an opportunity to open a dialogue with community members.

Finding 5: Households in the Chobe Enclave, as with households elsewhere in Botswana, are generally well-linked with Government extension services.

Extension services are well-placed in the enclave to deliver services, suggesting that it would be useful for DWNP and NRMP to develop close linkages with these extension officers. This is particularly true for Ministry of Agriculture field officers. This underlines an urgent need for the NRMP to consider what its relationship is with the Ministry of Agriculture, and how a close working relationship might be developed. Such links are even more important when one considers that any project financial benefits would likely result in agricultural investments.

More generally, the NRMP should consider how it fits in with the provision of other services to project areas. The baseline survey found that rural service delivery in the Enclave was generally lower than elsewhere in Botswana. NRMP impact might be linked to the project's ability to help facilitate social service interventions in the project area. Further, NRMP should explore channels for inter-sectoral links through the District Extension Teams and the Village Extension Teams, and through liaison with the Communal First Development Area Co-ordinator.

Annex A: 1992 Questionnaire

Questionnaire Number _____

NATURAL RESOURCE MANAGEMENT PROJECT - Confidential BASELINE QUESTIONNAIRE - Setswana / English Version

Prepared and Administered by SIAPAC-Africa for the Botswana Natural Resource Management Project - July 1992

Field Supervisor Ck. (field), print initials: _____
Field Supervisor Ck. (office), print initials: _____
Date Questionnaire Entered, print initials: _____
Date Questionnaire Verified, print initials: _____

Village Code: _____

Enumerator Code: _____

Date: _____

Start Time: _____ Finish Time: _____ Total Time: _____

=====

Demographic Information

- | | |
|---|-------|
| 1) First Name: _____ | _____ |
| 2) Age _____ | _____ |
| 3) Head of Household: Male ___ Female de jure ___ Female de facto ___
(Refers to main decisionmaker. If a female respondent states a male head, ask if the male has been around the home village for > 6 months over the past year. If he has been absent, mark her as the 'female de facto' head of household. If he has been present, mark 'male' head of household. If males are weekly or monthly 'commuters' to their home village, mark 'male head of household even if this does not total 6 months.) | _____ |
| 4) Highest education level of household head
___-1 none
___-2 primary (stds 1-7)
___-3 junior secondary (Forms 1-2)
___-4 Senior Sec. + (Forms 3-5, O-level or higher) | _____ |
| 5) Marital Status
___-1 single/separated (skip to 6)
___-2 married / living together (go to 5a)
___-3 divorced (skip to 6)
___-4 widowed (skip to 6)
___-# Other (specify) _____ | _____ |
| 5a) Highest education level of spouse of household head:
___-1 none
___-2 primary (stds 1-7)
___-3 junior secondary (Forms 1-2)
___-4 Senior Sec. + (Forms 3-5, O level or higher) | _____ |
| 6) Number of children fifteen and under: _____ | _____ |
| 7) Number of adults sixteen and older _____ | _____ |

Community Functions

- 8) *A wena kgotsa mongwe mo lapeng o mo ditirong dingwe tsa morafe?*
 Are you or anyone in the household involved in any community groups?
 [Enumerator: probe for frequency of attendance at meetings / functions.
 See code (*) below. Tick as many as appropriate].

___-01 None (tick alone)				
	#females attending	#males attending	attend- ance*	Freq.**
___-02 VDC	___	___	___	___
___-03 Village Health Committee	___	___	___	___
___-04 PTA	___	___	___	___
___-05 Farmers Committee	___	___	___	___
___-06 BCW	___	___	___	___
___-07 YWCA	___	___	___	___
___-08 Church group	___	___	___	___
___-09 conservation committee (inc. Agricultural Resources Board)	___	___	___	___
___-10 opinion leader	___	___	___	___
___-11 motshelo	___	___	___	___
___-12 co-operative	___	___	___	___
___-## other _____	___	___	___	___
___-## other _____	___	___	___	___

*codes ATTENDANCE (1=every time group meets, 100%) (2=most of the time group meets, 75-99%) (3=sometimes, 50-74%) (4=rarely, <50%)
 ** codes FREQUENCY (indicate the number of meetings the group held in the past 12 months)

- 9) *Fa e sale ngwaga o o simologa, o inaakantse ga kae le maphaka a a latelang?*
 Since the beginning of this year, how many times, if any, have you had contact with any of the following? [Enumerator: READ categories]

Officer	#Visits / Contacts
___-01 Agricultural Demonstrator	___
___-02 Asst. Community Development Off.	___
___-03 Community Development Officer	___
___-04 District Agricultural Officer	___
___-05 Crop Production Officer	___
___-06 Wildlife Personnel	___
___-07 CFDA Co-ordinator	___
___-08 Rural Industrial Officer	___
___-09 Family Welfare Educator/Nurse	___
___-10 Literacy Assistant	___
___-11 Remote Area Dweller Officer (RADO)	___
___-12 Livestock Assistant	___
___-13 Literacy Group Leader	___
___-14 Tirelo Sechaba Participant	___
___-15 Farmers Committee	___
___-16 Other (specify) _____	___

- 9a) [If respondent has had any contact with above officers]
Go inaakanya e ne ele ga mofuta ofe?
 What was the nature of the contact?

Code Nature of contact

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Household Income

- 10) *Ke bale kae mo lapeng ba ba direlang madi mo tirong ya nako tsolthe?*
 How many member of the household are involved in full time (more than 6 months per year) wage employment? [Enumerator: probe for type of work, pay and #years of formal employment.] _____

Sector	enclave	pay	#years in wage employment	gender	age
_____	Y N	_____	_____	_____	_____
_____	Y N	_____	_____	_____	_____

**Codes ENCLAVE = job in the enclave (Y) or outside the enclave (N)
 PAY = SALARY PER MONTH (1 = <=P50, 2 = P51-100, 3 = P101-150, 4 = P151-200, 5 = P201-250, 6 = P250-500, 7 = P501-1000, 8 = P1001+)
 GENDER (1=male) (2=female)
 AGE (1=under 15) (2=15 to 24) (3=25 to 34) (4=35 to 44) (5=45 or older)

- 11) *Ke bale kae mo lapeng ba ba direlang madi mo tirong ya nakwana?*
 How many members of the household are involved in casual (less than 6 months per year) or temporary wage employment in this household? [Enumerator: Include all "piece work". Probe for type of work, pay and #months employed in the activity in the last year.] _____

Sector	enclave	pay	#months in wage employ.	gender	age
_____	Y N	_____	_____	_____	_____
_____	Y N	_____	_____	_____	_____

**Codes ENCLAVE = job in the enclave (Y) or outside the enclave (N)
 PAY = SALARY PER MONTH WHEN WORKING (1 = <=P50, 2 = P51-100, 3 = P101-150, 4 = P151-200, 5 = P201-250, 6 = P250-500, 7 = P501-1000, 8 = P1001+)
 GENDER (1=male) (2=female)
 AGE (1=under 15) (2=15 to 24) (3=25 to 34) (4=35 to 44) (5=45 or older)

- 12) *A gonale mongwe mo lapeng yo o iperekang kgotsa a le mo kgwebong?*
 Is anyone self-employed or involved in small scale enterprise / business activities? [Enumerator: Include only household members living in the enclave. Include beer/kgadi, hunting/gathering, fishing, handicrafts, etc. Exploitation of forestry products is excluded here, and is discussed later]

____-1 yes
 ____-2 no

Describe: 1) _____ 2) _____ 3) _____

12a) # months per year in operation (by activity) 1) ____ 2) ____ 3) ____

- 13) *A gonale mongwe mo lapeng yoo kileng a amogela katiso?*
 Has anyone in the household ever received training?

____-1 yes
 ____-2 no [skip to 14]

- 13a) *A katiso e ne ele ya ditiro dingwe tse ba lelapa ba inaakantseng le tsona?*
 Was the training received directly applicable to any of the activities the household is involved in now? [Enumerator: Probe]

____-1 yes - agricultural
 ____-2 yes - enterprise
 ____-3 yes - formal employment
 ____-4 yes - other (specify) _____
 ____-5 no

13b) *Kaliso e ne e tsaya sebaka se se kae?*

How long was the training?

___-1 less than two weeks

___-2 two weeks or more

14) *A wena kgotsa mongwe mo lapeng o kile a bona thuso nngwe ya ga goromente?*
Have you or anyone living in the household ever received any formal Governmental assistance?

___-1 yes [go to 14a]

___-2 no [skip to 15]

14a) *Thuso ya madi e e neng ya amogelwa e nE ele ya eng?*

What financial assistance package was received? [Tick as many as appropriate.]

___-1 FAP

___-5 SLOCA

___-2 NDB

___-6 LG17

___-3 AE10

___-7 ARAP

___-4 ALDEP

___-# Other _____

Household Assets

15) *Tswee tswee mpoletela gore mo go tse di latelang, ke dife tse bangwe mo lapeng ba nang le tsona?*

Please tell me which of the following items are owned by members of the household: [Enumerator: Tick as many as appropriate.]

<u>Item</u>	<u>Number</u>
___-01 plough	_____
___-02 spade	_____
___-03 axe	_____
___-04 donkey cart	_____
___-05 sledge	_____
___-06 wheelbarrow	_____
___-07 tractor	_____
___-08 bicycle	_____
___-09 gun	_____
___-10 snare/spear	_____
___-11 bow and arrows	_____
___-12 motor vehicle	_____
___-13 large cooking pots	_____
___-14 large plastic drums	_____
___-15 fishing net/basket	_____
___-16 mokoro	_____
___-17 large furniture	_____ (refers to couches, large tables, etc.)
___-18 pit latrine	_____
___-19 tap in yard	_____
___-## Other (list below)	_____
_____	_____
_____	_____

AGRICULTURAL PRODUCTION & LAND USE CONFLICTS

Crop Production

16) *A mo lapeng la lona lo inaanitse le tsa temo?*
Is the household involved in crop production?

___-1 yes [go to 16a]

___-2 no [skip to 18]

16a) *Lonale ditema tse kae?*

How many hectares do you have? _____

16b) *Mo ngwageng o o fetileng lo ne lo lemile ditema tse kae?*

How many hectares did you plough/plant last year? _____

i) [If yes to 17b] *A lone hwa ikopela kgotsa hwa atswiwa ke ba DWNP kgotsa ba Land Board?*

Did you apply for/were you compensated by DWNP or the Land Board?

___-1 yes

___-2 no

Lo ne hwa a tswiwa go le kae? How much compensation: _____

comments: _____

Livestock Production

18) *A lona le diruiwa dingwe?*

Do you keep any livestock?

___-1 yes [go to 18a]

___-2 no [skip to 19]

18a) *Ke tsile go botsa ka palo ya diruiwa tse di ruiweng ke ba lelapa ba ba nnang fa, ke tla a di bala ka go latelelana, tswee tswee, mpolelela gore dingwe le dingwe di kae?*

I am going to ask about the numbers of livestock kept by members of the household living here, reading some ranges. Please tell me the appropriate range. [Enumerator: circle appropriate response for each type of livestock listed. Remind them that the information is confidential.]

Cattle

1 none

2 1-5

3 6-10

4 11-15

5 16-20

6 21 or more

Goats

1 none

2 1-10

3 11-25

4 26-50

5 51-100

6 100 +

Ploughing

Oxen: _____

Donkeys: _____

18b) *A go na le dingwe tsa diruiwa tsa lona tse di kileng tsa lhasetwa ke diphologolo tsa naga mo ngwageng o o felileng?*

Have any of your livestock been attacked by wild animals in the past year? [Tick as many as appropriate.]

___-1 yes, by lion

___-2 yes, by leopard

___-3 yes, by hyaena

___-4 yes, by any other wild animal (specify: _____)

___-5 no

i) [If yes to 18b] *A lo ne hwa begela ba puso ka kgang e o?*

Did you report the matter to any officials?

___-1 yes

___-2 no

comments: _____

ii) [If yes to 18b] *A lo ne hwa bolaya phologolo e e neng e bolale diruiwa tsa lona?*

Did you kill the animal that killed your livestock?

___-1 yes

___-2 no

comments: _____

iii) [If yes to ii above] *A lo ne hwa atswiwa ke DNWP?*

Were you compensated by DWNP? _____

___-1 yes

___-2 no

Mofuta wa katso (jaaka, letlalo, phologolo)

Nature of Compensation (e.g., skin, trophy): _____

comments: _____

18c) *Mo pakeng e e fetileng, go simolola ka kgwedi ya firikgong, lo dirisitse madi jang mo go isa loruo?*

What were your investments in livestock from last Christmas (since 1 Jan.):

(include mafisa & in-kind investments)

Medicines Y N Feed Y N Stud Service Y N Purchase Goats Y N

Purchase Cattle Y N Other (specify) _____

18d) *Lo bolaile lwa ba lwa rekisa dikgomo le dipodi di le kae mo pakeng yone e e fetileng, go simolola ka firikgong?*

What has been your slaughter and sales of cattle and goats from last Christmas (since 1 Jan.):

Cattle Slaughtered: _____ Cattle Sold: _____

Goats Slaughtered: _____ Goats Sold: _____

Natural Resource Use

Hunting

19) *Mo ngwageng o o fetileng wena kgotsa mongwe mo lapeng, le tsumile ga kae (lo oja nama, lo dirisa mallalo jalo jalo, e seng lo rekisa)?*

How many times in the past year did you or other members of your household successfully hunt for your household's direct benefit (consumption of meat, use of skins, etc. not for sale of items)?

____-1 None [skip to 22]

____-2 1-10

____-3 11-20

____-4 21-30

____-5 more than 30

____-# other _____

19a) *Lo dirisa dibolai dife go tsoma?*

What weapons do you use for hunting? [Tick as many as appropriate]

____-1 gun

____-2 snare

____-3 spear

____-# other _____

20) *Lo bolaile diphologolo tsa motuta ofe go simolola ka kgwedi ya firikgong?*

What species have you or your family members killed since Christmas (from 1 Jan.)?

[ENUMERATOR: Underline the fact that you are not going to ask how many licenses they have.] [Enumerator: list all species. See codebook for animal codes.]

Type	Code	Number
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

21) *A gale le gale lo rekisa nama ya diphologolo kgotsa lo e abelana ka sengwe?*
Do you normally sell or barter game meat?

____-1 yes

____-2 no

Fishing

22) *Lo ja tlhapi malatsi a le kae ka beke?*

How many days per week, on average, do you eat fish?

23) *A gale le gale lo rekisa tlhapi kgotsa lo e abelanana le mongwe ka sengwe?*

Do you normally sell or barter fish? [Enumerator: include dried fish]

____-1 yes

____-2 no

Gathering

- 24) *Go simolola ka firikgong, ke ga kae fa wena kgotsa mongwe mo lapeng a ne a bapala dijo tsa naga go tla go di ja?*
 How many times since Christmas (from 1 Jan.) did you or other members of your household gather veld products from the bush for direct consumption? (Enum: include palm, melons, bark, berries, fruit, medicinal plants, etc.)
 ___-1 None [skip to 27]
 ___-2 1-10
 ___-3 11-20
 ___-4 21-30
 ___-5 more than 30 (more than once each week)

- 25) *Mo kgweding tse thataro tse di fitihwng one wa bapala di ka tlholego dife?*
 What veld products were gathered in the past 6 months?

- 26) *A gale le ga le lo rekisa dilo tsa naga kgotsa lo di abelana le mongwe ka sengwe?*
 Do you normally sell or barter veld products?
 ___-1 yes
 ___-2 no

Forestry

- 27) *A lo rekisa dikgong kgotsa lo di abelana ka sengwe?*
 Do you sell or barter fuelwood?
 ___-1 yes - sometimes using a pick-up truck
 ___-2 yes - sometimes using a donkey cart/sledge
 ___-3 yes - usually on foot
 ___-4 no

27a) [If sell or barter wood] *Ga kae go simolola ka firikgong?*
 Frequency since January: _____

- 28) [If in small-scale production] *A lo dirisa logong go dira dingwe tsa didirisiwa tsa lona?*
 Do you use wood to make any products?
 ___-1 yes
 ___-2 no

28a) *A lwa rekisa kgotsa lo a di abelawa ka sengwe?*
 Do you sell or barter these products?
 ___-1 yes
 ___-2 no

28b) [If sell or barter products] *Ga kae go simolola ka firikgong?*
 Frequency since January: _____

Attitudinal Measures

Mo go tse di latelang o tla balelwa diele mme go tla tlhoka fala gore ore wa dumalang, kgotsa, ga or dumalane.
 For the next set of questions you will be presented with statements and asked your if you agree or disagree with the statement. SA means strongly agree, A means agree, D means disagree, and SD means strongly disagree. NA stands for Not Applicable or Not Relevant. [Enumerator: circle response]

- 29) *Ba lephata la diphologolo ba na le dithata tse dintsi mo go tse di amang bothokwa jwa temo thuo mo lefelong le*
 The Department of Wildlife and National Parks has too much power regarding issues of agricultural importance in this area

SA A D SD NA

- 30) *Batlhokomedi ba diphologolo ba ba direlang mo lefelong le ba boikobo mo bathong ba motsana o*
Wildlife Scouts working in this area generally show respect for people of this community SA A D SD NA
- 31) *Motsana o o ka boelwa fa ba DWNP ba ka katisa batho ba motse go nna batlhokomedi ba diphologolo*
This community would benefit if DWNP trained people from the village to become community game scouts SA A D SD NA
- 32) *Gantsi goromente o atswa balemi-barui ba dijwalo tsa bone kgotsa diruiwa di bolailweng ke diphologolo tsa naga*
Government usually compensates farmers whose crops or livestock have been destroyed by wildlife SA A D SD NA
- 33) *Mo dijwalong tse di sentsweng ke dilhologolo tsa naga, DWNP ga e atswa mo go kgotsolatsang?*
For crops damaged by wildlife, DWNP does not compensate enough SA A D SD NA
- 34) *Thuso ya DWNP e bothokwa thata mo go thuseng batho ba motsana o mo go rarabololeng mathata a bone mabapi le diphologolo tsa naga*
DWNP is effective in helping residents of this community solve problems regarding wildlife SA A D SD NA
- 35) *Ba telapa la me ba ne ba sollega thata mabapi le dijo tse di sa lekanang ka gore diphologolo dine di sentse motswedi wa dijo tsa rona (masimo)*
My family has suffered from inadequate food intake, because wild animals destroy our sources of food SA A D SD NA
- 36) *Nngwe ya ditiro tsa DWNP ke go thusa metsana go sireletsa diphologolo tsa naga*
One of the roles of DWNP is to assist communities in helping conserve wildlife SA A D SD NA
- 37) *Ba diofisi dikgolo tsa DWNP ba kutlwelobotshoko ma dikopong tsa baagi ba motsana o*
DWNP headquarters personnel are sympathetic to the needs of the residents of this community SA A D SD NA
- 38) *DWNP le balemi ba tshwanetse go dirisanya mmogo, gore batho ba ba senyeditsweng dijwalo ke diphologolo ba le ba atswiwe ka nako*
DWNP and Agriculture Demonstrators need to work more closely, so that people whose crops are damaged by wild animals are compensated in a timely manner SA A D SD NA
- 39) *Go tsoma ke motswedi wa bothokwa wa nama mo baaging ba motsana o*
Hunting is an important source of meat for residents of this community SA A D SD NA
- 40) *Batho ba le bantsi ba tsoma mo lefelong le ke tsomang mo go lone, ebile ga gona diphologolo tse di lekanang*
Too many people are hunting in the area I hunt, and there is not enough game SA A D SD NA
- 41) *Baagi ba lefelo le ga ba a tshwanela go duela gore ba fiwe tella ya go dirisa dilo tsa mo nageng*
Residents of the enclave should not have to pay to get licenses to exploit the resources in the forest SA A D SD NA
- 42) *Go nale batho ba le bantsi ba ba tshelang ka go dirisa di lo tsa mo sekgweng ka go di rekisa*
There are many people in this community earning a living from exploiting forest resources commercially SA A D SD NA
- 43) *Baagi ba motsana o ba tshwanetse go nna le seabe se se tona mo go abeleng batho ditella tsa go dirisa dilo tse di mo nageng*
The community should have complete control over issuing forest reserve licenses SA A D SD NA

- 44) *Madi a a tswang mo dituelong tsa ditella tsa go tsoma a tshwanetse go thusa baagi ba ba mo tikologong ya mafelo a go tsoma fela bale bosi*
Money collected from hunting licenses should benefit all citizens of Botswana SA A D SD NA
- 45) *Madi a a tswang mo dituelong tsa ditella tsa go tsoma a tshwanetse go thusa baagi ba Botswana*
Money collected from hunting licenses should benefit only people living near the hunting areas SA A D SD NA
- 46) *Ditlhophana tsa batho tse di direlang mo lefelong le di na le thuso e kgolo mogo tisetseng batho dithuso tse di tlhokegang tsa motse*
Community groups operating in this area are effective in delivering needed services to the community SA A D SD NA
- 47) *Ditlhophana tsa batho tse di direlang mo lefelong le di thusa palonyana e se kae fela ya batho ba motse o*
Community groups help only a small number of people in this village SA A D SD NA
- 48) *Re tshwanetse go bopa ditlhophana tsa batho go thusa motsana wa ga rona go amogela dithuso tse di o tshwanetseng*
We should form more community groups to help our community receive the benefits it is due SA A D SD NA
- 49) *Re tshwanetse go fiwa seabe mo go laoleng go roba diko tsa naga, mme re tla a tsaya dikgato go tlhomanisa gore di seka tsa robiwa mo go feteletseng*
We should be given control over the harvesting of veld products, and we would take steps to ensure that they would not be over-harvested SA A D SD NA
- 50) *Batho ba le bantsi ba bapala diko tsa mo nageng fa ke bapalang teng, mme ebile diko tsa naga ga di a lekana*
Too many people are gathering in the area were I gather, and there are not enough veld products SA A D SD NA
- 51) *Re tshwanetse go fiwa seabe mo go laoleng go tshwara ditlhapi, mme re tla a tsaya dikgato go bone gore go di tshwanwe mo go feteletseng*
We should be given control over fishing grounds, and we would take steps to ensure that they would not be over-fished SA A D SD NA
- 52) *Batho ga ba bantsi fa ke tshwarang ditlhapi teng jalo bantsi jwa ditlhapi bo a kgotsofatsa*
There are not too many people fishing in the area I fish, and there are therefore enough fish SA A D SD NA
- 53) *Batho ba motsana o ba tshwanetse go newa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ka gore re itse go laola dilo gore go se ka ga tsongwa mo go feteletseng*
The community should be given control over the hunting quota, as we know how to control things so that there is no over-hunting SA A D SD NA
- 54) *Batho ba motsana o ba tshwanetse go fiwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ka gore ke rona re tshwanetseng go boelwa*
The community should be given control over the hunting quota, as we are the ones who should directly benefit SA A D SD NA
- 55) *Fa motsana o o neelwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ba ba seng thata mo motseng ga ba na go boelwa*
If the community takes control of hunting quotas, those who are not powerful in the community will not benefit. SA A D SD NA
- 56) *Fa motsana o o ka fiwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, go tla a nna le dikgotlhang mo motseng*
If the community takes control of hunting quotas, there will be many conflicts in our community. SA A D SD NA

Annex B: The Character of a Repeat Study for 1993

The principal aim of a repeat study will be to assess project impact. It is intended that the results from the 1993 study be compared to the 1992 findings, measuring attitudinal, social and economic change and isolating those factors which have led to such change. Because of financial considerations and the level of effort required to implement a survey again in 1993, the questionnaire has been considerably cut back, and is more focussed than the baseline questionnaire.

Given that the measurement of project impact is complex, and given that project impact can be subtle and multifaceted, there is a need to carry out both quantitative and qualitative research. For 1993, the quantitative questionnaire included below represents a first attempt to establish measures of project impact, and measure community changes over time. It is a draft instrument, and would need to undergo significant revision based on input from NRMP and DWNP members, and based on pre-testing. Particular attention would need to be focussed on additions to the attitudinal measures, and to the final section on attitudes towards new ideas. All questions in the final version would need to be translated into Setswana.

The use of enclave residents to carry out the study, under the guidance of experienced supervisors, proved to be quite beneficial. In 1993, it may be possible to use the DWNP supervisor to run the study, under the guidance of the project sociologist, with DWNP directly contracting with local enumerators (if possible, the same ones used in 1992). The 1993 study should employ the same sampling strategy as the 1992 study, as described in the SIAPAC-Africa proposal, and should maintain a sample size of 250. However, the sample size by location should be based on 1991 census results, not 1981 census figures; it is expected that full census information for the enclave will be available by mid-1993, including the total number of households in the five villages and their catchment areas.

No qualitative research was undertaken in 1992, but should be undertaken in 1993. Key informant interviews and focus group discussions would provide considerable 'soft' information which would help DWNP/NRMP understand the nuances of project impact, or indeed resistance to the project. Focus group discussions should contain 5-6 homogeneous individuals as follows: 2 groups of community opinion leaders (mixed male and female), one from Kavimba and one from Satau; 2 groups of disadvantaged households (mixed male and female), one from Parakarungu and one from Mabele; and 2 groups of female-headed households (mixed de facto and de jure, focussing on cattle-poor households), one from Mabele and one from Kachikau). Focus group discussion should be led by a trained focus group discussion leader.

Over-time ethnographic research, while serving a useful function in helping outsiders to understand how time and resources are allocated by households, and useful in gaining detailed insights into

attitudes, are quite costly and require considerable care in implementation and analysis, and have therefore not been included in the budget or schedule.

In considering a repeat study in 1993, we recommend utilisation of the following indicators using quantitative or qualitative approaches; quantitative measures of these indicators are proposed in the revised questionnaire immediately following this table.

Indicators	Quantitative or Qualitative
Age of Household Head	Quantitative
Household Headship	Quantitative
Education (Head & Highest)	Quantitative
Marital Status (Head)	Quantitative
# Children & Adults	Quantitative
Community Action Groups - Existence & Growth	Quantitative
Community Action Groups - Function	Quantitative & Qualitative
Community Action Groups - Democratic Control	Qualitative
Community Action Groups - allocation of licenses among clients	Quantitative & Qualitative
Community Action Groups - benefit distribution	Quantitative & Qualitative (including an inspection of books)
Community links with Government Departments - frequency of links	Quantitative
Community links with Government Departments - types of links	Quantitative
Community links with Government Departments - training which is applicable to natural resource utilisation (numbers)	Quantitative
Community links with Government Departments - training which is applicable to natural resource utilisation (type)	Quantitative
Community links with Government Departments - loans/grants which are applicable to natural resource utilisation (number & size)	Quantitative
Employment - formal sector (outside enclave)	Quantitative
Employment - formal sector (in enclave)	Quantitative
Employment - direct project related	Quantitative & Qualitative
Employment - small-scale enterprise sector (in enclave) - economic growth-related	Quantitative
Employment - small-scale enterprise sector (in enclave) - direct project related	Quantitative
Remittances - formal sector (outside enclave)	Quantitative
Household Assets - purchases	Quantitative
Household Assets - livestock	Quantitative
Household Assets - investment in land	Quantitative
Wildlife damage and compensation	Quantitative
Exploitation of natural resources - hunting	Quantitative & Qualitative
Exploitation of natural resources - fishing	Quantitative
Exploitation of natural resources - gathering	Quantitative
Attitudes - towards DWNP	Quantitative
Attitudes - towards project interventions	Quantitative
Attitudes - towards community action groups	Quantitative
Attitudes - towards utilisation of natural resources	Quantitative

Questionnaire Number _____

NATURAL RESOURCE MANAGEMENT PROJECT - Confidential
YEAR 1 IMPACT QUESTIONNAIRE - Setswana / English Version

Prepared and Administered by SIAPAC-Africa for the Botswana Natural Resource Management Project - July 1992

Field Supervisor Ck. (field), print initials: _____
Field Supervisor Ck. (office), print initials: _____
Office Spot Check: _____
Date Questionnaire Entered, print initials: _____
Date Questionnaire Verified, print initials: _____

Village Code: _____

Enumerator Code: _____

Date: _____

Year: _____

Start Time: _____ Finish Time: _____ Total Time: _____

=====
Demographic Information
=====

1) First Name: _____

2) Age _____

3) Head of Household: Male ___ Female de jure ___ Female de facto ___

[Refers to main decisionmaker. If a female respondent states a male head, ask if the male has been around the home village for > 6 months over the past year. If he has been absent, mark her as the 'female de facto' head of household. If he has been present, mark 'male' head of household. If males are weekly or monthly 'commuters' to their home village, mark 'male head of household even if this does not total 6 months.]

4) Highest education level of household head

- ___-1 none
___-2 primary (stds 1-7)
___-3 junior secondary (Forms 1-2)
- ___-4 Senior Sec. + (Forms 3-5, O-level or higher)

5) Marital Status

- ___-1 single/separated (skip to 6)
___-2 married / living together (go to 5a)
___-3 divorced (skip to 6)
___-4 widowed (skip to 6)
___-# Other (specify) _____

5a) Highest education level in household:

- ___-1 none
___-2 primary (stds 1-7)
___-3 junior secondary (Forms 1-2)
- ___-4 Senior Sec. + (Forms 3-5, O level or higher)

6) Total number of children fifteen and under: _____

7) Total number of adults sixteen and older _____

Community Functions

- 8) *A wena kgotsa mongwe mo lapeng o mo ditirong dingwe tsa morafe?*
 Are you or anyone in the household involved in any community groups? [Enumerator: probe for frequency of attendance at meetings / functions. See code (*) below. Tick as many as appropriate].

___-01 None (tick alone)	#females attending	#males attending	attend- ance*	Freq.**
___-02 VDC	___	___	___	___
___-03 Village Health Committee	___	___	___	___
___-04 PTA	___	___	___	___
___-05 Farmers Committee	___	___	___	___
___-06 BCW	___	___	___	___
___-07 YWCA	___	___	___	___
___-08 Church group	___	___	___	___
___-09 conservation committee (inc. Agricultural Resources Board)	___	___	___	___
___-10 opinion leader	___	___	___	___
___-11 motsheko	___	___	___	___
___-12 co-operative	___	___	___	___
___-13 crime prevention	___	___	___	___
___-## other _____	___	___	___	___
___-## other _____	___	___	___	___

* codes ATTENDANCE (1=every time group meets, 100%) (2=most of the time group meets, 75-99%) (3=sometimes, 50-74%) (4=rarely, <50%)

** codes FREQUENCY (indicate the number of meetings the group held in the past 12 months)

- 9) *Fa e sale ngwaga o o simologa, o inaakantse ga kae le maphaka a a latelang?*
 Since the beginning of this year, how many times, if any, have you had contact with any of the following? [Enumerator: READ categories]

Officer	#Visits / Contacts
___-01 Agricultural Demonstrator	___
___-02 Asst. Community Development Off.	___
___-03 Community Development Officer	___
___-04 District Agricultural Officer	___
___-05 Crop Production Officer	___
___-06 Wildlife Personnel	___
___-07 CFDA Co-ordinator	___
___-08 Rural Industrial Officer	___
___-09 Family Welfare Educator/Nurse	___
___-10 Literacy Assistant	___
___-11 Remote Area Dweller Officer (RADO)	___
___-12 Livestock Assistant	___
___-13 Literacy Group Leader	___
___-14 Tirelo Sechaba Participant	___
___-15 Farmers Committee	___
___-16 Other (specify) _____	___

Household Income

- 10) *Ke bale kae mo lapeng ba ba direlang madi mo tirong ya nako tsotlhe?*
 How many member of the household are involved in full time (more than 6 months per year) wage employment? [Enumerator: probe for type of work, pay and #years of formal employment.] _____
- 11) *Ke bale kae mo lapeng ba ba direlang madi mo tirong ya nakwana?*
 How many members of the household are involved in casual (less than 6 months per year) or temporary wage employment in this household? [Enumerator: Include all "piece work". Probe for type of work, pay and #months employed in the activity in the last year.] _____

- 12) *A gonale mongwe mo lapeng yo o iperekang kgotsa a le mo kgwebong?*
 Is anyone self-employed or involved in small scale enterprise / business activities? [Enumerator:
 Include only household members living in the enclave. Include beer/kgadi,
 hunting/gathering, fishing, handicrafts, etc.]
 ___-1 yes
 ___-2 no

Describe: 1) _____ 2) _____ 3) _____

12a) # months per year in operation (by activity) 1) _____ 2) _____ 3) _____

- 13) *A wena kgotsa mongwe mo lapeng o kile a bona thuso nngwe ya ga goromente?*
 Have you or anyone living in the household ever received any formal Governmental assistance?
 ___-1 yes [go to 13a]
 ___-2 no [skip to 14]

13a) *Thuso ya madi e e neng ya amogelwa e nE ele ya eng?*
 What financial assistance package was received? [Tick as many as appropriate.]

- ___-1 FAP _____-5 SLOCA
 ___-2 NDB _____-6 LG17
 ___-3 AE10 _____-7 ARAP
 ___-4 ALDEP _____-# Other _____

Household Assets

- 14) *Tswee tswee mpoletela gore mo go tse di latelang, ke dife tse bangwe mo lapeng ba nang le tsone?*
 Please tell me which of the following items are owned by members of the household: [Enum: Tick as
 many as appropriate.]

Item	Number
___-01 plough	_____
___-02 spade	_____
___-03 axe	_____
___-04 donkey cart	_____
___-05 sledge	_____
___-06 wheelbarrow	_____
___-07 tractor	_____
___-08 bicycle	_____
___-09 gun	_____
___-10 snare/spear	_____
___-11 bow and arrows	_____
___-12 motor vehicle	_____
___-13 large cooking pots	_____
___-14 large plastic drums	_____
___-15 large metal drums	_____
___-16 fishing net/basket	_____
___-17 mokoro	_____
___-18 large furniture	_____ (refers to couches, large tables, etc.)
___-19 pit latrine	_____
___-20 tap in yard	_____
___-## Other (list below)	_____
_____	_____
_____	_____

AGRICULTURAL PRODUCTION & LAND USE CONFLICTS

Crop Production

- 15) Is your household involved in crop production?
 ___-1 yes [go to 15a]
 ___-2 no [skip to 17]

15a) *Lonale dilema tse kae?*
 How many hectares do you have? _____

15b) *Mo ngwageng o o fetileng lo ne lo lemile ditema tse kae?*
How many hectares did you plough/plant last year? _____

i) *Tema nngwe le nngwe e tshitse dikge!sana tse kae tsa jalo e e lemitwena go feta tse dingwe?*

What was the yield per hectare last year of the main crop in bags? (Tick only one)

____-1 none [skip to 16]

____-2 less than 1 bag

____-3 1-3

____-5 7-9

____-6 10-12

____-7 13 or more

ii) *Mo pakeng ena le bone madi a a kae mo thekising ya dijwalo?*

What was the income from sales of crops this most recent season?

15c) *O diristise madi jang mo go tsa temo mo pakenge?*

What were your investments in crop production this most recent season:

[include on-farm in-kind payment of any of the three]

Hire for ploughing Y N Fertiliser Y N Seeds Y N Pesticides Y N

Other (specify): _____

16) *A go na le dingwe tsa dijwalo tsa lona tse di nang di sentswe ke diphologolo mo pakeng e e sa tswang go feta?*

Were any of your crops damaged by wildlife during the last growing season? (Tick as many as appropriate)

____-1 yes, by elephant

____-2 yes, by any other wild animal (specify: _____)

____-3 yes, by birds

____-4 yes, by rodents, insects, or any other "usual" agricultural pest

____-5 no

16a) [If 1 or 2 ticked in 16 above] *A lone hwa begela be puso ka kgang eo?* Did you report the matter to any officials?

____-1 yes

____-2 no

i) [If yes to 16a] *A lone hwa ikopela kgotsa hwa atswiwa ke ba DWNP kgotsa ba Land Board?*

Did you apply for/were you compensated by DWNP or the Land Board?

____-1 yes

____-2 no

Lo ne hwa a tswiwa go le kae? How much compensation: _____

Livestock Production

17) *A lona le diruiwa dingwe?*
Do you keep any livestock?

____-1 yes [go to 17a]

____-2 no [skip to 18]

17a) *Ke tsile go botsa ka palo ya diruiwa tse di ruiweng ke ba lelapa ba ba nnang fa, ke tla a di bala ka go latelelana, tswee tswee, mpoletela gore dingwe le dingwe di kae?*

I am going to ask about the numbers of livestock kept by members of the household living here, reading some ranges. Please tell me the appropriate range. (Enumerator: circle appropriate response for each type of livestock listed. Remind them that the information is confidential.)

Cattle

1 none

2 1-5

3 6-10

4 11-15

5 16-20

6 21 or more

Goats

1 none

2 1-10

3 11-25

4 26-50

5 51-100

6 100 +

17b) *A go na le dingwe tsa diruwa tsa lona tse di kileng tsa lthaselwa ke diphologolo tsa naga mo ngwageng o o fetileng?*

Have any of your livestock been attacked by wild animals in the past year? (Tick as many as appropriate.)

- ___-1 yes, by lion
- ___-2 yes, by leopard
- ___-3 yes, by hyaena
- ___-4 yes, by any other wild animal (specify: _____)
- ___-5 no

i) [If yes to 17b] *A lo ne lwa begela ba puso ka kgang e o?*
Did you report the matter to any officials?

- ___-1 yes
- ___-2 no

ii) [If yes to i above] *A lo ne lwa atswiwa ke DNWP?*
Were you compensated by DNWP? _____

- ___-1 yes
- ___-2 no

Mofuta wa katso (jaaka, letlalo, phogolo)
Nature of Compensation (e.g., skin, trophy): _____

comments: _____

17c) *Mo pakeng e e fetileng, go simolola ka kgwedi ya firikgong, lo dirisitse madi jang mo go tsa lono?*

What were your investments in livestock from last Christmas (since 1 Jan.):

[include mafisa & in-kind investments]

Medicines Y N Feed Y N Stud Service Y N Purchase Goats Y N

Purchase Cattle Y N Other (specify) _____

Hunting

18) *Mo ngwageng o o fetileng wena kgotsa mongwe mo lapeng, le tsumile ga kae (lo oja nama, lo dirisa matlalo jalo jalo, e seng lo rekisa)?*

How many times in the past year did you or other members of your household successfully hunt for your household's direct benefit (consumption of meat, use of skins, etc. not for sale of items)?

- ___-1 None [skip to 20]
- ___-2 1-10
- ___-3 11-20
- ___-4 21-30
- ___-5 more than 30
- ___-# other _____

18a) *Lo dirisa dibolai dife go tsoma?*

What weapons do you use for hunting? (Tick as many as appropriate)

- ___-1 gun
- ___-2 snare
- ___-3 spear
- ___-# other _____

19) *Lo bolaila diphologolo tsa mofuta ofe go simolola ka kgwedi ya firikgong?*

What species have you or your family members killed since Christmas (from 1 Jan.)?

[ENUMERATOR: Underline the fact that you are not going to ask how many licenses they have.] [Enumerator: list all species. See codebook for animal codes.]

Type	Code	Number
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Attitudinal Measures

Mo go tse di latelang o'ita balelwa diele mme go tla tlhoka fala gore ore wa dumalang, kgotsa, ga or dumalane.
 For the next set of questions you will be presented with statements and asked your if you agree or disagree with the statement. SA means strongly agree, A means agree, D means disagree, and SD means strongly disagree. NA stands for Not Applicable or Not Relevant. [Enumerator: circle response]

- 20) The Department of Wildlife and National Parks is more interested in protecting wildlife for foreigners than in protecting our livelihoods SA A D SD NA
- 21) It would be better for the Department of Wildlife and National Parks to place more game scouts in our area than it would be to train community members to become game guards SA A D SD NA
- 22) *Batlhokomedi ba diphologolo ba ba direlang mo lefelong le ba boikobo mo bathong ba motsana o*
 Wildlife Scouts working in this area generally show respect for people of this community SA A D SD NA
- 23) *Mo dijwalong tse di sentsweng ke dihologolo tsa naga, DWNP ga e alswe mo go kgotsafalsang?*
 For crops damaged by wildlife, DWNP does not compensate enough SA A D SD NA
- 24) When crop damage is appraised, we never get payment because we are told our crops have no value. SA A D SD NA
- 25) *Batho ba motsana o ba tshwanetse go newa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ka gore re itse go laola dilo gore go se ka ga tsongwa mo go feteletseng*
 The community should be given control over the hunting quota, as we know how to control things so that there is no over-hunting SA A D SD NA
- 26) *Batho ba motsana o ba tshwanetse go fiwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ka gore ke rona re tshwanetseng go boelwa*
 The community should be given control over the hunting quota, as we are the ones who should directly benefit SA A D SD NA
- 27) *Fa motsana o o neelwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, ba ba seng thata mo motseng ga ba na go boelwa*
 If the community takes control of hunting quotas, those who are not powerful in the community will not benefit. SA A D SD NA
- 28) *Fa motsana o o ka fiwa tella ya go laola selekanyo sadiphologolo tse di tshwanetseng go tsongwa, go tla a nna le dikgotlnang mo motseng*
 If the community takes control of hunting quotas, there will be many conflicts in our community. SA A D SD NA

Attitudes Towards New Ideas

- 29) Would you approve of DWNP designing a programme with your community intended to establish a community game scout system?

_____ - 1 yes (go to 29a)
 _____ - 2 no (go to 29b)

- 29a) [If yes to 29] What would be the principal benefits of such a system? [Tick as many as appropriate]

_____ - 1 employment
 _____ - 2 money into community
 _____ - 3 scouts with a better understanding of our needs
 _____ - 4 less wildlife damage
 _____ - 5 just means more scouts
 _____ - # other _____

29b) (If no to 29) Why not? (Tick as many as appropriate)

- 1 prefer government scouts
- 2 there would be corruption
- 3 would prefer to design the system ourselves
- 4 there is no need - scouts already doing the job
- # other _____

30) What role, if any, would you see for community action groups in helping your community to better benefit from wildlife utilisation? (Tick as many as appropriate)

- 1 none (Tick by itself)
- 2 distribute hunting licenses
- 3 resolve conflicts
- 4 determine new interventions
- # other _____

31) What would be the appropriate channels to approach your community? (Tick only one)

- 1 councillor and then kgosi/kgolla
- 2 kgosi/kgolla alone
- 3 extension officer alone
- 4 kgosi and then extension officer
- 5 councillor and then extension officer
- # other _____

Annex D: Proposed Budget and Scheduled Plan of Action for the 1993 Study

The following budget gives line-item information for a repeat study in 1993, based on substantial inputs from the DWNP field supervisor who worked on the 1992 study, and from the Project Sociologist. It is further assumed that the Project Sociologist will be able to analyse the data and prepare the full report.

However, if these assumptions are not valid, an alternative (non-binding) draft budget has been included which uses the private sector to perform these functions. Assumptions regarding support provided by NRMP are based on the 1992 study.

SADC rates are not used, rather the rates are based on 1993 local consulting rates in Botswana. Should SADC rates apply, it is recommended that SADC rates be substituted in the budget calculations.

Regarding field implementation, it is recommended that a total of 7 months be allocated for carrying out the study. Preparation activities would cover 6 weeks in August and September, implementation 3 weeks in September and October, draft analysis and write-up 8 weeks in October, November and December, review 4 weeks in December and January (1994), and finalisation 3 weeks in February, 1994. The schedule would have to be adjusted in accordance with the other time demands facing DWNP/NRMP. Further, and most importantly, measuring project impact would have to take place after a period of time set by the project for expected impact. This might imply a 6-month to one year delay in study implementation, with consequent inflationary implications for the budget.

The above schedule would require that a decision regarding the level of external support be made in June, and contract negotiations/tendering be undertaken in July.

Annex E: Training Needs

The ability to institutionalise a social and interpretive capability within the NRMP team and DWNP depends principally on political will within the Department and the Ministry for establishing such a post, on the availability of necessary funds, and on having a properly-trained sociologist on the NRMP team. Within these three conditions applying, it is not possible to build such capacity within the Department. We therefore make the following assumptions:

- The political will to create such a capability exists in the Department and in the Ministry.
- DWNP will appoint a counterpart to the Project Sociologist with the necessary academic qualifications and coursework.
- The Project Sociologist position will be filled with a Ph.D. with ethnographic and quantitative research experience.

In order for NRMP to assist in the institutionalisation of a social and interpretive capacity within DWNP, the individual counterpart to the Project Sociologist should have *a minimum of* a Masters Degree in Sociology, at least basic and intermediate statistics, at least one course in quantitative methods, at least one course in research methods, and a minimum of two courses in anthropology focussing on ethnographic approaches to research. This counterpart should work with the Project Sociologist for at least two years, carrying out applied social research in existing and new project areas. Skills must be acquired over time in how to undertake baseline measures, how to monitor project impact, and how to evaluate project outcomes. Specific skills (e.g., questionnaire development, assessing the reliability and validity of field research, how to manage field personnel, how to systematically check-in field data, how to construct data sets, how to analyse data, how to prepare user-friendly reports, etc.) would be assimilated through working closely with a qualified Project Sociologist.

Institutionally, this departmental sociologist cannot be isolated from the mainstream of the department. They should have access at Director level through the appropriate channels, and the departmental sociologist should be involved in all relevant short-term and long-term planning activities. The creation of a sociology unit should be avoided, as it could lead to the compartmentalisation and isolation of the sociologist. Instead, the sociologist should be in a position to work closely with planners and extension officers.

For DWNP to carry out its own social research, this sociologist would also need the assistance of someone with at least a Bachelors Degree in Environmental Science with a minor in sociology. This person would be responsible for implementing most of the field-related activities of the social research, under the strategic and on-hands guidance of the departmental sociologist.

It is also assumed that discretionary funds would be available to hire temporary field personnel on an as-needed basis. The actual costs could be included as part of the departmental planning activities.

Annex F: Suggested Need for Census Data

While it was not possible to obtain census information in time for inclusion in the Chobe report, it is recommended that the following data, disaggregated by village and crossed with gender of household head (where applicable), be requested by the NRMP:

- Educational status , age, fertility rates, death rates, number of female-headed household (defacto and de jure), marital status and disabilities.
- Occupation, small-scale enterprises.
- Types of housing units, water supply, sanitation.
- Method of land acquisition, agricultural holdings, types of crops planted, livestock and smallstock ownership.
- Energy.
- Migration (within Chobe and elsewhere in Botswana).
- Nutritional status.

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