



Republic of Botswana
Ministry of Environment, Natural Resources
Conservation and Tourism

BOTSWANA ELEPHANT MANAGEMENT PLAN AND ACTION PLAN

2021–2026



MARCH 2021





TABLE OF CONTENTS

1. INTRODUCTION & BACKGROUND	9
1.1. Brief History of Elephants in Botswana	9
1.2. Elephant Range in Botswana	9
1.3. Cross-border Range	12
1.4. Elephant Population Size and Trends	13
2. ISSUES	14
2.1 Poaching	14
2.2. Human-elephant Conflict	15
2.3. Elephant-induced Environmental Changes	18
2.4. Climate Change	19
2.5. Ethical Considerations	19
3. OPPORTUNITIES – THE UTILISATION OF AND BENEFITS FROM ELEPHANTS	20
3.1. Tourism	20
3.2. Controlled Hunting	21
3.3 Community-Based Natural Resources Management	23
4. THE POLICY AND LEGISLATIVE ENVIRONMENT	24
5. PRINCIPLES ADOPTED FOR ELEPHANT MANAGEMENT	25
6. TARGETS FOR ELEPHANT CONSERVATION IN BOTSWANA	26
7. MANAGEMENT PLAN IMPLEMENTATION – INSTITUTIONS & ROLES	27
7.1. Wildlife Management	27
7.2. Law Enforcement	28
7.3. Community-based Organisations	29
7.4. The Conservation Trust Fund	29
8. DEVELOPMENT OF THE ELEPHANT MANAGEMENT PLAN	31
9. LOGIC AND STRUCTURE OF THE ACTION PLAN	32
10. VISION, TARGETS AND KEY COMPONENTS	34
11. ACTION PLANS	35
12. MANAGEMENT ACTIVITIES IN CHAS	46
13. REFERENCES	52
APPENDIX I – MANAGEMENT	55
a. Adaptive Management	55
b. Management Oriented Monitoring Systems (MOMS)	56
c. Aerial Surveys	57
d. Quota Setting	58
e. Human-Elephant Conflict Mitigation & Reduction	59
f. Law Enforcement	60
g. Monitoring of Poaching	61
h. Ethics	64
APPENDIX II – BACKGROUND INFORMATION	65
a. Botswana Elephant Management Plan 2021 – 2026	65
b. Previous Elephant Management Plans	65
c. Domestic Legislation and Policies Related to Elephant Conservation	66
d. International Conventions, Agreements and Policies	67
e. International Cooperation	69
f. Transboundary Conservation Areas	69

g. The Wildlife Based Economy	72
APPENDIX III – MONTHLY HUNTING RETURN FORM	74
APPENDIX IV – TERMS OF REFERENCE FOR THE NATIONAL ELEPHANT CONSERVATION AND MANAGEMENT COMMITTEE AND THE NATIONAL ELEPHANT COORDINATOR	75

INDEX OF FIGURES

Figure 1. Expansion of known range of Elephant in Botswana (modified from Thouless et al. 2016 from DWNP data.)	11
Figure 2. The KAZA TFCA	12
Figure 3. Estimated numbers of elephants in northern Botswana from 1981 to 2018 (dry seasons) (vertical bars represent 95% confidence limits)	13
Figure 4. Trend in carcass ratios from aerial surveys with numbers of poached elephants recorded by DWNP	15
Figure 5. Comparison of wildlife and livestock distributions (DWNP 2012 data)	16
Figure 6. Numbers of human-wildlife conflict incidents (DWNP 2020)	16
Figure 7. Contribution of elephants to Human-wildlife conflicts (HWC) in Botswana Districts 2019 (DWNP 2020)	17
Figure 8. Elephants killed as problem animals in Botswana by DWNP	17
Figure 9. Trend of quotas, estimated population, offtakes and trophy weights from 1996 to 2013 (Source DWNP and Mochaba)	22
Figure 10 CHAs and land-uses for elephant management	47
Figure 11 MIKE data for the only Botswana MIKE site (Chobe NP) (Source DWNP and CITES MIKE portal https://cites.org/eng/prog/mike/index.php/portal)	62



Foreword

*M*uch has been said about Botswana's elephants in recent years particularly as management challenges associated with our large population have become evident. These challenges have manifested themselves through rising human-elephant conflict, an increase in poaching and concern about the impact of elephants on biodiversity.

Botswana has the largest elephant population on the African continent numbering around 140,000 at the last count done in 2018. Elephants are found predominantly in northern Botswana with a small but significant population occurring in eastern Botswana in the Bobirwa area. More recently elephants have moved further south and established themselves within the Central Kalahari Game Reserve where their impact on vegetation is becoming increasingly conspicuous around the permanent waterpoints found within that protected area. Poaching of elephant on the African continent has increased dramatically over the last ten years, although it has slowed down recently; the poaching situation remains very high in West and Central Africa and above the level which the population can sustain. The number of poached elephants in Botswana has increased over the last five years although the numbers poached remain well below numbers which can cause the population to go into decline.

The process to develop the Elephant Management Plan for Botswana began in June 2018 with four national consultation workshops taking place in Nata, Selebi Phikwe, Kasane and Maun. A technical workshop was subsequently held in August 2018 and a validation workshop in December 2019. The finalisation of this Plan has coincided with the COVID 19 pandemic and, therefore, this Plan takes full cognizance of the emerging challenges facing wildlife managers going forward,

within the context of the development challenges emanating from the COVID 19 impacts. Moreover during the development of this Plan, controlled hunting was re-instated in Botswana following intensive, nationwide consultations. It was clear from these consultations that communities who live side-by-side with elephants and whose livelihoods are most affected by human-elephant conflict wished to have a greater say in the management of elephants.

This Management Plan provides a platform for participation by all Interested and Affected Parties, within Botswana and internationally, through proposed actions/ activities, methods and targets. In addition, the Plan also provides for monitoring and evaluation of the implemented actions. Management of elephants involves a broad spectrum of stakeholders ranging from communities, private sector, NGOs and Government departments and agencies, and Local and International Cooperation Partners. It is vital that all these key partners understand their roles to ensure that a coordinated approach is followed to achieve successful implementation of the Plan.

A group of elephants is gathered at a watering hole in a savanna landscape. The elephants are of various sizes, including adults and young calves. They are standing in the water, some with their heads lowered to drink. The background shows a vast, open landscape with scattered trees and a clear sky. The lighting suggests it might be early morning or late afternoon, with a warm, golden glow.

Hon Philda N Kereng

Hon Philda Kereng

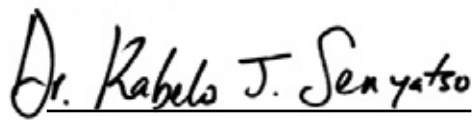
Minister

Ministry of Environment, Natural Resources Conservation and Tourism



APPROVAL

This plan has been reviewed by the Director of the Department of Wildlife and National Parks under the Ministry of Environment, Natural Resources Conservation and Tourism, Government of Botswana, and approved for implementation.



Dr Kabelo J. Senyatso
Director
Department of Wildlife and National Parks

Date: 31-March-2021



1 INTRODUCTION & BACKGROUND

1.1 Brief History of Elephants in Botswana

Present-day elephant population numbers in Botswana far surpass historical numbers. By the end of the 19th century, it is estimated that ‘only a few hundred remained’, mainly in the north (Cumming and Jones 2005) as a result of unregulated ivory trade and expansion of human settlements combined with drying up of water sources (Campbell 1990). Around 1900 it was necessary for foreigners in present-day Botswana to obtain a licence to hunt elephant while Botswana required permission from their chief. The twentieth century saw a re-establishment, and a significant re-expansion of elephant populations in areas formerly cleared of the species.

There is little further information on elephant populations in Botswana until some specific elephant-related research was undertaken in the 1960s and 1970s, concentrating on Chobe National Park and surrounding areas. Child (1968) and Sommerlatte (1976) described elephant concentrations appearing along the eastern section of the Chobe River and southwards in the Chobe District by the mid-1960s. These observations suggest a re-occupation of parts of the former elephant range in northern Botswana which had been abandoned by the turn of the century.

Today the number of elephants in southern Africa is ~300,000 with the highest numbers occurring in Botswana (120,000–160,000) and Zimbabwe (76,000–93,000).

1.2 Elephant Range in Botswana

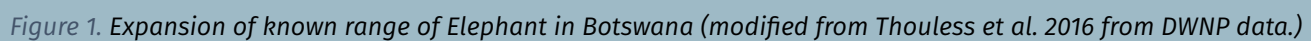
Most of Botswana’s elephant population inhabits the north of the country, both inside and outside protected areas, but there is a small population of less than 1,000 animals in the Northern Tuli Game Reserve in the south-east shared with Zimbabwe and South Africa. Another isolated population, of about 300 individuals is found around Mmadinare (CT27).

Thouless et al. (2016) estimated the elephant range in Botswana to be about 228,000 km² of which about 128,000 km² have been assessed through aerial surveys and the remaining 100,000 km² of potential range to be assessed.

The wildlife estate in Botswana makes up about 40% of the country's surface area comprising of National Parks and Game Reserves (17%) and Wildlife Management Areas (23%). The elephant range expands in response to rainfall, and wet season distribution is considerably larger than in the dry season when animals are concentrated near permanent water sources. Only about 23% of the elephant population is found within National Parks, Game Reserves, and Forest Areas in the wet season increasing to around 32% in the dry season. Elephant densities can reach over 10 animals/km² (e.g. along the Chobe River). Due to the considerable increase in numbers, elephant distribution also changed significantly within Botswana in the last two decades in particular. Botswana is one of the few countries in Africa with confirmed elephant range expansion for elephants. Elephants have expanded their range from the Okavango Delta, Linyanti and Chobe in the north to the west towards Namibia (Ghanzi District) and south of the country (Figure 1). In 2009 the first signs of elephant presence were observed in the Central Kalahari Game Reserve (CKGR) and in 2015, elephants were observed for the first time in large numbers in the Okwa Wildlife Management Area (GH10 WMA), while since 2018 their distribution extended even further south into farmlands in Kweneng, Southern and Kgalagadi Districts where local people had never been exposed to elephants before. Although the increase in population numbers and in geographical coverage appears to be positive as compared to the status of elephants in other countries in the sub-region and in Africa in general, such growth and expansion also presents major challenges to the management of elephants. Further research is needed to comprehensively define the elephant range in the country.



601





1.3 Cross-border Range

Elephants in the north of Botswana are part of a larger population stretching into neighboring countries. Elephants are able to cross borders and have been shown to move considerable distances to and from the Zambezi Region of Namibia and further into Angola and Zambia. The Kavango-Zambezi Transfrontier Conservation Area (KAZA TFCA) (Figure 2 and Appendix II) which includes the northern range of Botswana's elephants was created with the aim

of joining fragmented wildlife habitats, with transboundary wildlife corridors linking protected areas in the 5 member countries (Botswana, Namibia, Zimbabwe, Zambia and Angola). The KAZA supports over 220,000 elephants—the largest contiguous population in Africa. It is particularly important for elephants in the region because it protects core elephant habitat and movement corridors between 5 countries, allowing elephants to respond to seasonal habitat changes and environmental fluctuations.

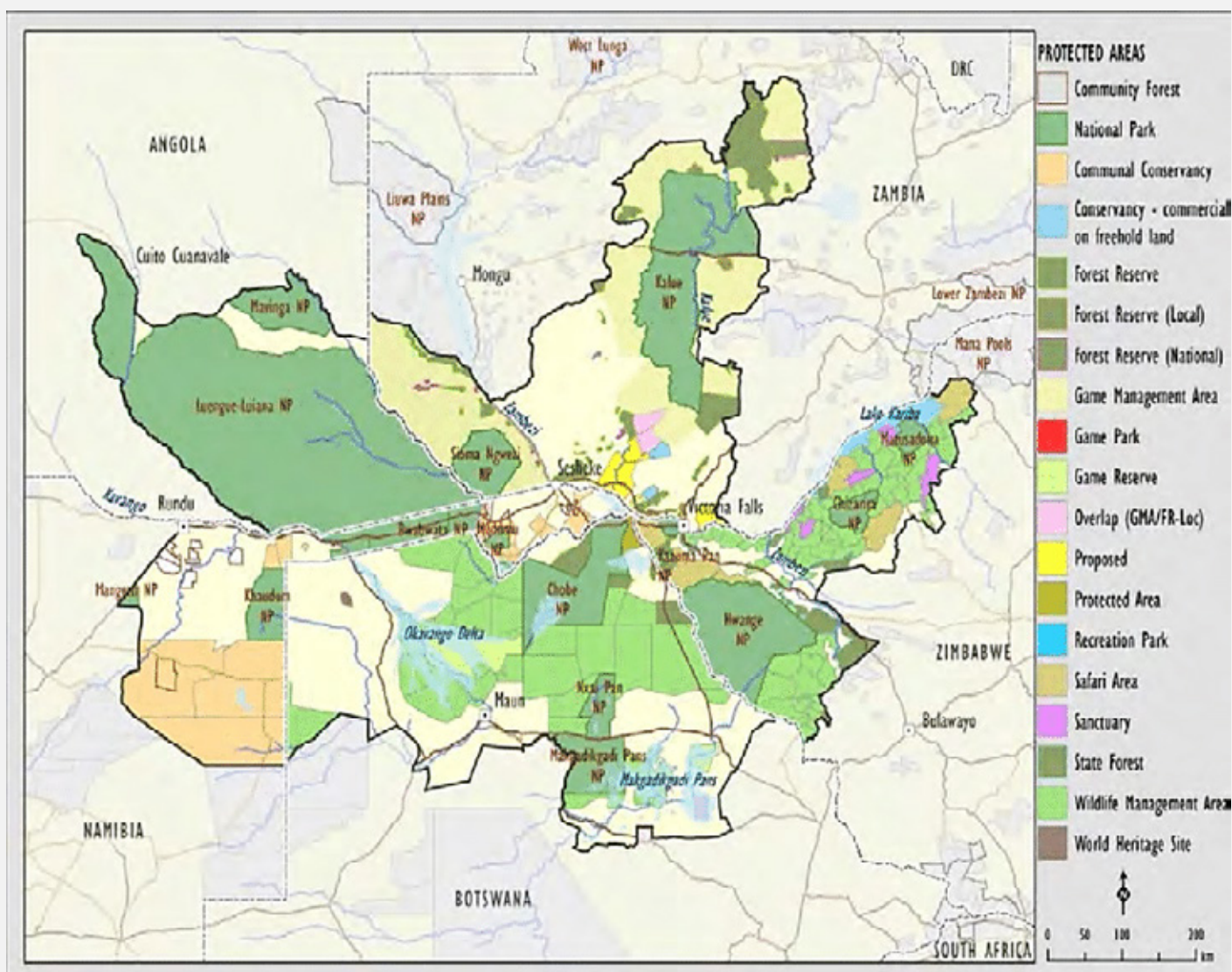
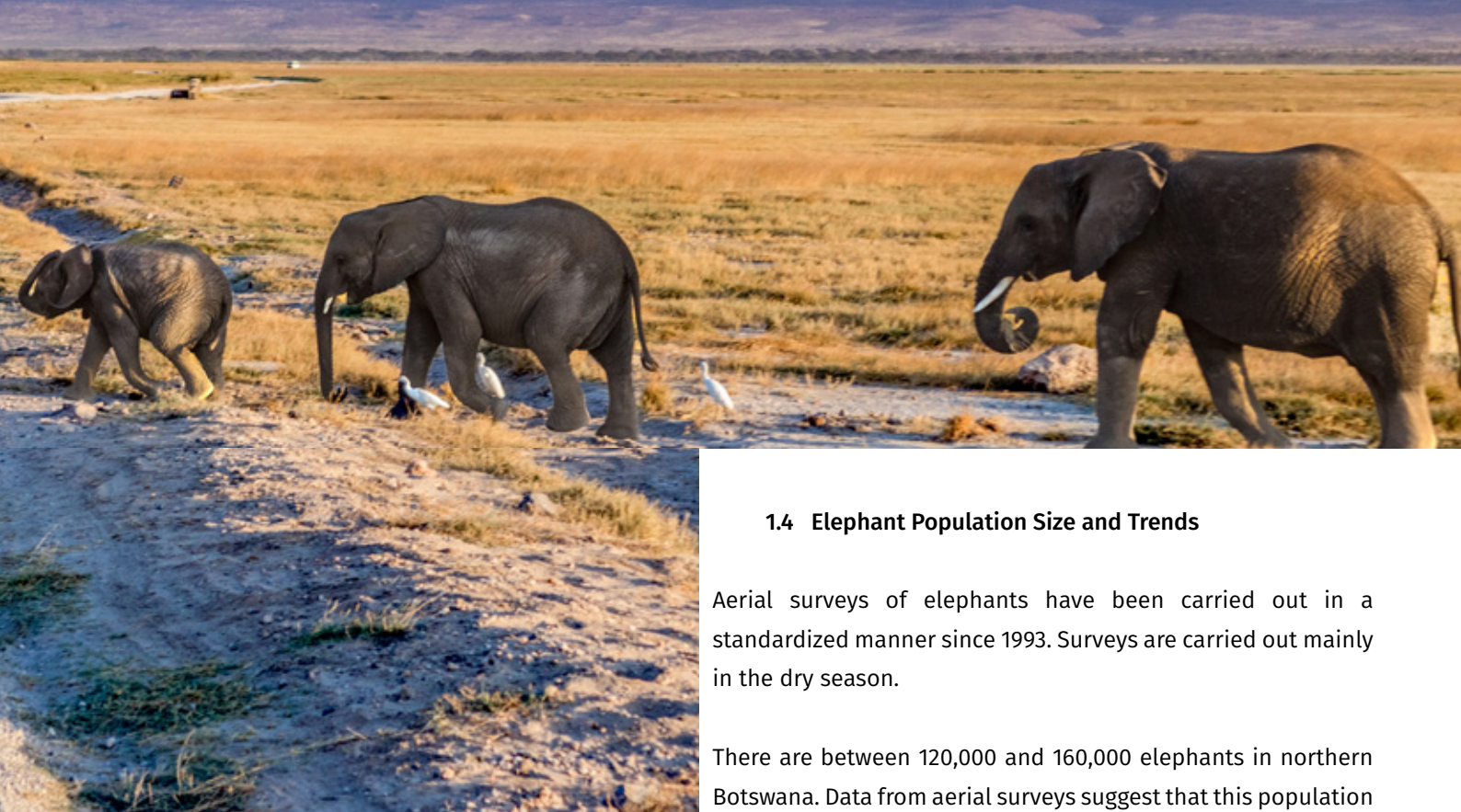


Figure 2. The KAZA TFCA



1.4 Elephant Population Size and Trends

Aerial surveys of elephants have been carried out in a standardized manner since 1993. Surveys are carried out mainly in the dry season.

There are between 120,000 and 160,000 elephants in northern Botswana. Data from aerial surveys suggest that this population increased from 1981 to 2006 at a rate of 6% per annum (Figure 3). Because of differences in survey methodology and the fact that only parts of the elephant range was sampled, surveys in 2010, 2014 and 2018 are not strictly comparable with previous surveys; however, these survey estimates suggests populations are levelling off or decreasing, although in some strata (e.g. Okavango Panhandle; Songhurst, 2010, 2016 & 2019) there are suggestions of localized increases in population numbers.

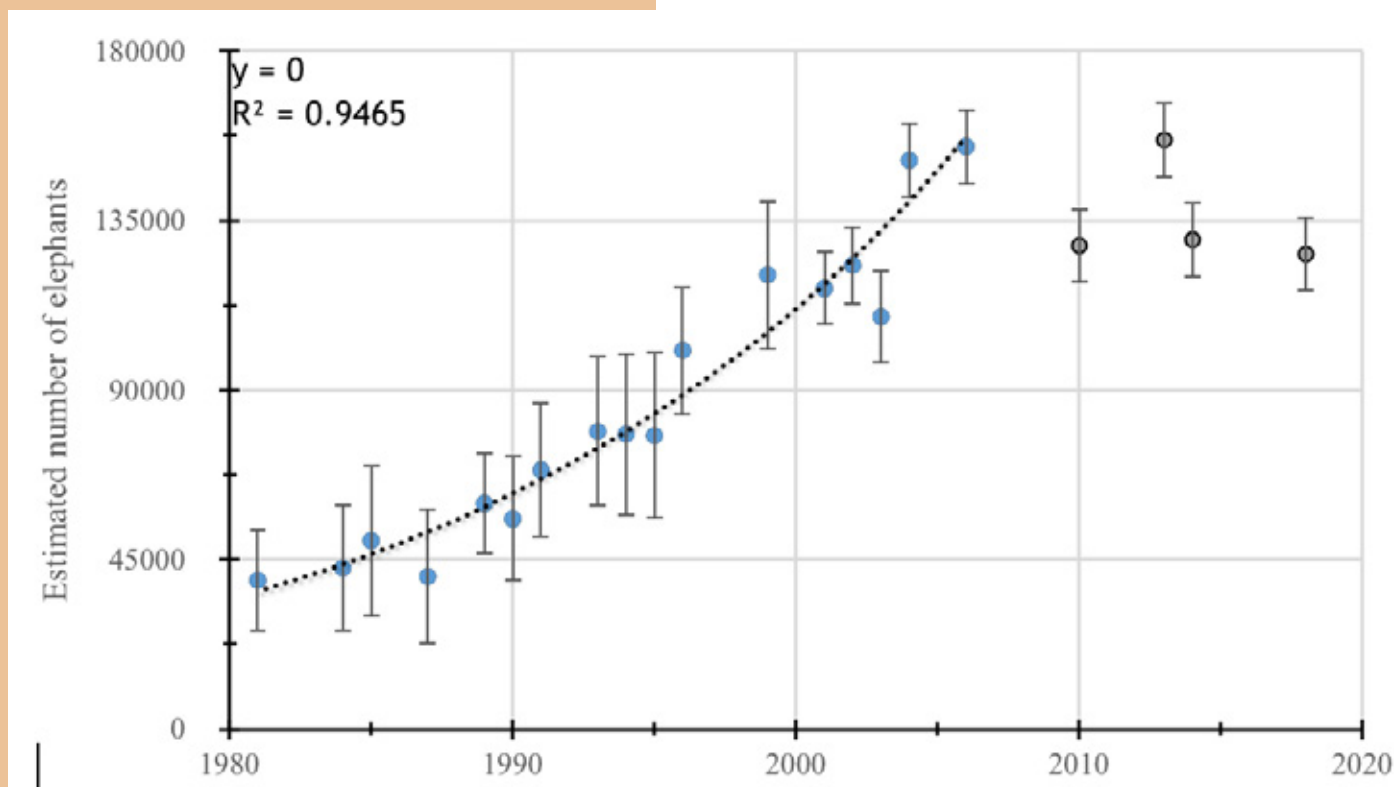


Figure 3. Estimated numbers of elephants in northern Botswana from 1981 to 2018 (dry seasons) (vertical bars represent 95% confidence limits)



In south-central Botswana (covering parts of Central District), 6,500 elephants were estimated through an aerial survey carried out in 2018 (DWNP 2018). A smaller population is found in the south-east of the country, with about 900 elephants in the Northern Tuli Game Reserve, shared with South Africa and Zimbabwe (Sellier and Page 2014). A group that has not been recorded on aerial surveys but is thought to be around 300 animals inhabits lands around Mmadinare (CT27). These animals, whose closest population is the one of the Tuli Game Reserve, have been a source of considerable conflict (Modise et al. 2018).

Botswana's numbers remain equivocal as the cause for the apparent decline from ~155,000 in 2006 to 126,000 in 2018 may be due to one or more factors relating to range expansion (and thus lack of counting from newly occupied areas), poaching, uncounted elephants (e.g. due to temporary movement out of survey areas) and/or mis-counted elephants.

In order to remedy the above, KAZA partner countries are planning to undertake, in 2021/22, transboundary coordinated and synchronized KAZA-wide aerial surveys of elephant (and other wildlife populations) according to standardized methodologies, to allow comparability across the KAZA landscape with the underlying principles that (i) management of elephants must be guided by comparable survey methods (and not by one-off surveys) and (ii) that additional information is required on elephants' movement patterns and demographics, together with (iii) an assessment of the habitat status across the KAZA TFCA.

2 ISSUES

2.1 Poaching

The Department of Wildlife and National Parks (DWNP) aerial survey of 2013 provided a population estimate that was not significantly different from the 2006 estimate. During this period, poaching for ivory had been impacting elephant populations throughout Africa—peaking in 2011—and Botswana has not been exempted; although MIKE data in the only MIKE site of Botswana shows a negligible impact of poaching (see Appendix Ig and Figure 4).

Botswana's National Anti-Poaching Strategy (2013) seeks to “reduce illegal offtake of wildlife by enhancing interagency cooperation through capacitation, the use of best available technologies, information sharing and the involvement of communities in law enforcement efforts” (Appendix If). The strategy identifies issues and sets out practical means to reduce illegal activity.

Levels of poaching have been monitored both from estimating carcass ratios from aerial surveys and calculating the Proportion of Illegally Killed Elephant (PIKE) in Chobe National Park (Appendix Ig).

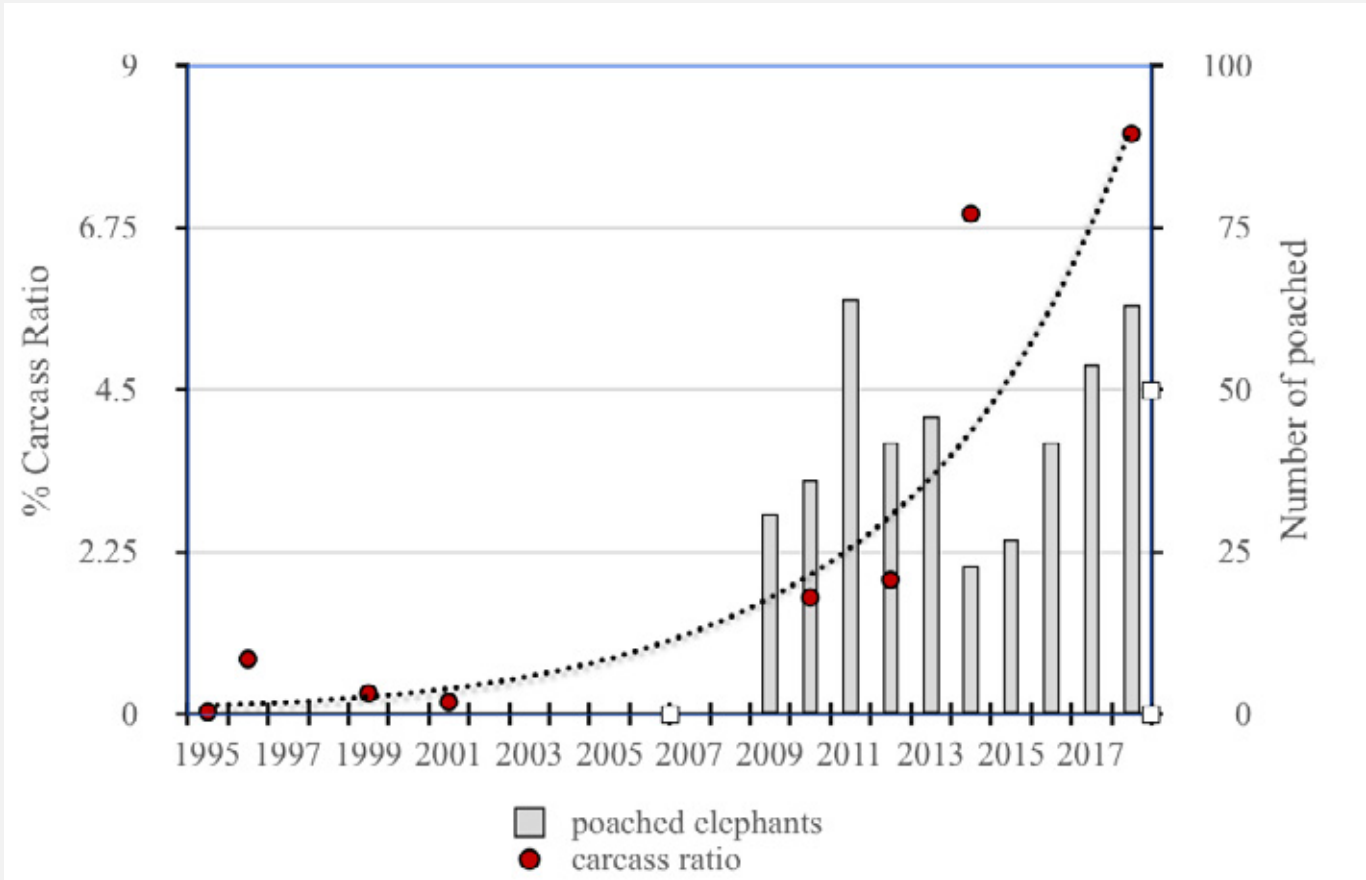


Figure 4. Trend in carcass ratios from aerial surveys with numbers of poached elephants recorded by DWNP

Carcass ratios are a good measure of mortality in relation to the size of the population and provide a rapid indicator of excessive and unsustainable mortality (Figure 4).

2.2 Human-elephant Conflict

An additional impact that has resulted from the increasing populations of both elephants and humans is a rise in the number of incidents of human-elephant conflict. Communities living within the elephant range are increasingly exposed to loss of crops, damage to water-points and fences as well as human fatalities (Adams et al. 2017). In Botswana there is relatively little overlap between wildlife and livestock (Figure 5) but where there is overlap, some wildlife species such as elephants can make their presence felt strongly. Often only a small proportion of elephants are involved but property losses can be costly and can severely impact rural livelihoods.



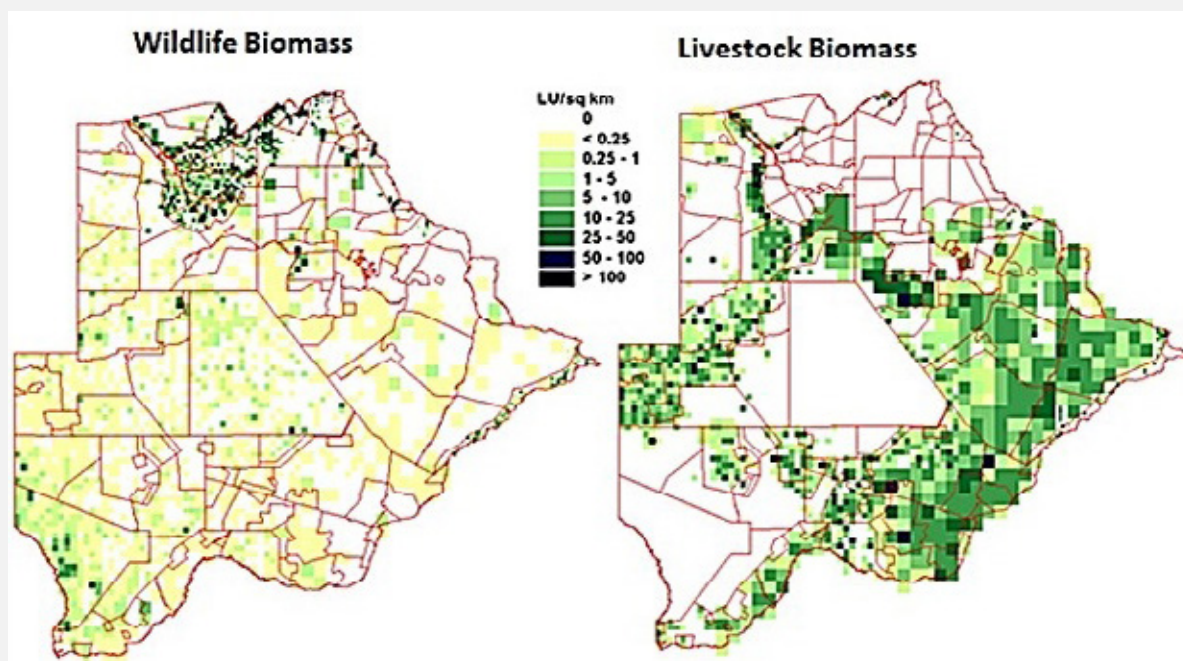


Figure 5. Comparison of wildlife and livestock distributions (DWNP 2012 data)

Cases of reported conflicts between humans and wildlife increased significantly after 2014 (Figure 6). This may be a reflection of a reduced tolerance for wildlife following the hunting moratorium, or a response to the increased rate of compensation for damages for farmer's infrastructure due to wildlife.

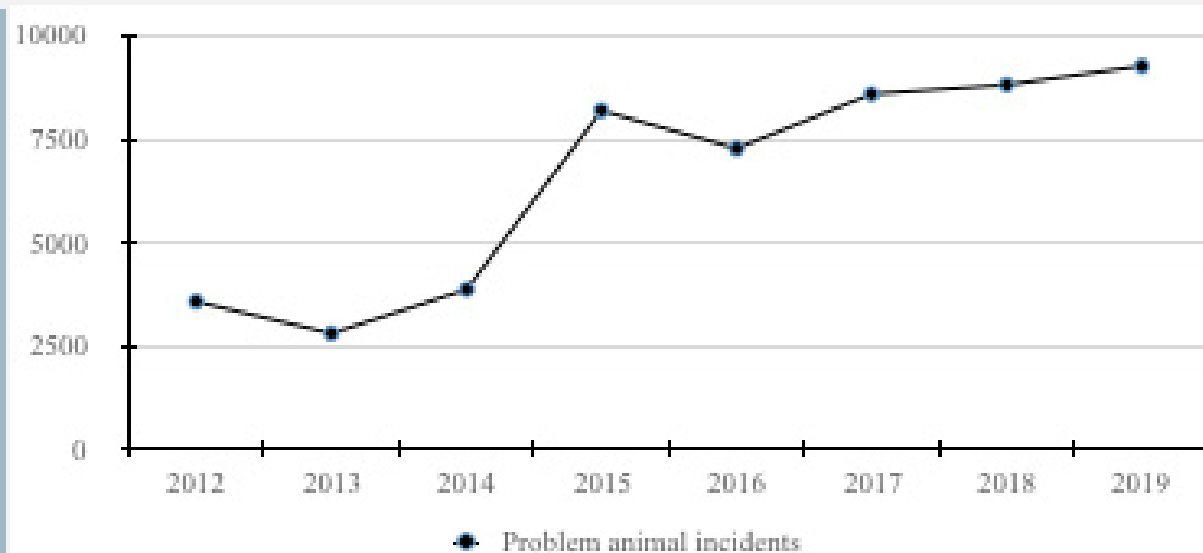


Figure 6. Numbers of human-wildlife conflict incidents (DWNP 2020)

Almost half of human-wildlife conflicts are attributable to elephants. For example, in 2019, 42.7% of conflicts were due to elephants (Figure 7). With expansion in the range of both elephants and people, human-elephant conflicts are increasing.

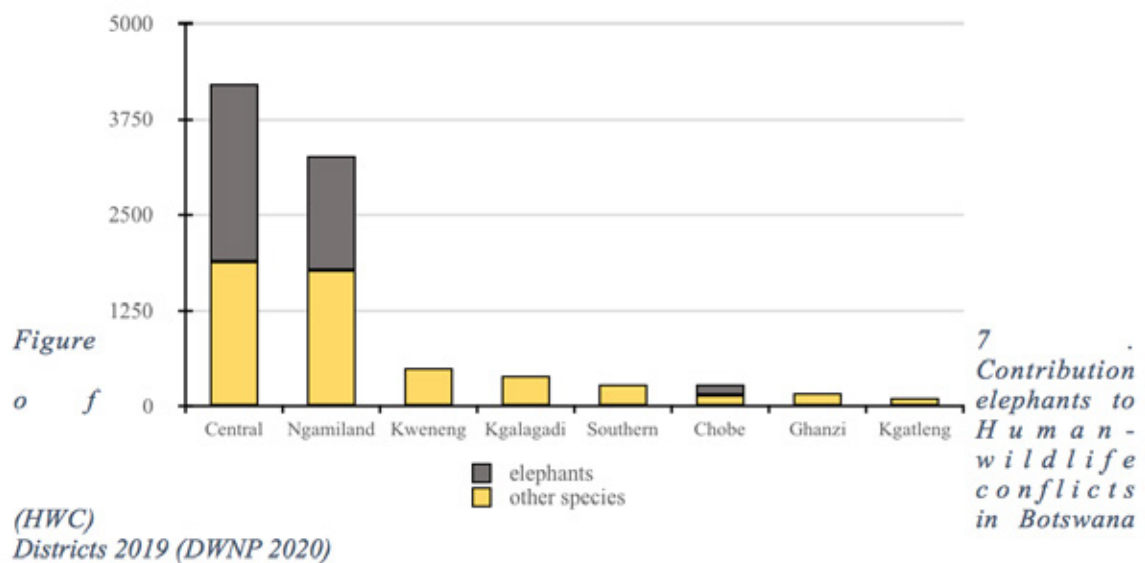


Figure 7. Contribution of elephants to Human-wildlife conflicts (HWC) in Botswana Districts 2019 (DWNP 2020)

Measures taken by government to reduce conflict include construction of electric fences and the use of deterrents such as chilli pepper and bee-line fences (Hoare, 2001; Osborne 2002), while compensation for elephant damage was increased to 100% with effect from November 2013. Tolerance towards elephant damage varies depending on mitigating circumstances such as benefits from wildlife accruing to communities, and whether communities are used to living with elephants or not. The lifting of the hunting moratorium is expected to increase community tolerance for elephant through employment, cash and other in-kind benefits.

Only where no other means are available and when severe damages are done by elephants, 'Problem Animal Control' is carried out by DWNP officials. Figure 8 shows the number of 'problem elephants' controlled by DWNP in Botswana.

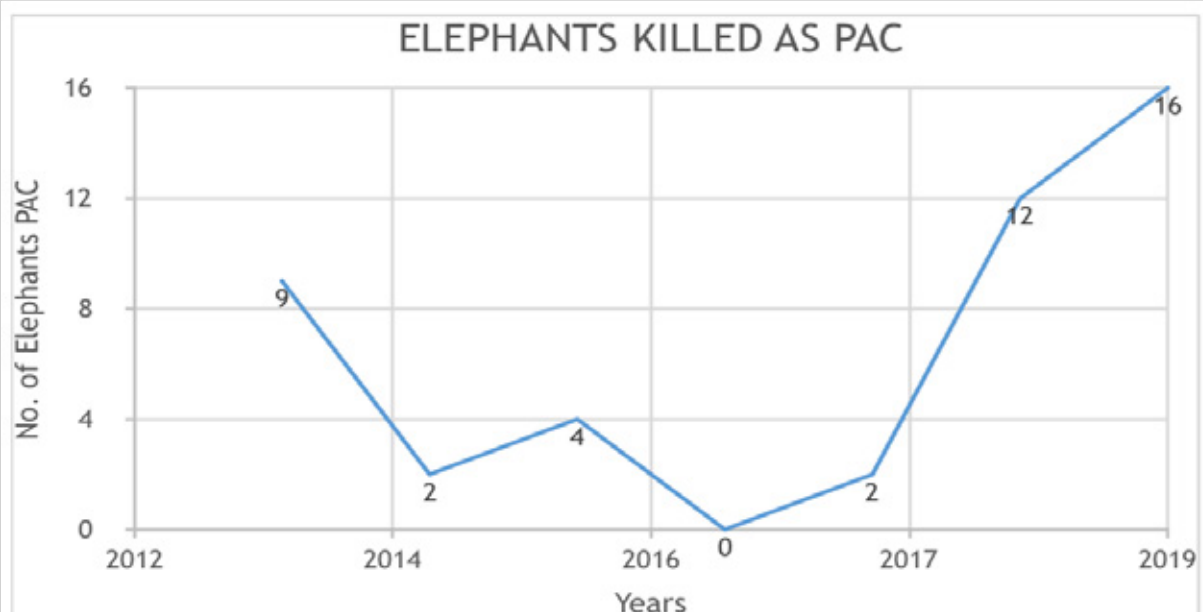


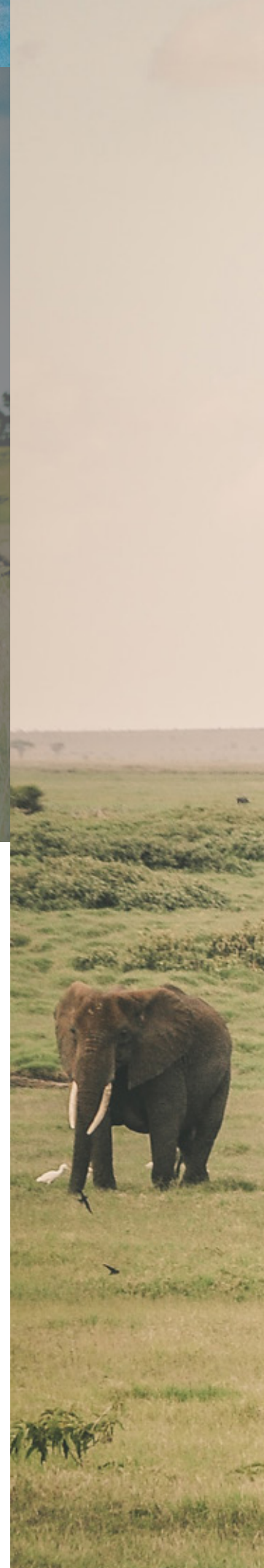
Figure 8. Elephants killed as problem animals in Botswana by DWNP



2.3 Elephant -Induced Environment changes

Elephants play a pivotal role in the development and maintenance of African ecosystems. It has been shown in Botswana and elsewhere that seeds of trees such as Acacias dispersed in elephant dung germinate more quickly than uneaten seeds. However, despite such beneficial ecological effects, elephants have become well known throughout Africa for having impacts on their habitats (Lugoloobi 1993; Mughogho 2001; Mosugelo et al. 2002) which are considered undesirable. When the density of elephants increases through natural growth or compression and adequate dispersal is impossible, canopy trees are lost at a rate that exceeds the natural rate of replacement. This problem has been recognised in northern Botswana since the late 60s (Child 1968) Significant changes have been documented in vegetation along the Chobe riverfront (e.g. Lugoloobi 1993; Child 2020). There is no doubt that trees have been lost and continue to be lost at a rate faster than they can replace themselves. Secondary effects of this—impacts on other species, loss of biodiversity (Addy 1993; Herremans 1995), effects on essential processes and on the ability of the ecosystems to sustain the elephants—may all be disputed due to lack of evidence.

There are widely varying opinions as to whether these impacts are acceptable and as yet in Botswana, no activities have been implemented to manage this issue.



2.4 Climate Change

Botswana is likely to experience extreme changes in temperature and precipitation under global warming scenarios of 1.5° to C-3°C above pre-industrial levels. It is anticipated that these changes will impact significantly on wildlife conservation. Climate change is causing the frequency, severity, duration and spatial extent of droughts to increase. With increasing drought, it is anticipated that water dependent species such as elephants will seek water in areas where humans are practising agriculture. The competition for limited water resources is responsible for escalating conflicts between humans and elephant. The impacts of elephants on susceptible vegetation will likely be amplified by climate change. Any effort to manage elephants and their impacts

must form part of a comprehensive, proactive and integrated approach in order to build the longer-term resilience of vulnerable communities, ecosystems and the economy.

2.5 Ethical Considerations

Public opinion, especially sections of international public opinion, is quick to object to any killing of wild animals. This is particularly the case where there is any suggestion of unethical or inhumane practices, and the Government of Botswana is keen to maintain high standards in the safari hunting industry and in any programme where lethal removal of elephants takes place. This will involve avoiding wounding, reduced suffering or social disruption to elephants.



THE UTILISATION OF AND BENEFITS FROM ELEPHANTS

The Wildlife Policy of the Government of Botswana (2013) established the “wildlife governance structure” on which to base wildlife conservation and the sustainable use of wildlife resources. It refers to the diversity of the wildlife sector and the variety of products including eco-tourism, hunting, sale of wildlife products and meat. It acknowledges the commercial value of the sector in contributing to national development goals—economic diversification, poverty eradication, employment creation and the improvement of rural livelihoods.

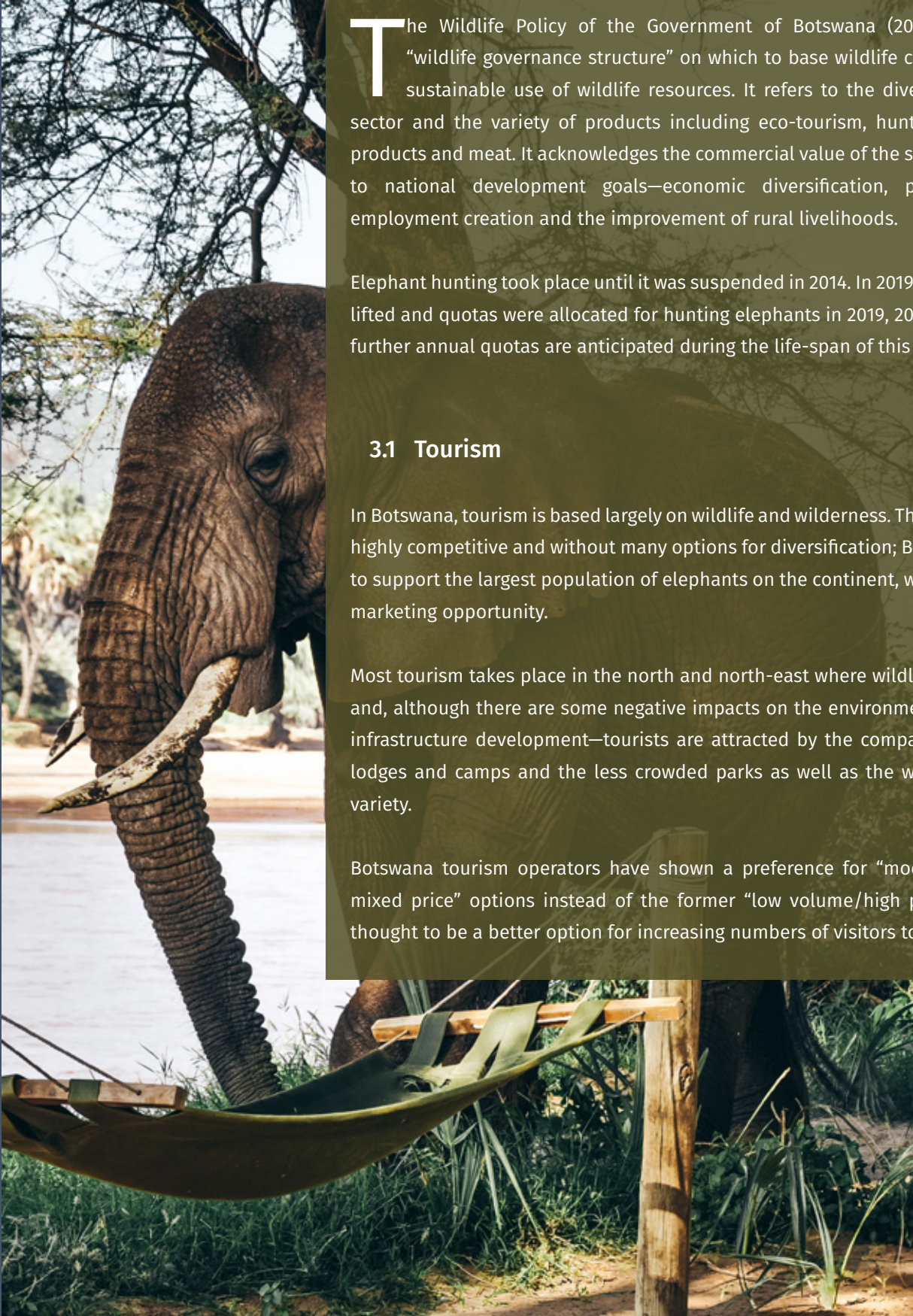
Elephant hunting took place until it was suspended in 2014. In 2019 the moratorium was lifted and quotas were allocated for hunting elephants in 2019, 2020 and 2021, and are further annual quotas are anticipated during the life-span of this Management Plan.

3.1 Tourism

In Botswana, tourism is based largely on wildlife and wilderness. The tourism industry is highly competitive and without many options for diversification; Botswana is fortunate to support the largest population of elephants on the continent, which offers a unique marketing opportunity.

Most tourism takes place in the north and north-east where wildlife is concentrated—and, although there are some negative impacts on the environment particularly from infrastructure development—tourists are attracted by the comparative exclusivity of lodges and camps and the less crowded parks as well as the wildlife numbers and variety.

Botswana tourism operators have shown a preference for “modified high volume/ mixed price” options instead of the former “low volume/high price” policy. This is thought to be a better option for increasing numbers of visitors to the country.





3.2 Controlled Hunting

Hunting in Botswana was suspended in January 2014, based on Statutory Instrument No. 2 of 2014. The hunting moratorium resulted in ill-feeling in a number of communities and settlements, especially from members of the local population who regard hunting as a traditional way of life. Many local people were formerly reliant on controlled hunting for food, income and employment especially on marginal lands where elephant occur but where land that is not suitable and financially viable for photographic tourism and other economic options, such as agriculture is very limited. In 2019 the moratorium was lifted and quotas allocated for hunting elephants in 2020, for both citizens hunters and international clients.

The controlled hunting programme is an important mechanism for safeguarding and generating revenue from marginal lands set aside for conservation where elephant occur, and in land units where human-wildlife conflict is high. Economic modelling conducted in 2008 on Botswana's controlled hunting programme demonstrated the estimated total economic value of Botswana's controlled hunting programme to be ~\$40,000,000 (Martin, 2008).

The safari industry contributes to the national and local economies and to conservation through, among other activities, the hunting of elephants by foreign hunters. This

type of hunting is, at present, the main type of consumptive utilisation of elephants.

Data available before the hunting suspension of 2014 (Craig et al. 2011 and DWNP data) shows unequivocally that the impact of elephant hunting on the population was irrelevant in numerical terms and negligible in biological terms, and quotas have been set at very conservative level to obtain a sustainable number of trophies of constant and economically acceptable average size. Safari hunting has no effect on limiting population growth. The offtakes of elephants in the period 1996–2013 ranged from a minimum of 0.04% to a maximum of 0.23 % of the total huntable population (which is about 75% of the population) and the offtake levels are even less when the total estimated country population is taken into consideration.

This is well below the 'rule-of-thumb' that hunting managers generally use to allocate hunting quotas i.e. 0.5% of the total population. The quotas set and the numbers of animals hunted in Botswana were well below this level. This is unequivocally showing how the quotas have been set at very conservative levels.

A complete database of all tusks taken from trophy elephants from 1996 to 2013 is available and has been not

only the source of a landmark study (Craig et al. 2011) but a powerful monitoring tool for the adaptive hunting management and regulation of the offtakes. Monitoring population size, by contrast, would be ineffective in evaluating the effect of hunting because this barely affects the population number. While it is necessary when setting quotas to start from a population estimate and measures of all offtakes, both legal and illegal, trend of tusk weight provides direct and independent information on the status of the male population.

Figure 9 shows quotas, estimated population, offtakes and trophy weights from 1996, when the previous 1983 moratorium ended, and 2013, the year preceding the hunting suspension of 2014. Although numerical quotas increased over the period, population increase kept pace.

Year	CITES Quota	Estimated population	Total offtake (Citizen quota)	Mean tusk weight (both tusks)
1996	80	100,538	33 (0)	53.0 kgs / 116.86 lbs
1997	87		51 (0)	48.4 kgs / 106.72 lbs
1998	168		99 (0)	47.6 kgs / 104.95 lbs
1999	174	120,604	113 (0)	47.7 kgs / 105.39 lbs
2000	180		155 (0)	47.6 kgs / 104.95 lbs
2001	180	117,000	133 (0)	50.6 kgs / 111.57 lbs
2002	210	123,152	132 (1)	48.3 kgs / 106.5 lbs
2003	210	109,472	139(2)	48.2 kgs / 106.3 lbs
2004	210		147 (8)	48.8 kgs / 107.6 lbs
2005	210	151,000	173 (9)	49.4 kgs / 108.9 lbs
2006	270	154,658	252(21)	48.7 kgs / 107 lbs
2007	300		253 (2)	48.5 kgs / 107 lbs
2008	330		269 (9)	47.2 kgs / 103 lbs
2009	400		271 (2)	46.5 kgs / 103 lbs
2010	400	128,430	308 (28)	44.2 kgs / 97 lbs
2011	400		286 (0)	47.5 kgs / 104.8 lbs
2012	400		298 (21)	46.1 kgs / 101.6 lbs
2013	400	156,401	322 (14)	46.1 kgs / 101.7 lbs

Figure 9. Trend of quotas, estimated population, offtakes and trophy weights from 1996 to 2013 (Source DWNP and Mochaba)

Mean total tusk weight per animal is the key indicator of biological sustainability and economic success. Collection of these data in a useful way must become the routine support of the management of hunting (see Appendix Id).

3.3 Community-Based Natural Resource Management

Elephants constituted a major source of income for local communities who had registered Trusts under the programme of community-based natural resource management (CBNRM) and undertook consumptive utilisation of natural resources. Under CBNRM, communities are granted user rights for the different areas and natural resources and specific Wildlife Management Areas (WMA) wherein they can sub-let to tourism companies (non-consumptive) and when hunting is in place, be allocated quotas for selected wildlife species (consumptive). As is the nature of the hunting industry, elephant hunts are the most profitable.

When hunting was suspended in 2014, many community Trusts in northern Botswana experienced large declines in income (Centre for Applied Research 2016; Mbaiwa 2017a and 2017b; Mogomotsi et al. 2020; Child 2020), especially those in WMAs with marginal photographic tourism potential. The lowest income was in 2015, just after the hunting moratorium was announced. Thereafter, only 10 out of a total of 59 wildlife-based CBOs generated revenues as they transitioned to non-consumptive use. While the hunting moratorium may have caused only a temporarily financial setback to a few community Trusts, other Trusts in areas less suited for photographic tourism continue to struggle financially, while some have completely collapsed.



THE POLICY AND LEGISLATIVE ENVIRONMENT



The management of elephants will be carried out within the context of the Wildlife Policy of 2013 which emphasizes the devolution of wildlife management to landowners and communities to instill greater accountability for the resource. The Wildlife Policy is a resource and development policy and therefore needs to be consistent with policies and principles regarding environmental management, development and poverty eradication, decentralisation of development efforts, as well as community based natural resource management. The Wildlife Policy contains several guiding principles of relevance to elephant management including decentralized and participatory wildlife management, equitable sharing of costs and benefits from wildlife utilization and management, and promotion of community well-being and empowerment, sustainable development based on wildlife resources, and the use of the ecosystem approach to conservation and development.

The management of elephants will also be aligned to

national imperatives and priorities as outlined in Vision 2036 and, the National Development Plan 11. The focus will be on improving inventory, and intensifying compliance efforts by monitoring the status and diversity of species within the predetermined localities. Emphasis will also be placed on public education and awareness.

In addition, the management of elephants should also take into consideration the compliance with multi-lateral agreements, international protocols and conventions related to the wildlife sector. These include commitments as espoused in the Sustainable Development Goals, Convention on International Trade in Endangered Species of wild fauna and flora (CITES), the Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement, United Nations (UN) Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the UN Convention to Combat Desertification and Drought amongst others.



5

PRINCIPLES ADOPTED FOR ELEPHANT MANAGEMENT

Although the African savanna elephant has been classified by IUCN as threatened (as at March 2021; Gobush et al., 2021), in Botswana the population is large and increasing. It is also paradoxically both vital to the tourism industry of the country, and on the other hand, a source of controversy, conflict and concern; consequently management of the species must be sensitive to the issues surrounding it while maintaining the primary objective of conserving the species. The general management policy in National Parks and Game Reserves is “minimum intervention”. This does not mean ‘no action’ but is intended to restrict management to that which is absolutely necessary and to allow natural processes to continue as far as possible.

In developing this document, the following principles have been applied:

- Management activities should be process-based and adaptive. They should be designed so that they can

be continually adjusted in response to the results of previous activities. Such activities are incorporated into a strategy that involves continuous evaluation through monitoring the effects of the activities.

- A certain degree of precaution should always guide management actions. If there is a possibility of a problem arising, and even though the system may be poorly understood, it is better to carry out a management activity than risk the consequences of a worsening problem.
- In selecting management options, it is better to select the one that presents the least risk (minimum regret) should the action prove to be inappropriate.
- Management should be feasible, practical, economic and aesthetically acceptable
- Management should promote the derivation of economic benefits from sustainable use of elephants.



6

TARGETS FOR ELEPHANT CONSERVATION IN BOTSWANA

In 1991 DWNP developed a management plan for elephants and considered that no more than the 55,000 elephants estimated at the time could be sustained without habitat degradation (DWNP 1991)

Recognising the value of its abundant wildlife resources, Botswana has set aside 17% of the land for wildlife in protected areas i.e. National Parks and Game Reserves. However, because rainfall is seasonal and patchy, many wildlife populations, including elephants, are nomadic and utilise habitats outside of the protected areas in zones classified as Controlled Hunting Areas (CHAs), including 23% as Wildlife Management Areas. Thus, cumulatively Botswana has effectively allocated 40% of its land mass to wildlife conservation, with Forest Reserves adding a further 1%.

Conservation of elephants is inevitably interwoven with the needs and concerns of the citizens of Botswana, the desire to maintain the numbers of elephants without impacting negatively on habitats and biodiversity, and to maximise the benefits that can be achieved from their presence.

The dilemma faced by Botswana arises between attempting to protect as many elephants as possible at all costs on the one hand, and to preserve a full range of plant and animal species in protected areas on the other hand, while improving the livelihoods of rural communities.

Targets for elephant management and conservation in different parts of the country depend on the values and needs of stakeholders and on the values of those overseeing and managing the country's elephant population.

There are therefore three primary targets for elephant management in Botswana:

1. To maintain viable populations of elephants in Botswana through minimal interference and where necessary by adaptive management.

- 
2. To ensure elephant populations do not adversely impact on biodiversity conservation goals and community livelihood goals.
 3. To involve all sectors in the realisation of the full economic potential of elephants and other wildlife resources outside the protected areas through sustainable utilization.

Successfully balancing the targets between conservation of elephants, their habitats and utilisation requires careful implementation of adaptive management by selecting appropriate activities and carefully monitoring their outcomes. At the same time as achieving these targets, it is necessary to consider public sentiment and to meet national and international obligations and improve institutional and technical capacity for management.

7

MANAGEMENT PLAN IMPLEMENTATION

— Institutions & Roles —

7.1 Wildlife Management

DWNP in the Ministry of Environment, Natural Resources Conservation and Tourism manages Botswana's protected areas (National Parks and Game Reserves) as well as wildlife conservation and utilisation throughout the country. Staff are spread throughout the country which, for wildlife management purposes, is divided into five regions. Activities are coordinated between specialised divisions to address the varied functions of DWNP. These include Wildlife Estates (Protected areas and Management and Utilisation), Research and Statistics, Community Support and Outreach, and Law Enforcement. .

A large proportion of issues outside protected areas comprises human-wildlife conflict and as DWNP is responsible for 'problem animal control', considerable resources are required for this. This may require inspection of damage to determine compensation, the destruction of the animal, support for mitigating measures and education.

NGOs, private sector partners and community Trusts are involved in elephant conservation through funding, providing manpower and resources, and information-sharing. Safari and tour operators report illegal activities and provide revenue from their activities. They also develop infrastructure and provide funds to conservation initiatives.



7.2 Law Enforcement

The main agencies responsible for law enforcement are the DWNP, Botswana Police Service (BPS), Botswana Defence Force (BDF), Directorate of Intelligence and Security (DIS) and the Botswana Unified Revenue Service (BURS).

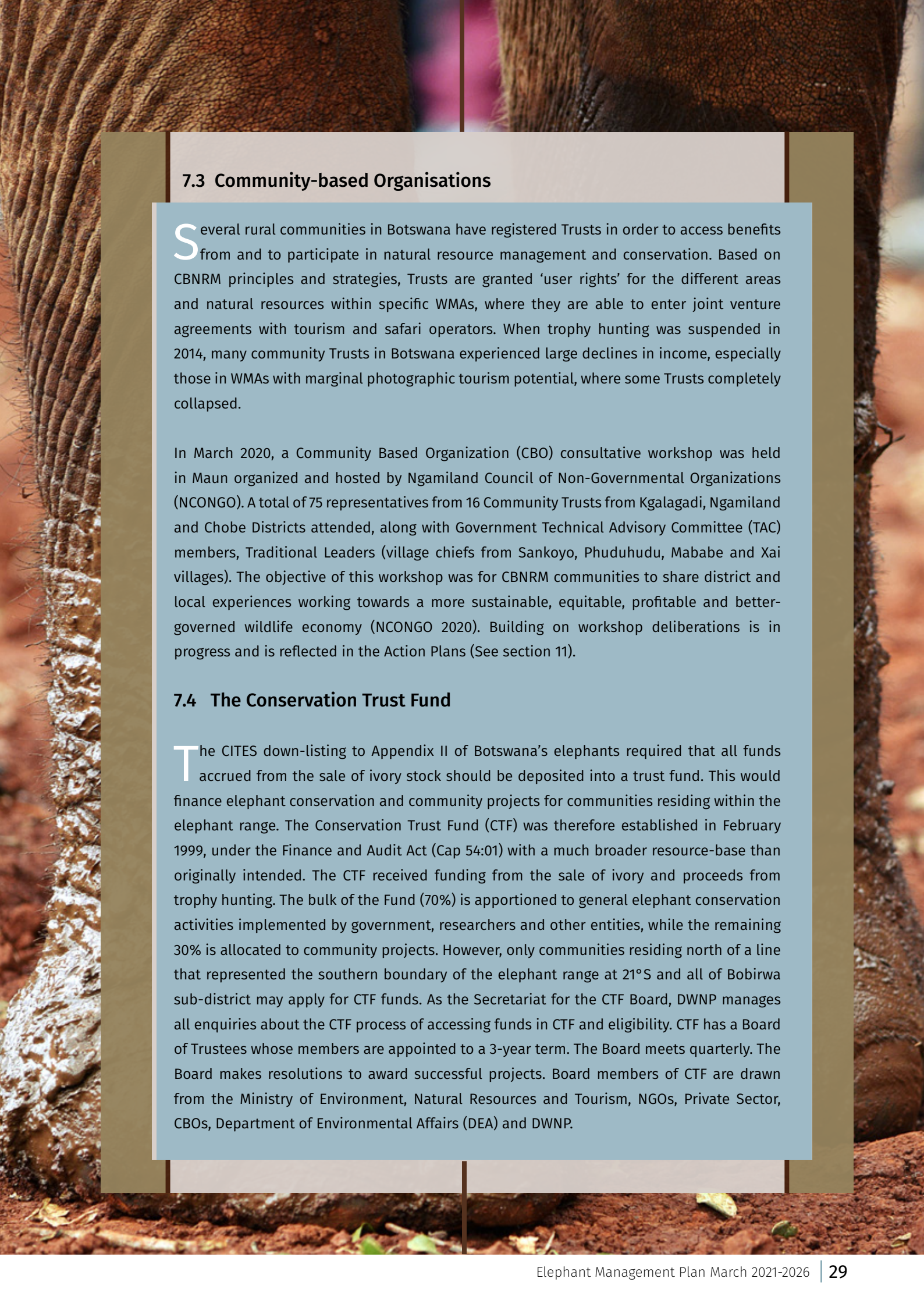
The DWNP is the lead enforcement agency with regard to wildlife crime in Botswana, as empowered by the Wildlife Conservation and National Parks Act of 1992. DWNP has a specific Law Enforcement Division with Intelligence, Investigations, as well as Anti-Poaching Units. All DWNP law enforcement staff work closely with the Police, BDF and DIS, while only selected staff work closely with BURS.

BPS – BPS is the primary body for crime prevention and law enforcement. Wildlife crime is a high priority for BPS, and any wildlife offence in collaboration with the Department of Public Prosecutions detected by DWNP is handed over to the police to deal with and prosecute the offender. The main counterpart within BPS in support of DWNP is the Narcotics, Fauna and Flora Investigations (NFFI). The Special Support Group (SSG) is an operational, paramilitary wing of BPS primarily concerned with policing public order situations. They also provide anti-poaching support in various parts of the country.

BDF – BDF supports the DWNP anti-poaching operations throughout the country.

DIS – DIS liaises and works closely with counterparts in BPS, BDF and DWNP, assisting with the development of intelligence packages for use by operational teams. DIS plays an important role in the coordination of intelligence.

BURS – BURS is divided in two divisions, Inland Revenue and Customs and Excise. The Division of Customs and Excise is the one primarily involved in wildlife crime issues.

A close-up photograph of an elephant's trunk and head, showing the textured skin of the trunk and the ear. The background is a soft-focus natural setting.

7.3 Community-based Organisations

Several rural communities in Botswana have registered Trusts in order to access benefits from and to participate in natural resource management and conservation. Based on CBNRM principles and strategies, Trusts are granted 'user rights' for the different areas and natural resources within specific WMAs, where they are able to enter joint venture agreements with tourism and safari operators. When trophy hunting was suspended in 2014, many community Trusts in Botswana experienced large declines in income, especially those in WMAs with marginal photographic tourism potential, where some Trusts completely collapsed.

In March 2020, a Community Based Organization (CBO) consultative workshop was held in Maun organized and hosted by Ngamiland Council of Non-Governmental Organizations (NCONGO). A total of 75 representatives from 16 Community Trusts from Kgalagadi, Ngamiland and Chobe Districts attended, along with Government Technical Advisory Committee (TAC) members, Traditional Leaders (village chiefs from Sankoyo, Phuduhudu, Mababe and Xai villages). The objective of this workshop was for CBNRM communities to share district and local experiences working towards a more sustainable, equitable, profitable and better-governed wildlife economy (NCONGO 2020). Building on workshop deliberations is in progress and is reflected in the Action Plans (See section 11).

7.4 The Conservation Trust Fund

The CITES down-listing to Appendix II of Botswana's elephants required that all funds accrued from the sale of ivory stock should be deposited into a trust fund. This would finance elephant conservation and community projects for communities residing within the elephant range. The Conservation Trust Fund (CTF) was therefore established in February 1999, under the Finance and Audit Act (Cap 54:01) with a much broader resource-base than originally intended. The CTF received funding from the sale of ivory and proceeds from trophy hunting. The bulk of the Fund (70%) is apportioned to general elephant conservation activities implemented by government, researchers and other entities, while the remaining 30% is allocated to community projects. However, only communities residing north of a line that represented the southern boundary of the elephant range at 21°S and all of Bobirwa sub-district may apply for CTF funds. As the Secretariat for the CTF Board, DWNP manages all enquiries about the CTF process of accessing funds in CTF and eligibility. CTF has a Board of Trustees whose members are appointed to a 3-year term. The Board meets quarterly. The Board makes resolutions to award successful projects. Board members of CTF are drawn from the Ministry of Environment, Natural Resources and Tourism, NGOs, Private Sector, CBOs, Department of Environmental Affairs (DEA) and DWNP.





8 | DEVELOPMENT OF THE ELEPHANT MANAGEMENT PLAN

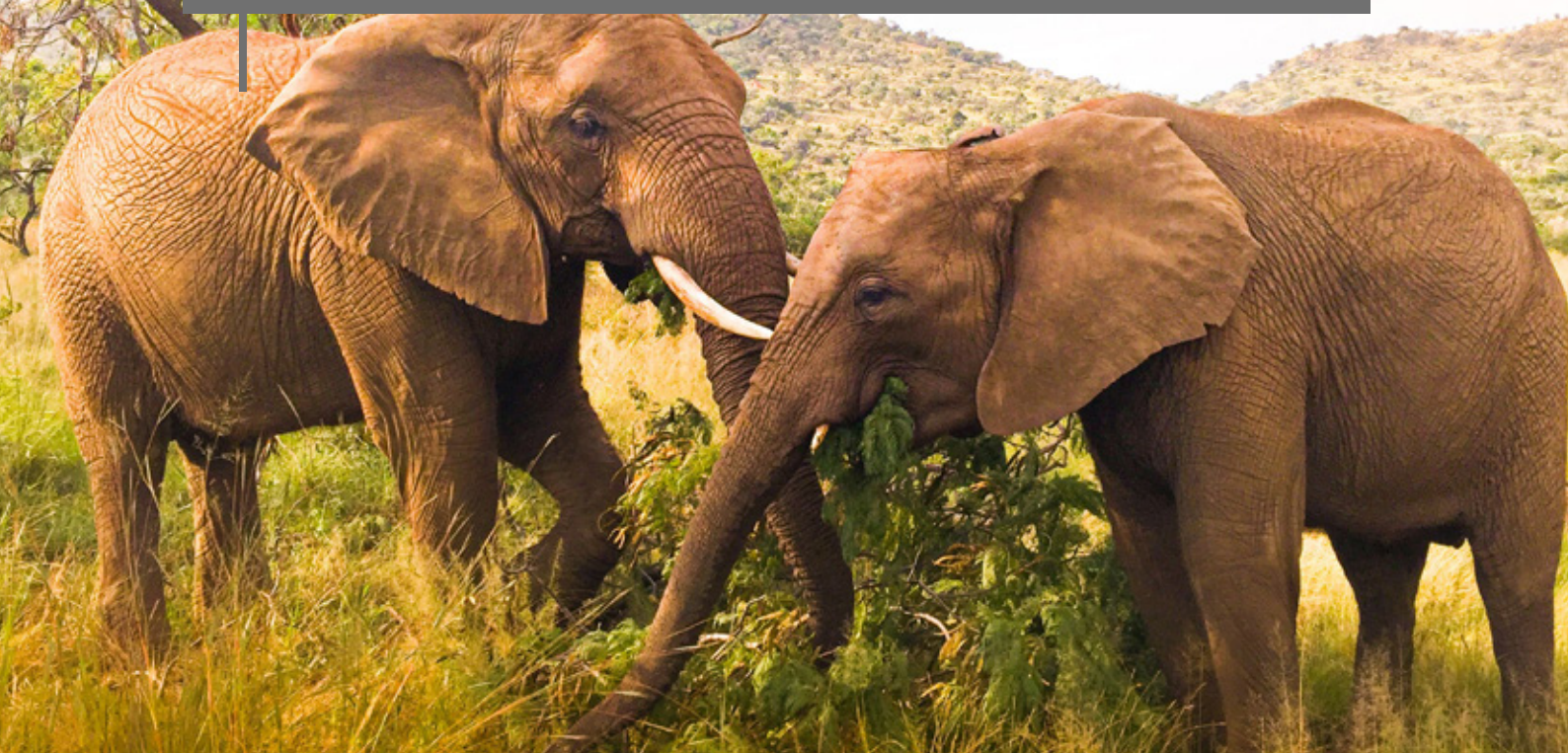
The development for this Elephant Management Plan began in June 2018 with four national consultation workshops taking place on 28th June 2018 at Nata, 7th July 2018 at Selebi Phikwe, 10th July 2018 at Kasane and 25th July 2018 at Maun. A technical workshop was subsequently held in August 2018. A validation workshop to consider the draft Plan was held in Maun in December 2019.

Botswana, like many other African elephant range states has been severely impacted by the COVID-19 pandemic. Resources for the conservation and management of wildlife resources including elephants have decreased as funds have been diverted to other competing priorities. Revenues generated by protected areas through tourism have dropped by up to 90%. Revenues generated from hunting have also been severely affected due to travel restrictions. The development of this Plan coincided with the pandemic and, therefore, was cognizant of the emerging challenges facing wildlife managers going forward.

In 2019, His Excellency President Mokgweetsi Eric Masisi commissioned a Presidential Cabinet Sub Committee on the Hunting Dialogue, which undertook extensive consultations to assess the opinions of Botswana on wildlife hunting. The assignment culminated in a recommendation to re-instate hunting, including elephants. Other recommendations included the construction of elephant-proof fences to reduce conflict, and the review of compensation rates and species for which compensation of paid.

At a sub-regional level, the Kasane Elephant Summit which was held in June 2019 was attended by the Heads of State of Botswana, Namibia, Zambia and Zimbabwe. The four countries along with Angola comprise the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA). More than 220,000 elephants are found within KAZA. The Summit agreed a number of recommendations including the sustainable use of elephants to benefit communities, the need for joint KAZA-wide aerial survey of elephants, improved coordination in combating elephant poaching and trafficking of ivory and ivory products, and improved research and monitoring of elephants and their habitats.

9 LOGIC AND STRUCTURE OF THE ACTION PLAN



This plan is based on a Logical Framework format. The Vision and targets are derived from a series of workshops held in 2018 and 2019 to specifically develop this strategy. The Vision and targets, as well as objectives and activities, have been updated from an earlier Botswana Elephant Management Plan, while also following the IUCN African Elephant Action Plan of 2010.

To achieve the targets set for managing Botswana's elephants, six key components have been identified:

- Protection and law enforcement
- Human-elephant conflict management
- Management of habitats and connectivity
- Social and Economic framework
- Conservation capacity
- Coordination and collaboration

Table 1 Structure of the Action Plan for Elephant Conservation and Management in Botswana

LONG-TERM VISION	THE LONG-TERM VISION APPLICABLE TO THE PERIOD OF THIS PLAN.
Targets	There are three Targets included in the current Plan. There is no provision to maintain, decrease or increase elephant numbers linked to a specific national benchmark as it was the case in 1991 because, as noted in section 6 this depends on the values and needs of stakeholders and on the values of those overseeing and managing the country's elephant population.
Key Components	The five Key Components are the primary themes or headings of the strategy under which the framework is organised.
Strategic Objectives	The Strategic Objectives reflect briefly but more explicitly the policy intention for the respective components.
Outcomes (expected outcomes)	The Outcomes are statements that reflect the expected results that will be realised during the time frame of the Action Plan. Outcomes are therefore expressed in the past tense.
Key Performance Indicators (KPIs)	The KPIs provide a basis on which to measure and monitor the success or otherwise of the Strategic Objectives, Outcomes and Activities.
Key Activities (actions)	Key Activities represent the necessary and sufficient actions that need to be completed to achieve the Outcomes. They are the actions on which the major emphasis should be placed.
Means of Verification of the KPIs	It is clearly necessary for the verification and monitoring of KPIs in a manner in which they can be tracked and verified. Equally important is the need for monitoring protocols to be standardised across local (and regional levels e.g. SADC or Africa-wide) so that national and regional level KPIs and statistics can be compiled. This will then allow valid comparisons of performance across regions and local areas to be made.
Implementation Strategy	DWNP, the National Elephant Coordinator and the National Elephant Management Committee will interact and collaborate with a wide range of agencies and stakeholders in the implementation of this Action Plan.

VISION, TARGETS AND KEY COMPONENTS

VISION:

To conserve optimal elephant populations while ensuring the maintenance of habitats and biodiversity, promoting the contribution of elephants to local economies and to National development while minimising their negative impacts on rural livelihoods

TARGETS:

1. To maintain viable populations of elephants in Botswana through minimal interference and where necessary by adaptive management
2. To ensure elephant populations do not adversely impact on biodiversity conservation goals and community livelihood goals
3. To involve all sectors in the realisation of the full economic potential of elephants and other wildlife resources outside the protect areas through sustainable utilisation

Key Components	Protection & Law Enforcement	Human-elephant Conflict Management and Reduction	Management and ecological Monitoring	Social and Economic Framework	Conservation Capacity	Coordination & Collaboration
Strategic Objectives	1. Populations of elephants in Botswana are protected	2. An enabling environment for options to reduce or, where possible, prevent human-elephant conflict (HEC)	3. Implement effective biological, ecological and management monitoring to achieve elephants populations that are within upper and lower acceptable limits in numbers, impacts and distribution	4. Implement strategies to enhance the contribution of elephant to rural livelihoods and national development.	5. Effective adaptive management with sufficient and appropriately trained personnel, equipment, infrastructure and financing	6. Ensure effective coordination and collaboration with national and international stakeholders
Outcomes	Investigations, anti-poaching operations and law enforcement implemented to minimise losses of Botswana's elephants and their habitats.	Options for increasing tolerance for co-existence with elephants implemented and tolerance for living with elephants increased	Adaptive management to achieve viable populations and acceptable habitat condition implemented	Participatory mechanisms improved, incentives for living with elephants increased and the distribution of financial benefits from elephants improved at local and national levels	Appropriate links and networks established to support population management and strategic planning at national, regional & global levels	Implement mechanisms to achieve optimal coordination at national and international level to assess progress in adaptive elephant population management

Protection & Law Enforcement - Protecting elephant populations in Botswana

Outcome: Investigations, anti-poaching operations and law enforcement implemented to minimise losses of Botswana's elephants and their habitats

KPI: Losses of elephant due to illegal activities reduced to less than 5% by 2026

MV: Monitoring data on illegal activity, successful convictions, carcass records, b status & trends of elephant population.



	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
1	Obtain adequate annual budgets to support all anti-poaching activities.	Obtain adequate annual budgets to support all anti-poaching activities	Equipment inventory	Annually	DWNP
2	Establish & support anti-poaching teams, crime investigation systems & infrastructure.	Anti-poaching teams & crime investigators trained, operational and coordinating with other national & international agencies.	Monthly & annual operational reports.	Ongoing	DWNP, BDF, BPS
3	Develop & support an intelligence network.	Informer systems operating at all levels. Arrests resulting from intelligence.	Records of arrests & successful prosecutions from informer reports.	Ongoing	DWNP, BDF, BPS
4	Promote inter-agency law enforcement cooperation.	Reduction in carcass ratio' not 'Lower carcass ratio	Monthly and annual reports.	Ongoing	DWNP, BDF
5	Promote public involvement in law enforcement using incentive schemes & reporting hotlines.	Incentives & hotlines established & used Community contribution to law enforcement increased Publicity drives.	Records & reports of public actions.	Ongoing	DWNP
6	Enhance international and transboundary collaboration in law enforcement to improve security of Botswana's borders & combat illegal offtake.	Regular meetings on law enforcement collaboration and activities between law enforcement agencies of neighboring countries established at regional / transboundary park level by July 2021 - if not already in place (SADC LEAP) and operating in order to improve joint operations and border surveillance. Broader collaboration with INTERPOL and other international law enforcement entities.	Proceedings of meetings & workshops Reports of joint patrol activities & outcomes Reports of actions undertaken.	July 2021 and ongoing	DWNP
6	Monitor & enforce park regulations (offroad driving; collecting specimens etc.)	Incidents recorded; fines issued	Records; fines	Ongoing	DWNP
7	Policing hunting regulations-checking licences, roadblocks etc.	Number of staff deployed Incidents recorded.	Records; fines	Ongoing	DWNP

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
9	Restructure DWNP to strengthen its ability to combat poaching and wildlife crime	Develop and implement the Wildlife Service Act	Wildlife Service Act	Start by December 2021 and ongoing	DWNP
10	Promote the use of technology to combat wildlife crime	Technologies procured and deployed	Reports	By December 2021	DWNP



Human-elephant Conflict Management & Reduction - Provide a practical environment for options to reduce or, where possible, prevent HEC

Outcome: Options for increasing tolerance for coexistence with elephants demonstrated.

KPI: Reduction of HEC to less than 50 incidents per year by 2026.

MV: Monitoring & database of numbers of incidents & outcome of interventions.

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	RESPONSIBILITY
1	Support communities by demonstrating or implementing prevention & mitigating measures (barriers, alarms, deterrents, repellents, disturbance, translocation, additional water sources, removal of elephants etc.)	Barriers constructed Numbers of HEC cases decreased	Staff trained Communities familiar with options Mitigating measures in place (barriers, fences, ditches etc.) Reports of numbers of HEC incidents Reports of numbers of 'problem elephants' killed	DWNP
2	Examine options for compensation including self-insurance schemes with full consultation of affected communities	Opinions of affected people determined	Outcomes of consultations reported	DWNP
3	With community support, establish & maintain wildlife corridors within settled areas	Location of practical corridors agreed	Corridors marked & public informed No new infrastructure in corridors	DWNP
4	Facilitate the transparent distribution of the benefits and costs of elephant management & conservation	Benefits from eco-tourism, controlled hunting & other elephant-based tourism accrued to rural communities Increased tolerance of elephants by rural communities	Meat Funds in banks Fewer HEC incidents reported	DWNP
5	Promote effective recovery & use of all products from dead elephants for the benefit of local inhabitants	Meat supplied to local inhabitants Products used for tourist souvenirs as permitted by CITES	Meat Souvenirs	DWNP
6	Monitor numbers & location of HEC incidents, responses & outcomes	Hotspots identified Numbers of elephants killed for PAC	MOMS modules in use Database producing reports annually	DWNP
7	Advocate for the inclusion of information on elephants & their conservation in school curricula; promote environmental education & invest in national public relations exercises	Engagements with relevant institutions (e.g. Ministry of Basic Education. Association of Environmental Clubs held). More positive attitudes to elephant conservation	Knowledge about elephants Posters, flyers, booklets	DWNP



	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
6	Consult with all stakeholders & agree on conservation priorities	Workshops & social surveys conducted	Proceedings & reports	2022	DWNP
7	Review Government policies in line with conservation priorities	Governmental working group formed	Policies reviewed	2022	DWNP
8	Protect rare vegetation species/important habitats using barriers	Elephants prevented from causing damage Vegetation density & habitat structure monitored	Presence or absence of elephants Number of sites damaged	Ongoing Annually	DWNP and independent researchers
9	Monitor effects of management activities & revise or continue as appropriate	Suitability & effectiveness of management inputs determined Subsequent management activity selected & implemented	MOMS modules monthly & annual summaries	Ongoing	DWNP

Social and Economic Framework. Participatory mechanisms improved, incentives for living with elephants increased and the distribution of financial benefits from elephants improved at local and national levels

Outcome: Participatory mechanisms improved, incentives for living with elephants increased and the distribution of financial benefits from elephants improved at local and national levels

KPI: Benefits to communities and contribution to national development increased and HEC reduced

MV: Report on amounts and distribution of revenues from consumptive & non-consumptive utilisation of elephants

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
1	Provide incentives and promote partnerships (e.g., CBOs/Safari Operators) and joint venture opportunities	Formal joint venture agreements Positive attitudes to coexistence with elephants	Legal agreement documents Fewer poaching incidents/increased arrests	2022	DWNP;CBOs, BWPA, safari & tourism operators
2	Mobilise new Trusts or resuscitate existing Trusts	New community Trusts established Existing community Trusts supported	Committees named Systems established Annual reports	Ongoing	DWNP with rural community hierarchy; private sector
3	Support private sector efforts to explore additional elephant-based tourism and sustainable utilisation opportunities	Increased elephant-based activities for tourists Increased manufacture of artefacts from elephant products e.g. raw hides, hair and ivory by communities and private sector	Reports of new projects Numbers of new outlets for products	Ongoing	DWNP; private sector
4					
	Develop and implement Hunting Strategy	Strategy completed on basis of updated & accepted hunting guidelines	Strategy document	2022	DWNP with input from private sector
5	Develop & strictly implement system to monitor hunting parameters including, but not limited to age, ivory weight and off-take numbers per CHA	Annual reports on numbers hunted & trophy weight Devise and implement an electronic, user-friendly Hunting Database	Measurements of trophies from each hunt Detailed annual reports Hunting Database fully functional.	2022	DWNP, private sector, CBOs, NGOs, consultants.

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
6	Implement participatory quota setting mechanisms together with Community Trusts and Private sector	Participatory quota setting document drafted and approved Annual quota setting meeting	Participatory quota setting handbook approved and implemented Minutes of participatory quota meetings. Quota stamped & available tusk weight Annual report on trophies	Initiated in 2021 and finalized in 2022	DWNP, private sector, CBOs, NGOs, consultants.
7	Ensure complete compliance with hunting & guiding regulations and quotas	Hunts accompanied by designated DWNP escorts Hunting returns monitored & quotas not exceeded Unethical behaviour (wounding, harassing, & habitat damage from vehicles/infrastructure) prevented	Reports submitted after each hunt by DWNP escorts Standard format to facilitate completion (see form Appendix III)	Ongoing	DWNP
8	Monitor income from hunting	Detailed annual report from operators on income from hunting operations including hunting fees, accommodation & all associated costs	Annual reports	Ongoing	DWNP; private sector; CBOs NGOs
9	Monitor income from all tourism operations	Detailed annual report from operators on income from tourism operations including activity, accommodation & all associated costs	Annual reports	By December 2022 ing	DWNP; private sector; CBOs NGOs
10	a) Reduce adverse impacts on wildlife management areas b) Review length of concession leases to encourage greater investment.	Number of revised land use plans. Number of reviewed leases	Records and reports	By December 2022	DWNP, BTO, MLWS, Land Boards.
11	Facilitate the transparent and equitable distribution of the benefits and costs of elephant management and conservation	Reports of communications & agreements with communities & joint ventures Records of payments by operators Explore the feasibility of increased benefit sharing for communities.	Annual reports Annual financial statements Benefit sharing report	Ongoing	DWNP; tourism & safari operators; private sector; CBOs
12	Commission a study to examine options to trade in elephant ivory	Study commissioned	Report with recommendations	2021	DWNP

11.5 Conservation Capacity Ensuring adaptive management is implemented effectively with sufficient and appropriately trained personnel, equipment, infrastructure and financing

Outcome: Effective adaptive management with sufficient and appropriately trained personnel, equipment, infrastructure and financing implemented

KPI: Law enforcement, monitoring and research staff are trained, equipped and deployed

MV: Records of training, equipment and staff deployment

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
1	Analyse current capacity and identify needs	Evaluation of staff in terms of qualifications, numbers & needs	Lists of personnel in government, NGOs and private sector	Three months from acceptance of this plan	DWNP
2	Identify & establish systems for management activities & allocate appropriate staff	Systems for monitoring all quota setting, adaptive management processes	Systems in place & functioning	2022	DWNP with assistance from qualified experts (e.g. Universities; consultants; NGOs)
3	Secure budgets to build and maintain necessary human resources to strengthen elephant conservation & management capacity	Funding & trained staff available for all aspects of elephant management (anti-poaching, HEC resolution, utilisation etc.) MOMS patrol records & databases maintained	MOMS monthly and annual reports	Ongoing	DWNP
4	Initiate relevant research and monitoring necessary for the conservation and adaptive management of elephants and habitats	Research projects designed & reports submitted regularly Outcomes of research & monitoring used to guide management MOMS implemented	Research & MOMS reports; hunting offtake return form	Ongoing	DWNP; private sector
5	Strengthen and facilitate research capacity in DWNP and collaborate with other research institutions	Qualified & experienced researchers employed	Number of researchers Budget for equipment Research permits Reports & publications on elephant conservation & management	Ongoing	DWNP
6	Establish training and in-service re-training of DWNP personnel in law enforcement, wildlife management, research and monitoring, education and awareness.	DWNP research officers qualified at tertiary levels trained to interpret aerial survey, ivory weights & other monitoring data DWNP management officers trained in management activities. Communities trained in MOMS & other monitoring as required	Records of training Copies of training programmes Numbers of officers trained Numbers of communities supported Reports	Ongoing	DWNP/BWTI
7	Engage available external expertise	External funding sourced to supplement available funds for employing expertise Outsourced projects	Reports	Ongoing	DWNP; Universities; consultants

Coordination, Collaboration & Programme Management Ensure effective coordination and collaboration with national and international stakeholders to achieve these strategic objectives

Output: Implement mechanisms to achieve optimal coordination at national and international level to assess progress in adaptive elephant population management

KPI: National elephant coordinator appointed and national and regional elephant conservation committees with appropriate stakeholder participation appointed and information dissemination programme in place.

MV: Reports & minutes

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
1	Develop & sign official collaboration protocols with bordering countries including anti-poaching harmonization, joint actions, border controls, intelligence & data exchange & prosecution facilitation	Official collaboration protocols with neighbouring countries drafted and signed. M.O.U.s signed	Signed documents	End 2022	MENT; DWNP; facilitating NGOs
2	Strengthen links with neighbouring states to confer on the management of shared elephant populations, particularly in relation to TFCA populations. Participate in the development of management planning for TFCAs	Meetings held with international counterparts at agreed intervals Agreed actions taken	Minutes of meetings	Ongoing	DWNP
3	Collaborate with international organisations (e.g. CITES, Interpol, TRAFFIC etc.) for information exchange	Information exchanged Activities shared	Reports, data sheets, minutes	Ongoing	DWNP
4	Establish a national elephant conservation & management committee that includes stakeholder meetings at least bi-annually to review progress and develop annual implementation plans	Meetings held Agreed activities conducted	Minutes of meetings Reports on outcomes of actions	2021	DWNP
6	Establish a full-time elephant coordinator to be responsible for coordinating the implementation of the Action Plan	Manager employed Reports written	Manager in place Reports	Ongoing	DWNP
7	Strengthen coordination between the hunting industry and the elephant management programme	Meetings or workshops conducted with all stakeholders	Proceedings	Ongoing	DWNP

11.6 cont..

	KEY ACTIVITIES /ACTIONS	KEY PERFORMANCE INDICATORS	MEANS OF VERIFICATION	TIME FRAME	RESPONSIBILITY
8	Implement an effective information dissemination and communication strategy, including regular progress reports on the implementation of the plan	Extension officers regularly meet with stakeholders to discussion activities related to the plan	Reports	Ongoing	DWNP
9	Develop a communication strategy for implementation of the Elephant Management Plan	Communication strategy developed	Communication strategy	2021	DWNP
10	Develop priorities and budgets for the implementation of the Management Plan	Priorities and budget prepared	Approved priorities document and budgets	Immediate and at the same time of the approval of the Plan and on an annual basis thereafter.	DWNP

12. MANAGEMENT ACTIVITIES IN CHAS

The activities and indicators presented in the framework above provide an outline of the requirements for successful elephant management in Botswana. Some apply to the general management of the country's elephants, but there is a variety of land-uses, issues and opportunities related to elephants in different parts of the country. These are summarised in the map presented in Figure 10. The relevant management activities for each of the CHAs are shown in the Table that follows.



Table 2. Summary of activities in elephant management zones

MANAGEMENT ZONE	ACTIVITIES
Protected areas	Core state protection in National Parks and Game Reserves; eco-tourism; benefits to the State
Non-consumptive utilisation areas	Commercial eco-tourism & non-consumptive use of elephants; some benefits accrue to residents
Hunting concessions	Controlled hunting; commercial hunting with some benefits from hunting accruing to residents.
Citizen hunting	Citizens given the opportunity to hunt; reduced licence fee; non-export
Community managed areas	Quotas only available for Botswana based operators; trophies exportable
Elephant raffle quota	Controlled hunting; citizens allocated elephant quota by raffle; carcass given to community; non-export
Special elephant quota	Controlled elephant hunting & other game hunting;

These elephant management zones are reflected in land use categories that have been formalised by DWNP, as shown in Figure 10. Activities in each CHA within the elephant range are described in Table 3 overleaf.

Table 3. Details of management activities required for each land unit (DWNP). Colours refer to the CHA map (Figure 10)

CHA	COMMENTS	ACTIONS (SECTION 9)
National Parks, Game Reserves & Forest		
NG28, 40 (Moremi GR)	Habitats are being impacted by high densities of elephants. Where this is considered unacceptable & where practical, elephants should be kept out of selected sites.	Anti-poaching activities 9.1(3,4,5) Monitor habitats & biodiversity 9.3 (4) Identify conservation priorities 9.4(4) Initiate relevant research & monitoring 9.5 (4)
NG48 (Nxai Pan NP) NG42 (proposed extension)	Baines baobabs should be protected from elephants using barriers such as sharp rocks	Anti-poaching activities 9.1(3,4,5) Monitor habitats & biodiversity 9.2 (4) Protect important sites 9.3(6) Monitor management outcome 9.3(7) Initiate relevant research & monitoring 9.5 (4).
NG52, CT9 (Makgadikgadi Pans NP)	While the Boteti was dry only a few (around 300) bull elephants migrated seasonally to and from the woodlands along the Boteti river. Numbers of elephants in the area have increased and now include family groups.	Anti-poaching activities 9.1(3,4,5) Monitor habitats & biodiversity 9.2 (4) Protect important sites 9.3(6) according to agreed priorities 9.3(4) Monitor management outcome 9.3(7) Conduct relevant research & monitoring 9.5 (4)
CH3 (Chobe NP)	Although the riparian vegetation and biodiversity has been changed by high densities of elephants over many years, the tourism value of elephants over-rides any concerns for rehabilitating or protecting the remaining woodlands.	Conduct anti-poaching activities 9.1(3,4,5) Monitor & enforce park regulations 9.1(8)
GH12 (Central Kalahari GR) KW3 (Khutse GR)	In the past 10 years, elephants have been occasionally moving into or through the CKGR.	Anti-poaching activities 9.1(3,4,5)
CH2,4,6,7,13 (Forest reserves)	Conservation of woodlands are the objective of forest reserves so should be protected from elephants. Forest reserves are Natural Resource areas.	Anti-poaching activities 9.1(3,4,5)
CT28 (Tuli – Mashatu)	Elephant densities are high in this privately owned wildlife reserve. Elephants are a focal point for eco-tourism. Management is conducted privately although any removal of elephants would have to be through the authority of the DWNP.	Anti-poaching activities 9.1(3,4,5)

CHA	COMMENTS	ACTIONS (SECTION 9)
Non-Consumptive Utilisation		
NG 10,12, 14, 15, 16, 17, 18, 19,21, 22,23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 34, CH5, 9, 10, 11, 12, Eco-tourism etc.	Although there are significant negative impacts of elephant on habitats in parts of these land units, fencing selected habitats would be unsightly but may be an option if the need for them is explained to tourists.	Anti-poaching activities 9.1(3,4,5) Monitor habitats & biodiversity 9.2 (4) Protect important sites 9.3(6) according to agreed priorities 9.3(4) Monitor management outcome 9.3(7)
Hunting Concession		
NG1,2 3,7,11 CT8,10 (Citizen hunting areas with elephant quotas)	NG 1 2 and 3 although last surveyed in 2013, represent new known range of elephants and the natural expansion areas towards Namibia (Khaudum NP and Nyae Nyae). The areas seem to not contain many elephants although increasing HEC occurs in places. Elephants seem to be seasonal occupants of the north-western corner (NG1 & 2) and have increasingly occupied parts of CT8.	Anti-poaching activities 9.1(3,4,5) & 9.4(7). Where there are high levels of HEC, mitigating measures should be implemented 9.2(1) Hunting according to policies & regulations with quotas based on estimated numbers of elephants per CHA deducting PAC & poached animals 9.4(6). Ensure benefits accrue to local communities 9.2(4) 9.2(5) 9.4(10). Monitor & enforce hunting regulations 9.1(9). Strictly implement system to monitor hunting parameters including age, trophy weight and off-take numbers per CHA 9.4(5). Ethical considerations must be taken into account (2.3).
NG4, 5,20,41,49,50 CT1,2,27 CH1,8 Community management areas	Elephants make sporadic wet season forays into NG4 and NG5. Problem animals cause considerable conflict near Mmadinare (CT27). In 2002, residents indicated a preference for the removal of all these elephants.	
NG13, 43, 47, CT3, GH1, 3, 10, 11, SO2, KD1, 2, 6, 11, 12, 15, KT3, KW4, 12 Hunting concessions	Elephants occur in varying densities in the other land units in this category and thus come into conflict where human settlements overlap with their range. Hwange NP lies across the border from CT3.	
Elephant Raffle Quota		
NG1,2,7,11, CT8,10,16,18,20,21,24,25,26 NE1	Elephants are not abundant in these CHAs but there are probably cross-border movements from Zimbabwe. Citizen hunting for small licence fee. Quota allocated by raffle. Carcass donated to nearest community/ village. Strictly non-export.	
Special Elephant Quota		
NG8, 9, 11,35, CT4, 7, 29,11, 13	Elephants from Tsholotsho hunting areas in Zimbabwe may cross the border into CT7. Funds are paid to the CTF. Quota allocated 70% for citizen operators, 30% for Botswana-based operators. Trophies exportable	

CHA	COMMENTS	ACTIONS (SECTION 9)
Settlement & Agriculture		
NG6 (Tsodilo Hills) NG3	Tsodilo Hills is a sacred place in which tourism is permitted. Elephants are not common	Anti-poaching activities 9.1(3,4,5)
SO1,3,4,5,6,7,8,9,10,11 SE1,2,3 KW1,2,5,6,7,8,9,10,11, 12,13,14	Occasional occurrences of small numbers of elephants	Anti-poaching activities 9.1(3,4,5)





13. REFERENCES

- Adams T.S.F., Chase M.J., Attard A. and Kea LE. 2017. A preliminary study of stakeholders' opinions and perceptions of elephants and elephant management in Botswana. *Pachyderm* 58, 67–76.
- Addy J.E. 1993. Impact of elephant induced vegetation change on the Chobe bushbuck (*Tragelaphus Scriptus Ornatus*) along the Chobe river, northern Botswana. M.Sc. Thesis. Univ. Witwatersrand, SA.
- Barnes J. 1998. Wildlife economics: a study of direct use values in Botswana's wildlife sector. Thesis, University College London.
- Barnes J. 2001. Economic returns and allocation of resources in the wildlife sector of Botswana. *S African Journal of Wildlife Research* 31 (3&4): 141–153.
- Campbell A.C. 1990. History of Elephants in Botswana in *The Future of Botswana's Elephants* ed P. Hancock. Kalahari Conservation Society, DWNP.
- Centre for Applied Research. 2016. Review of community-based natural resource management in Botswana. Report prepared for Southern African Environmental Programme (SAREP).
- Child B. 2020. Elephants – A crisis of too many, not too few. in *Conservation Frontlines* April 2020 Volume II,2 available at: <https://www.conservationfrontlines.org/2020/04/elephants-a-crisis-of-too-many-not-too-few/>
- Child G. 1968. Report to the Government of Botswana on an Ecological Survey of Northeastern Botswana. FAO Report No. TA 2563, Rome.
- Craig G.C. and Peake D.A. 2011. The Elephants of Northern Botswana: Age determination, age and size of hunting trophies. Report
- Craig G.C., Martin R.B. and Peake D.A. 2011. The Elephants of Northern Botswana: Trophy Hunting, Population dynamics and future management. Report
- Cumming D.H., Fenton M.B., Rautenbach I.L., Taylor R.D., Cumming G.S., Cumming M.S., Dunlop J.M., Ford G.M., Hovorka M.D., Johnston D.S., Kalcounis M., Mahlanga Z. and Portfors C.V.R. 1997. Elephants, woodlands and biodiversity in southern Africa. *South African Journal of Science* 93: 231–236.
- Cumming D.H. and Jones B. 2005. Elephants in southern Africa: management issues and options. World Wildlife Fund (WWF) — SARPO, 11, Harare, Zimbabwe.
- Government of Botswana 2013. Botswana National Anti-Poaching Strategy
- DG Ecological Consulting 2003. National Policy and Strategy for the Conservation and Management of Elephants in Botswana. DWNP. Gaborone.
- DWNP 1991. The Conservation and Management of Elephants in Botswana. DWNP, Gaborone.
- DWNP 2002. Department of Wildlife and National Parks, Strategic plan, 2002–2006. DWNP, Gaborone.
- DWNP 2013. Aerial Census of Animals in Northern Botswana. DWNP, Gaborone
- DWNP 2018. Wildlife Aerial Survey of South-Central Botswana-Dry season. DWNP, Gaborone
- Gibson D St C, Craig G.C. and Masogo R.M. 1998. Trends of the elephant population in northern Botswana from aerial survey data. *Pachyderm* 25: 14–27
- Gobush K.S., Edwards, C.T.T, Balfour, D., Wittemyer, G., Maisels, F. and Taylor, R.D. 2021. *Loxodonta Africana*. The IUCN Red List of Threatened Species 2021: e.T181008073A181022663. <https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T181008073A181022663.en>
- Government of Botswana 1986, Wildlife Conservation Policy (a Paper on the Utilization of the Wildlife Resource of Botswana on a Sustainable Basis). Government Paper No. 1 of 1986. Government Printer, Gaborone. 11pp
- Government of Botswana, Wildlife Policy 2013, Ministry of Environment, Wildlife and Tourism. Government Printer, Gaborone. 11pp
- Government of Botswana 2019, Hunting and Escort Guidelines. Ministry of Environment, Natural Resources Conservation and Tourism.
- Hoare R.E. 2001. A Decision Support System for Managing Human-Elephant Conflict Situations in Africa. African Elephant Specialist Group, SSC, IUCN
- Martin R.B. (2008). Review of Safari Hunting in Botswana: Financial and Economic Assessment. Consultancy for The Botswana Wildlife Management Association, June 2008. 40pp

- Herremans M. 1995. Effects of woodland modification by African elephant *Loxodonta Africana* on bird diversity in northern Botswana. *Ecography* 18, 440–454
- Martin R.B. (2008). Review of Safari Hunting in Botswana: Financial and Economic Assessment. Consultancy for The Botswana Wildlife Management Association, June 2008. 40pp
- Jachmann H. 1998. Monitoring Illegal Wildlife Use and Law Enforcement in African Savanna Rangelands. Wildlife Resource Monitoring Unit, ECZ, Lusaka, Zambia.
- Lugoloobi W.R. 1993. A preliminary report on the vegetation status and elephant utilisation along the Chobe river front in Chobe National Park. Department of Wildlife and National Parks, Botswana. 95pp
- Mbaiwa J.E. 2017a. Effects of the safari hunting tourism ban on rural livelihoods and wildlife conservation in Northern Botswana. *South African Geographical Journal*. 100. 1–21. 10.1080/03736245.2017.1299639.
- Mbaiwa J.E. 2017b. Poverty or riches: who benefits from the booming tourism industry in Botswana? *J. Contemporary African Studies* 35: 93–112.
- Mead B. 2001. Economic Analysis of Commercial Consumptive Use of Wildlife in Botswana Final Report. Consultancy for the Botswana Wildlife Management Association carried out by ULG Northumbrian Ltd. 48pp
- Modise O., Lekoko, R. N., Thakadu O.T., and Mpotokwane M.A 2018. “Toward Sustainable Conservation and Management of Human-wildlife Interactions in the Mmadinare Region of Botswana: Villagers’ Perceptions on Challenges and Prospects,” *Human–Wildlife Interactions*: Vol. 12 : Iss. 2 , Article 8. DOI:<https://doi.org/10.26077/qr2b-jg40> <https://digitalcommons.usu.edu/hwi/vol12/iss2/8>
- Mogomotsi P.K. 2020, Mogomotsi G.E.J., Dipogiso K., Phonchi-Tshekiso N.D., Stone L.S. and Badimo D. An Analysis of Communities’ Attitudes Toward Wildlife and Implications for Wildlife Sustainability. *Tropical Conservation Science*. January 2020. doi:10.1177/1940082920915603
- Mosugelo D.K., Moe S.R., Ringrose S. And Nellemann C. 2002. Vegetation changes during a 36-year period in northern Chobe National Park, Botswana. *Afr. J. Ecol.* 40 (3): 232–240.
- Mughogho D.E.C. 2001. The impact of elephants on the vegetation in Moremi Game Reserve and surrounding areas. Department of Wildlife and National Parks, Botswana, draft report. Ref # WP/RES 3/1 (7) Pp 120.
- NCONGO 2020. Report of a Community Trust Workshop 2–6 March, 2020 Maun Lodge, Maun, Botswana
- Osborne F.V. and G.E. Parker 2002. Community-based methods to reduce crop loss to elephants: experiments in the communal lands of Zimbabwe. *Pachyderm* 33: 32–38.
- Sellier J. and Page B. 2014. Dry Season Fixed-Wing Aerial Survey of Large Mammals in The Northern Tuli Game Reserve and Mapungubwe National Park and of Elephants in the Greater Mapungubwe Trans-frontier Conservation Area, Botswana, South Africa and Zimbabwe, August 2014. Unpublished report.
- Sommerlatte M.W.L. 1976. A Survey of Elephants in Northeastern Botswana. UNDP/FAO Project Bot 72/020, Field Document No.2, Government Printer, Gaborone.
- Songhurst A. 2010. Dry Season Elephant Population Report for the eastern Okavango Panhandle, NG10, NG11, NG12 and NG13, July 2010. Technical Report, Botswana. 24
- Songhurst A. 2016 Dry Season Elephant Population Report for the eastern Okavango Panhandle, NG10, NG11, NG12 and NG13, October 2016. Technical Report, Botswana.
- Songhurst A. 2019. Dry Season Elephant Population Report for the eastern Okavango Panhandle, NG10, NG11, NG12 and NG13, November 2019. Technical Report, Botswana.
- Thouless, C.R., Dublin H.T., Blanc J.J., Skinner D.P., Daniel T.E., Taylor R.D., Maisels F., Frederick H.L. and Bouché P. 2016. African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN/SSC African Elephant Specialist Group. IUCN, Gland, Switzerland.

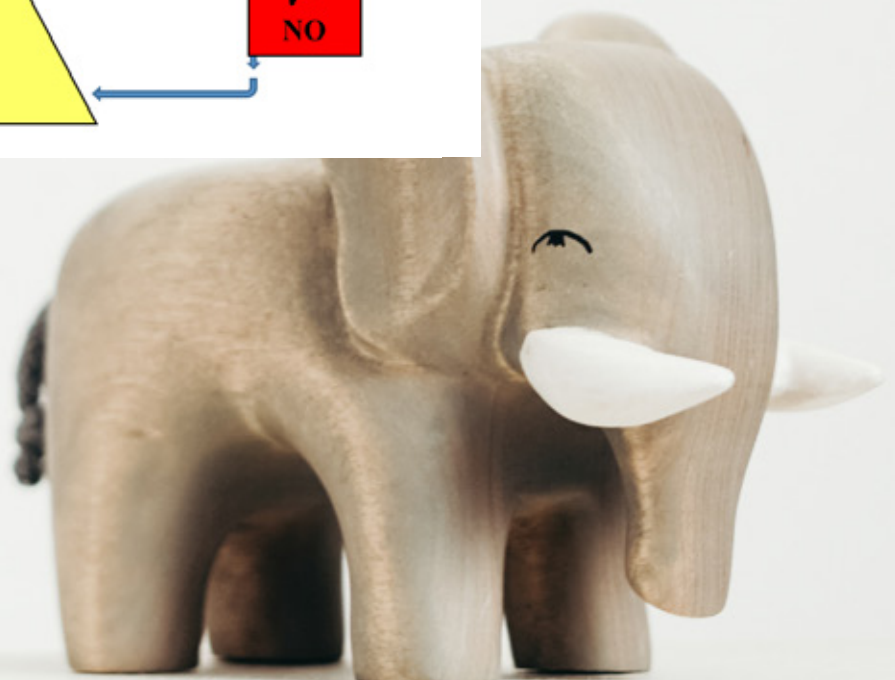
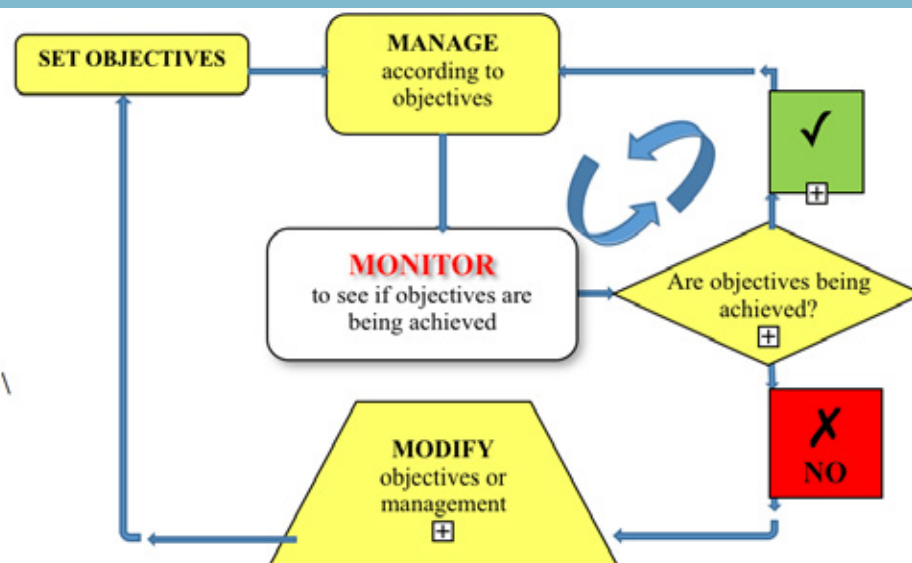


A Adaptive Management

In conservation and other fields, management is the tool by which policy goals are achieved. Although natural systems are complex, affected by many causative factors whose influences are poorly understood, management still has to proceed if goals are to be met. In such circumstances, adaptive management is appropriate.

This is a process whereby success of management—in terms of bringing the system closer to the desired objective—is measured by the results of monitoring which takes place after each intervention. The findings then motivate decisions about the next management action, and the cycle continues until the goal is reached. Adaptive management is both effective in reaching goals in an unpredictable system and in learning more about the system at the same time. Monitoring, therefore, plays a central role in the process of goal-oriented management. Without it, conservation is unlikely to succeed.

The adaptive management process is summarised in the following flow chart:



Management Oriented Monitoring Systems (MOMS)

Where monitoring systems are designed by academics or others remote from the protected areas, field staff may be expected to collect data which are handed over for analysis. They have no part in deciding what should be monitored and findings generated at a higher level seldom find their way back to the protected areas. Such a situation results in a lack of motivation and ultimately an unsustainable monitoring system.

A sustainable system must avoid these pitfalls. One such system known most widely as the Management Oriented Monitoring System (MOMS) which was developed in Namibia for communities who had been given authority to manage the wildlife in their land. This was so successful that it was introduced to protected area management authorities and rural conservancies in a number of countries including Botswana, Malawi, Mozambique, Madagascar, Zimbabwe, Zambia and even Cambodia.

The MOMS has been implemented by divisions of DWNP for many years. The principles of the system are as follows:

1. **Managers in the field decide what to monitor (or are involved in this decision process) to support their management**
2. **Monitoring and basic analysis is done at local level**
3. **Reporting is simplified or condensed according to requirements at higher levels**
4. **It is entirely paper based (although data can be copied to electronic equipment)**

There a number of advantages in using the MOMS:

1. Being paper based, the system is not vulnerable to changes in storage media or changes in monitoring fashions so long-term information can be archived and used for trend analyses. However, it can easily support or be combined with electronic monitoring systems such as SMART, Wildlife ACT and others.
2. It can be designed to monitor almost anything
3. There is very little technical support needed
4. It does not require a high level of technical knowledge or analytical skill
5. Information can be saved on paper and “backed up” by electronic means and databases
6. It's sustainable

MOMS modules can be designed to monitor anything at varying levels of sophistication from collecting presence/absence of animals to vegetation quality.

Aerial Surveys

For many years, aerial surveys have been used in Botswana to monitor the size and distributions of elephant population, other wildlife species and domestic livestock. To ensure sustainability, aerial survey designs used by DWNP have been simplified and may be criticised for the possibility of some bias. Nevertheless, they are repeatable and comparable and comply broadly with international survey standards for aerial surveys.

Because of differences in conditions, possible biases and changes in wildlife population sizes and distributions, and despite best efforts, there can be considerable differences in estimates from year to year.

One of the most important uses of aerial survey information is for monitoring population trends and for allocating hunting quotas in different areas. Survey data are not precise enough to be used for adjusting annual quotas—this must be done from data on ivory weight and offtakes (from problem animal control, poaching and hunting).

To provide the best data, aerial surveys should:

1. be conducted as often as possible to demonstrate population trends—at least every 2 years
2. cover the same areas so that the estimates are comparable
3. cover the entire elephant range within Botswana
4. be conducted, if possible, both in wet and dry seasons—even if in alternating years
5. Provide estimates for each CHA where hunting takes place. These may have to be averaged over several years to obtain stable estimates.

Quota Setting

As stated in 3.2 above, quotas are based on a number of parameters. Activities related to quota setting are as follows:

- Quotas are to be set annually by a fixed date through a participatory mechanism.
- A report of findings of the quota-setting committee and quotas set must be produced and circulated annually
- The annual CITES quota is to be based on the total population of elephants in all hunting blocks and must not exceed 0.5% of that estimated population. Numbers of animals on quota should be reduced by the number of HEC animals removed on PAC operations and by the estimated number lost to poaching (from estimated numbers of carcasses from aerial surveys and from PIKE)
- Population estimates are to be based on the latest aerial survey
- The quota must be divided among individual hunting blocks according to the estimated proportion of the population in each block (from aerial surveys)
- Block estimates are to be based on a running mean of the previous four aerial survey estimates and local knowledge, as appropriate
- The final % offtake is to be adjusted with the objective of raising or decreasing mean tusk weight using the trend of mean tusk weight to date
- A database of tusk parameters must be kept, with one elephant per record. Each record is to contain the following fields:
 - Permit number
 - CITES number
 - Date hunted
 - CHA name
 - Sex of animal
 - Age of animal
 - Left tusk mass (kg)
 - Right tusk mass (kg)
 - Jaw photograph number
 - Tusk photograph numbers
 - Additional optional fields for other measurements taken
- Identification (permit) number to be marked on each tusk as well as the words, “left” and “right”
- Tusks are to be photographed
- Tusks are to be weighed to the nearest 250gms (using a calibrated platform scale) before and after drying
- Jawbone is to be boiled, cleaned, prepared, labelled with the same ID as the tusks and photographed. To be submitted with the tusks. Photos to be sent electronically to the designated authority
- The season’s offtake must be analysed to show, by CHA, an ordered table of all animals with age, weight of tusks, mean tusk masses and standard deviation overall
- A report must be submitted to the quota committee and be available for inspection and auditing as appropriate

Human-Elephant Conflict Mitigation & Reduction

Communities within the elephant range have to deal with the damage to their livelihoods wrought by elephants. In most places, people feel that there are too many elephants.

Apart from strategies to improve tolerance for elephants by people living within the range through CBNRM activities, direct mitigating measures can be implemented (Hoare 2001). According to community stakeholder workshops, a variety of options include the following:

- **Water provision and protection** – Many HEC incidents are related to water resources. Elephants destroy water reservoirs, pumps and pipes and compete with livestock at waterpoints. Water supplied specifically for elephants attracts them away from human habitation. Existing water points for humans and livestock should be protected from elephants using barriers.
- **Barriers & Deterrents** – The IUCN African Elephant Specialist Group (AfESG) and numerous researchers throughout Africa have conducted studies of HEC which compare methods for protecting crops and infrastructure from elephants. These include electric fencing, sharp rock walls, trenches, chili fences, chili bombs, lights, crackers and other noise generators and killing offending animals. Some of these options incur considerable costs (e.g. electric fences) that are beyond the inhabitants and some require maintenance (e.g. ditches, electric fences, etc.) that inhabitants are not prepared to undertake.
- **Compensation** – The Government of Botswana pays compensation for elephant damage

LAW ENFORCEMENT

Poaching can be reduced by protecting borders, employing suitable technology and arresting poachers. It also requires coordination with neighbouring countries and regulating domestic trade to prevent trafficking and laundering of illegal ivory (Jachmann 1998).

There are numerous options for combating poaching. These include patrolling (on foot, vehicle or by air), drones, community cooperation and intelligence gathering. The DWNP Anti-poaching division employs these methods in conjunction with the anti-poaching activities of the BDF, BPS and DIS.

- **Patrols** – To reduce poaching elephants there should be adequate staff densities and numbers of patrol days. Air patrols are useful for finding poaching incidents (carcasses) and poachers' camps. Anti-poaching teams should be deployed on foot patrols in areas selected either randomly or on the basis of information from air patrols or intelligence.
- **Investigation** – Investigation is an important part of anti-poaching and law enforcement, taking place in towns and villages. Information about illegal activities can be obtained by persuading poachers that have been arrested, poachers, dealers, other informers and members of the public to provide information.
- **Incentive Systems** – Obtaining information on poachers through informers requires an incentive scheme. Cash payments are made to informers and, if possible, anti-poaching teams for arrests, confiscation of firearms and trophies or for information that eventually leads to these.



MONITORING OF POACHING

Monitoring illegal activity, anti-poaching effort and outcome enable managers to direct efforts to priority areas and to evaluate the effectiveness of the anti-poaching activities.

The CITES Monitoring the Illegal Killing of Elephants (MIKE) programme evaluates relative poaching levels based on the Proportion of Illegally Killed Elephants (PIKE). Data are collected in a standard format from designated areas within the elephant range. The data are submitted to Regional MIKE coordinators for analysis (Figure 11). The PIKE is calculated as the number of illegally killed elephants found divided by the total number of elephant carcasses encountered by patrols or other means, aggregated by year for each site. PIKE values of 0.5 or more are considered unsustainable—that is more elephants die from poaching than from natural causes.

Data from aerial surveys can be used to describe long term population trends as long as methodologies are kept unvaried over time. However, estimates of numbers are not usually precise or accurate enough to be used as an early warning of significant declines. Even examining the numbers of carcasses counted during surveys is inadequate. However, carcass ratio (in reality a percentage and not a ratio) and especially the 1+2 category ratio (indicating mortality in the survey year) is a very useful objective means of monitoring poaching. This is done by dividing the number of carcasses by the sum of the number of carcasses and live animals.



G . Monitoring of Poaching (CHOBE) Cont...

MIKE SITE	YEAR	TOTAL CARCASSES	ILLEGAL CARCASSES
Chobe	2000	5	2
Chobe	2001	51	14
Chobe	2002	79	10
Chobe	2003	104	3
Chobe	2004	145	5
Chobe	2005	69	16
Chobe	2006	95	7
Chobe	2007	108	17
Chobe	2008	119	6
Chobe	2009	120	16
Chobe	2010	37	9
Chobe	2011	42	14
Chobe	2012	351	29
Chobe	2013	156	2
Chobe	2014	242	23
Chobe	2015	198	10
Chobe	2016	121	0
Chobe	2017	101	22
Chobe	2018	108	38
Chobe	2019	23	2

Figure 11 MIKE data for the only Botswana MIKE site (Chobe NP) (Source DWNP and CITES MIKE portal <https://cites.org/eng/prog/mike/index.php/portal>)



ETHICS

According to the Government's Hunting and Escort Guidelines, hunting in Botswana is guided by the Wildlife Conservation and National Parks Act No 28 of 1992 and the Hunting and Licensing Regulations of 2001. All hunts must be conducted in the presence of an experienced professional hunter and accompanied by a hunting Escort Officer or Community Escort Guide.

Elephants must be hunted according to the best practices of the safari hunting industry using only those weapons known to cause least suffering.

To avoid disruption of elephant social hierarchies and the leaving of orphaned offspring, no adult female will be shot from a family group. When lethal removal of females is deemed necessary, in line with the provisions of this plan, this will be carried out by trained professionals who will remove entire family groups. Similarly, live capture for translocation will not target individual animals, but will take entire groups.

Removal of elephants in the wild for captivity is only considered in exceptional circumstances where "it is considered that a transfer to ex-situ locations will provide demonstrable in-situ conservation benefits for African elephants". The live capture of juveniles from family groups is therefore not advised.



APPENDIX II – BACKGROUND INFORMATION

A. BOTSWANA ELEPHANT MANAGEMENT PLAN 2021 – 2026

The process to develop the Botswana Elephant Management Plan 2021 – 2026 (BEMP) began in June 2018 with national consultation workshops taking place in Nata, Selebi Phikwe, Kasane, Ghanzi, Seronga and Maun. Technical workshops were subsequently held from 24 June to 24 July 2018. The process to develop the BEMP has been a multi-stakeholder consultative process including communities living in the elephant range, community organisations engaged in CBNRM, and the non-state actors—safari operators, NGOs, IGOs, academic institutions, and independent researchers—who are working or have worked in Botswana.

The BEMP takes on board the changes and lesson learned over the last twenty years of elephant conservation. Many factors have changed over the years including the Botswana elephant population almost tripling since 1990. Moreover, the BEMP addresses regionally accepted elephant management strategies and priorities (e.g. KAZA) and draws on elephant management plans from other elephant range states with similar track records of successful elephant conservation. Adaptive management forms the basis of implementation and is used for determining effectiveness of the BEMP.



B. PREVIOUS ELEPHANT MANAGEMENT PLANS

The Conservation and Management of Elephants in Botswana Plan (CMEBP) 1991 – The objectives of the 1991 plan included the sustainable use of elephants and to maintain their numbers at their 1990 level of about 55 000 animals. Maintenance of woodlands and biodiversity was an important objective. Resolving HEC was also a priority.

Multiple use objectives were achieved but HEC continued at an unacceptable rate, elephant populations were not kept at their 1990 levels nor were woodlands maintained at their 1990 status.

The National Policy and Strategy for the Conservation and Management of elephant in Botswana 2003 – This document examined issues and options for elephant management on the basis of wide consultations with stakeholders both within the elephant range and countrywide. Elephant management objectives varied in different parts of the country according to the impacts of elephants on livelihoods and habitats, on aesthetic values and on scientific information. These ranged from laissez-faire in areas where elephants were the primary wildlife attraction to complete removal where their impact on livelihoods and habitats were considered excessive. HEC mitigation was an important objective.

C. Domestic Legislation and Policies Related to Elephant Conservation

Wildlife Legislation

The *Wildlife Policy of 1986* – This Policy was reviewed in 2013 and is intended to guide and support future wildlife conservation and utilisation activities. The policy upholds wildlife as a valuable land-use option, confers better protection of wildlife resources, aims to reduce human wildlife conflict, upholds animal welfare and provides incentives for management of wildlife resources by the public.

The Wildlife Conservation and National Parks Act, first enacted in 1992 (Chapter 38:01, amended in 1993 and revised in 1996) – This Act remains key in protecting

Botswana's wildlife resources. The law provides for the conservation and management of wildlife through the establishment of protected areas and game farms, it includes schedules to differentiate between protected animals and partially protected animals, and it provides for control in hunting through the issuing of hunting quotas and licences. The Act also domesticates provisions emanating from CITES. Enforcement of the implementation of the Wildlife Conservation and National Parks Act is achieved through two sets of regulations: (i) National Parks and Game Reserves Regulations of 2000 and (ii) Wildlife Conservation (Hunting and Licensing) Regulations of 2001.



Forestry Legislation

Forest Policy of 2011 – This Policy defines basic principles, objectives, strategies and action plans which provide guidance and facilitation in the management of forests and range resources through conservation, development and sustainable use to meet social, cultural, economic, environmental and ecological needs of present and future generations.

The Forest Act – This Act first enacted in 1968, is the principle legislation in Botswana to manage areas of forest and regulate the harvest and use of forest products. The Act provides for better regulation and protection of forests and forest produce but it only focuses on areas designated as forest reserves and state land. A revision of the Act will be merged with the Forest Act (1968), the Agricultural Resources Conservation Act (1974) and the Herbage Preservation (Fire Prevention) Act of 1977.

CUSTOMS LEGISLATION

The Customs and Excise Duty Act of 1970 (Act No. 22 of 1970; Amended up to Act No. 31 of 2004) – This Act provides guidance for customs-related matters relating to all products, including wildlife.

PENAL CODE

The Penal Code, 1964 (Law No. 2 of 1964; amended up to Act. No. 14 of 2005) – This Law makes provisions with respect to procedure and evidence in criminal cases.



D. International Conventions, Agreements and Policies

Botswana is a member and party to various organisations and agreements:

- The Southern African Regional Police Chief Council Organisation (SARPCCO)
- The World Customs Organization since 25 August 1978, with the relevant government authority being the Botswana Unified Revenue Service (BURS)
- A bi-lateral trade agreement with neighbouring Zimbabwe
- Southern African Customs Union Agreement with Lesotho, Namibia, South Africa and Swaziland
- The Eastern and Southern Africa Anti-Money Laundering Group, which is associated with the Financial Action Task Force (FATF)
- The UN Convention against Transnational Organized Crime
- The UN Convention against Corruption
- Party to the Convention on Biological Diversity
- Party to the Ramsar Convention on Wetlands
- The African Wildlife Consultative Forum (AWCF)
- The World Summit on Sustainable Development (WSSD)
- The New Partnership for Africa's Development (NEPAD)
- The Southern African Regional Police Chief Council Organisation (SARPCCO)
- The World Customs Organization since 25 August 1978, with the relevant government authority being the Botswana Unified Revenue Service (BURS)
- A bi-lateral trade agreement with neighbouring Zimbabwe
- Southern African Customs Union Agreement with Lesotho, Namibia, South Africa and Swaziland





E. INTERNATIONAL COOPERATION

To address elephant management challenges, Botswana and other elephant range states cooperate through the African Elephant Action Plan that was approved at the CITES 15th Conference of the Parties (CoP 15) in Doha, Qatar in 2010.

Botswana has hosted a number of international conferences to address and reach agreements on elephant management challenges:

- 2013 African Elephant Summit to discuss the growing illegal ivory trade and its impacts on African elephant populations
- 2015 Conference on Illegal Wildlife trade to reach agreements to combat wildlife crimes by strengthening legislation and reducing demand for ivory
- 2019 KAZA African Elephant Summit to discuss HEC, illegal and legal trade.

F. TRANSBOUNDARY CONSERVATION AREAS

KAZA is situated in a region where the international borders of five countries converge. It includes a major part of the Upper Zambezi basin and the Okavango basin and Delta. The zone includes the Kavango and Zambezi (formerly Caprivi) regions of Namibia, the south-eastern corner of Angola, south-western Zambia, the core elephant range in the north of Botswana and western Zimbabwe. The centre of this area is at the confluence of the Chobe and Zambezi Rivers where the borders of Botswana, Namibia, Zambia and Zimbabwe meet. It incorporates Hwange National Park and the Victoria Falls in Zimbabwe, and the Okavango Delta and Chobe National Park in Botswana, Makgadikgadi/Nxai National Park and Moremi Game Reserve.

The initiative was created in cooperation with Peace Parks Foundation and the World Wide Fund for Nature. It developed from the Okavango–Upper Zambezi International Tourism Initiative (OUZIT) and the “Four Corners” Trans-boundary Natural Resource Management initiative.

A strategic planning framework was developed for elephant management and conservation in KAZA during a workshop that took place in Kasane in August 2018. Participants formulated a strategic planning framework with five objectives:

1. Objective 1 – Facilitate the development of an integrated land use planning process to secure long-term ecosystem integrity and connectivity of KAZA's elephant population,
2. Objective 2 – Maintain and manage KAZA's elephants as one contiguous population,
3. Objective 3 – Promote and support co-existence of humans and elephants for ecological, social and economic benefits,
4. Objective 4 – Reduce the illegal killing and trade in elephants and elephant products, and
5. Objective 5 – Establish a high-level decision-making process on which to build the planning framework for conserving KAZA's elephants.





THE WILDLIFE Based Economy



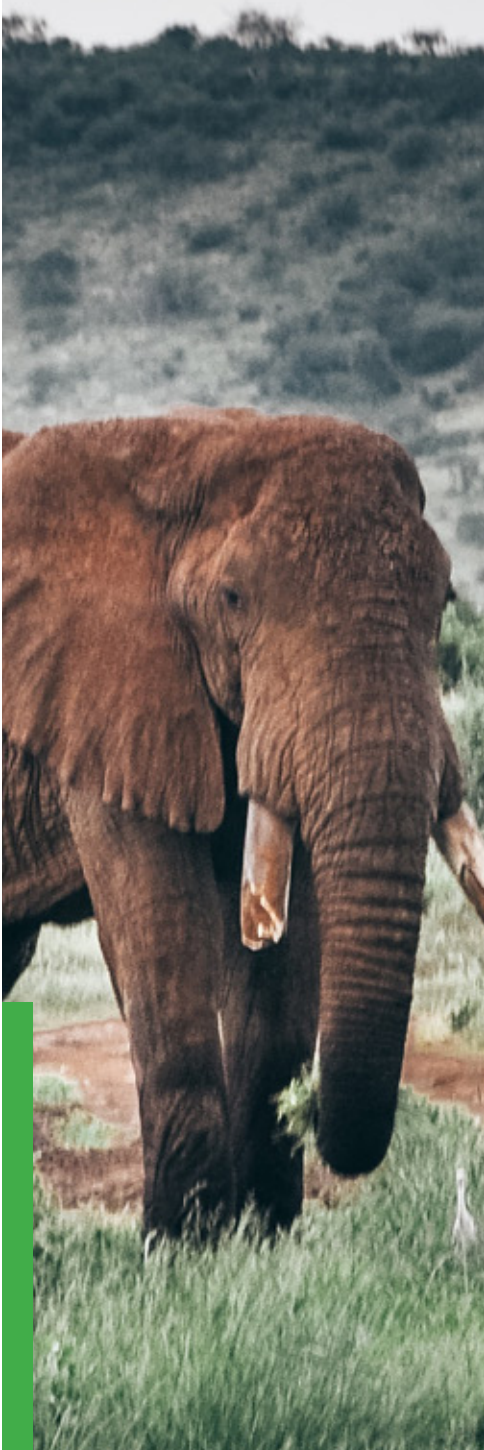
Although Botswana's GDP is dominated by agriculture (2%) and industry (30%), the tourism industry has diversified the economy, and, growing at 3.4%, it now contributes 11% to the GDP. The increase in international tourism receipts (% of total exports) increased from 7.3% in 1995 to 13% in 2016.

Tourism provides 8.9% of the total formal employment although higher paying management level positions have been filled by expatriate workers (Mbaiwa 2017b).

Most of Botswana's tourist attractions are its National Parks and Game Reserves and their wildlife inhabitants which bring large numbers of international visitors to see them. There are concerns from local people that while tourism has led to considerable infrastructure and economic development, the negative impacts of tourists on wildlife and the environment can be significant.

Numbers of international safari hunters are smaller than numbers of photographic tourists. Their economic contribution may, however, be significant as they are required to pay not only for hunting licences but also quota fees, costs of taxidermy, professional hunter as well as the costs normally incurred by photo tourists. Their impacts on the environment are lower and are not considered biologically significant.

Mbaiwa (2017a) analyzed the income of Communities through safari hunting and wrote: "Prior to the hunting ban, communities involved in safari hunting generated huge sums of money annually through the sale of hunting quotas to professional hunting outfitters. In community areas 2008, safari hunting generated P7, 382,097 while photographic tourism generated only P 2,374,097 (Johnson, 2009 in Mbaiwa 2017). Between 2006–2009 safari hunting by communities generated P 33, 041,127 while photographic tourism generated only P 4,399,900 (Johnson, 2009). Data obtained



from DWNP indicate that in 2011/12, about P35, 517, 534 was generated by CBNRM projects in Botswana. Safari hunting by communities generates almost two-thirds of the tourism revenue compared with photographic tourism which generates only a third of community revenue (Johnson 2009; Mbaiwa 2015). Income generated by communities from safari hunting is used to support livelihoods in respective communities (Arntzen et al., 2003; Mbaiwa and Stronza, 2010). In addition, the BWMA (2001) argues that 49.5% of revenue from the safari hunting industry is used in the local district, 25.7% at the national level and only 24.8% was being paid overseas mainly in the form of agents' commissions and profits. Conversely, only 27% of photographic tourism revenue is being retained within Botswana while the rest is leaked outside the country (Barnes, 1998). In this regard, BWMA argues that safari hunting benefits local communities more than photographic tourism."

A major study done by Mead (2001) put the gross economic value of the safari hunting industry in Botswana at about US\$10 million. Martin (2008) estimated that this value has increased to about US\$40 million using the same parameters of Mead (2001).

The nature of the industry changed considerably between 2001 and 2008 mainly because of the larger quota of trophy elephants available (330 in 2008 versus 180 in 2000) and by the marketing changes forced upon safari operators to be able realize the value of the quota.

About 88% of the value generated in Botswana's wildlife sector is from land occupied by elephant (Barnes 2001; Mead 2001, Martin 2008). However, the proportion of economic value in the wildlife sector attributable to elephant is difficult to determine. Excluding citizen hunting, elephant values have been confined to tourism (safari hunting, and non-consumptive wildlife viewing). It has been suggested that elephant contributed around 33% to the value of safari hunting in Botswana in 2000 and about 60% in 2008.

APPENDIX III – MONTHLY HUNTING RETURN FORM

The following form is designed for monitoring tusk weight and must be completed by safari operators following each hunt. These are minimum requirements for monitoring trends in trophy quality. If practical, an additional column should be added for the measurement of circumference at lip level

Elephant Trophy Hunting Monthly Return Form (complete one row per animal)

[illegible]

APPENDIX IV

TERMS OF REFERENCE FOR THE NATIONAL ELEPHANT CONSERVATION AND MANAGEMENT COMMITTEE AND THE NATIONAL ELEPHANT COORDINATOR



A) Terms of Reference for the National Elephant Conservation and Management Committee (Draft)

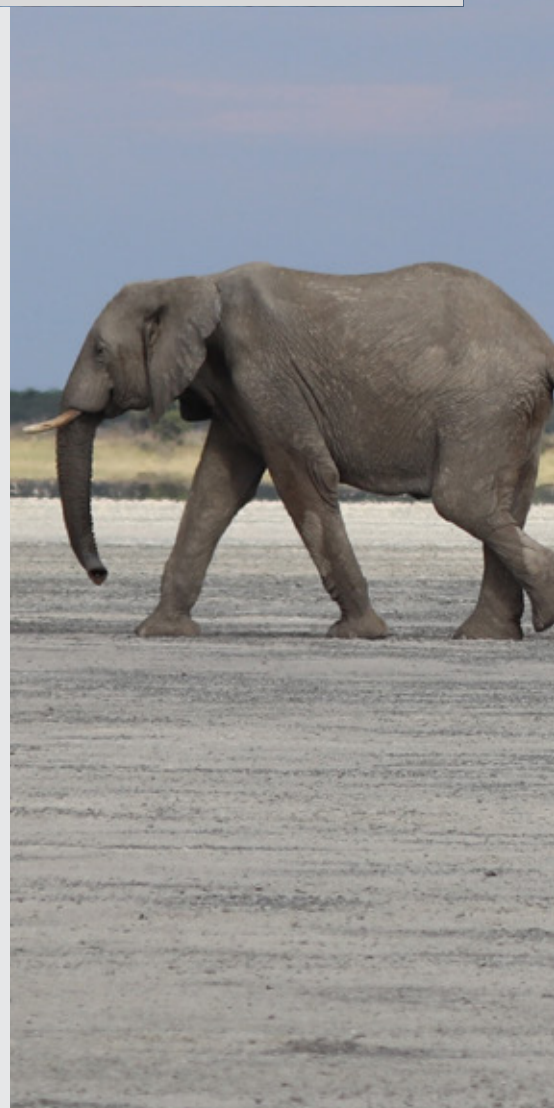
Function: To annually review the Action Plan for Elephant Management and Conservation in Botswana and progress in implementing the Action Plan; to review budget and policy decisions by the Elephant Coordinator; to guide the Ministry of Environment, Natural Resources, Conservation and Tourism and its Department of Wildlife and National Parks to assume overall executive responsibility for elephant conservation and management in Botswana.

Role of Individual Committee Members : The role of the individual members includes:

- Understanding the strategic implications and outcomes of initiatives being pursued through the Action Plan Outputs;
- Appreciating the significance of the Action Plan's implementation for major stakeholders and for the future of elephant conservation;
- Being committed to and actively involved in, implementing the most efficient and effective Action Plan;
- Being willing to suggest changes to the Action Plan to achieve efficiency and effectiveness.

Duties : The Committee's primary responsibilities include:

- Ratifying major technical decisions concerned with elephant conservation and management;
- Developing and implementing elephant policy;



- Ensuring the successful implementation of all required actions;
- Advising the Elephant Coordinator and DWNP on sourcing of funds;
- Monitoring funding, expenditure and effectiveness.

Composition : The members of the National Elephant Management Committee include:

- Director DWNP (Chair);
- Elephant Coordinator (Secretary); Representatives of DWNP, MENT, CBOs, Botswana Police, Botswana Defence Force, DIS, Ministry of Agriculture and Food Security, Ministry of Land Management, Water and Sanitation Services, HATAB, BOGA, NGOs, Independent researchers and BWPA.

Time Frame:

The Committee will meet at least twice a year, and can be called upon to meet more frequently as the need arises.

Minutes and Meeting Papers:

Minutes will be kept by the Elephant Coordinator. Minutes will be circulated within one week of Committee meetings. Resolutions and action points will be kept by the Elephant Coordinator. Actions may be taken without a meeting by a signed unanimous consent circulated, compiled, and maintained by the Elephant Coordinator.

Quorum Requirements:

A quorum exists when [75%] of the Committee members are present.

B) TERMS OF REFERENCE FOR THE NATIONAL ELEPHANT COORDINATOR (DRAFT)

Function : To coordinate elephant management in Botswana; to work with stakeholders including the National Elephant Committee, communities, private landowners, safari operators, NGOs and independent researchers

Duties : The Elephant Coordinator's duties include:

- Coordinating major technical decisions concerned with elephant conservation and management;
- Developing and implementing elephant policy;
- Ensuring the successful implementation of all required actions;
- Perform the duty of Secretary of the National Elephant Committee;
- Liaising with stakeholders;
- Collecting, collating and disseminating required reports under the Action Plan.









CONTACTS

The Director

Department of Wildlife and National Parks
Headquarters
PO BOX 131
Gaborone Tel: 3971405 Fax: 3912354
Email: dwnp@gov.bw

Parks and Reserves Reservation Office

PO Box 131
Gaborone Tel: 391 1405 Fax: 318 0774
Email: dwnpreservations@gov.bw

The Principal

Botswana Wildlife Training Institute
PO Box 368
Maun Tel: 686 0376 Fax: 686 3049

Regional Wildlife Officer

Kweneng District
Department of Wildlife and National Parks
PO Box 93
Molepolole Tel: 592 0349 Fax: 592 0120

Regional Wildlife Officer

Central District
Department of Wildlife and National Parks
PO Box 679
Serowe Tel: 463 0443 Fax: 463 5935

Regional Wildlife Officer

Ngamiland District
Department of Wildlife and National Parks
PO Box 11
Maun Tel: 686 0368 Fax: 636 0053

Regional Wildlife Officer

Chobe District
Department of Wildlife and National Parks
PO Box 17
Kasane Tel: 625 0486 Fax: 625 1623

Regional Wildlife Officer

Ghanzi District
Department of Wildlife and National Parks
PO Box 48
Ghanzi Tel: 659 6323 Fax: 659 6466

District Wildlife Officer

Kgalagadi District
Department of Wildlife and National Parks
PO Box 4
Tsabong Tel: 6540280 Fax: 654 0221

