Republic of Botswana

MINISTRY OF ENVIRONMENT, NATURAL RESOURCES, CONSERVATION AND TOURISM (MENT)

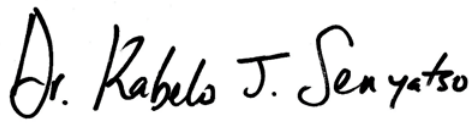
Non-detriment findings for *Loxodonta africana* (African Elephant) Controlled Hunting in Botswana, and its assessment against the *IUCN SSC "Guiding principles on trophy hunting as a tool for creating conservation incentives. Ver. 1.0. IUCN SSC (2012)"*

DEPARTMENT OF WILDLIFE & NATIONAL PARKS (DWNP)

Gaborone, Botswana. June 2021.

APPROVAL

These Non-detriment findings for *Loxodonta africana* (African Elephant) Controlled Hunting in Botswana and its assessment against the *IUCN SSC "Guiding principles on trophy hunting as a tool for creating conservation incentives. Ver. 1.0. IUCN SSC (2012)"* have been reviewed ad approved by the Director of the Department of Wildlife and National Parks under the Ministry of Environment, Natural Resources Conservation and Tourism, Government of Botswana.



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Dr Kabelo J. Senyatso
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1-June-2021
Date: ……..

Summary of findings

1. The Elephant population of *Loxodonta africana* (African Savanna Elephant) of Botswana is included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species.

2. Botswana uses export quotas, as recommended in Resolution Conf. 14.7 (Rev. CoP15) on "Management of nationally established quotas", to effectively meet the requirement of CITES to make a non-detriment finding (NDF) to ensure that the species is maintained throughout its range at a level consistent with its role in the ecosystems in which it occurs and has informed the CITES Secretariat of its nationally established export quota for sport-hunted African Elephant.

3. Importantly, national hunting quotas can differ from CITES Export quotas. In Resolution Conf. 14.7 (Rev. CoP15) the CITES Parties recognized the linkage between export quotas and NDFs and adopted guidelines to manage these quotas. In particular, they agreed that an export quota system is a management tool, used to ensure that exports of specimens of a certain species are maintained at a level that has no detrimental effect on the population of the species. The setting of an export quota effectively meets the requirement of CITES to make an NDF for species included in Appendix I or II and, for species in Appendix II, to ensure that the species is maintained throughout its range at a level consistent with its role in the ecosystems in which it occurs. Resolution Conf. 14.7 (Rev. CoP15) further recognizes that *"In the context of CITES, an annual export quota is a limit on the number or quantity of specimens of a particular species that may be exported from the country concerned within a 12-month period. An annual export quota is not a target and there is no need for a quota to be fully used. It is recognized that there are some cases in which it is likely that the export of specimens removed from the wild will occur after the year in which the removal took place, as happens with hunting trophies".*

4. This document, compiled in accordance with the "*CITES Scientific Authorities Checklist to assist in making Non-detriment findings for Appendix II exports"* https://cites.org/sites/default/files/eng/cop/11/info/03.pdf, details the undertaking of the non-detriment finding (NDF) assessment for the African Elephant and is based on the best current available information. This information is current as of June 2021.

5. African Elephants are long-lived with both sexes living up to 60 years in the wild. The species has a low reproductive rate. It is a generalist species that can utilize a wide range of habitats.

6. Elephants are a facultative partially-migratory species, where only some individuals in a population migrate opportunistically, and not every year. Elephants move between distinct seasonal ranges corresponding to southern Africa's dry and wet seasons. The timing of wet season movements are associated with the onset of rainfall and the subsequent greening up of forage. Conversely, the duration, distance, and the timing of dry season movements vary idiosyncratically. Emigration from Botswana, meant as a dispersal mechanism, plays an important regulatory role in the elephant population dynamics (Craig et al 2011) as illustrated in a simulation model that found that 15% of the population migrates every year. It appears that the recent expansion of elephant in central and southern Botswana shows that 1) Fences are not affecting elephant movements contrary to what was assumed by some authors and 2) South and east-west corridors appears to be extremely functional and probably more elephants are using them rather than moving north.

7. Human-elephant interactions occur in the areas where people coexist with elephants. It happens in the communities neighboring core wildlife protected areas. Since the beginning of agriculture, elephants took advantage of palatable and easy food resources offered by man. The relationship between humans and elephants has deteriorated since humans have increased their dependence on domesticated herbivores and encroached into elephant habitats. From the point of view of farmers and rural communities, elephants are agricultural pests because of their significant damage to crops and property, difficultness to control, expensive and ineffective control techniques, and interspecific competition with humans for food, space, and water. From an ecological point of view, elephants are agents of ecological restoration (at natural densities) because of their capability in redistributing damaged ecosystem services to human, livestock, and other wildlife species. Through sustainable management, elephants can provide direct and indirect basic ecological, social and economic benefits for local people and wildlife species.

8. The African Elephant is considered a common species within Botswana, with a known range estimated at about 128,000 km^2 as assessed through aerial surveys. Furthermore about 100,000 km^2 of potential range is still to be assessed out of the 581,730 km^2 of the country land. Botswana is one of the few countries in Africa with a confirmed range expansion for elephants. Range expansion has been observed into the west towards Namibia and into south-central Botswana, with notable numbers of elephants observed for the first time in a survey in 2015 in the Central Kalahari Game Reserve. 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 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, although it is now believed to be in excess of 280,000 km^2 especially since the Central Kahalari Game Reserve (52,200 km^2) is now considered permanent range of the species.

9. On the basis of published records, elephant numbers in Botswana reached their lowest levels in the late 1890's when less than 1,000 were estimated. Then there has been a period of at least 70 years in which elephant populations in northern Botswana were less than 10,000.

10. Botswana has by far the largest elephant population of any country in Africa, with approximately 98% of these in the northern part of the country. The reported decline between 2006 and 2016 is ambiguous and may be the result of uncounted elephants, range expansion, seasonal movements into and out of the surveyed area, increased poaching or methodological differences between surveys (Thouless et al. 2016). Elephants in the north of Botswana are part of a larger population stretching into neighboring countries. Elephants, like all wildlife, are unaware of international borders while moving across habitats and ecosystem since millennia, and have been shown to move considerable distances to and from northern Botswana into Namibia and further into Angola and Zambia to the north and Zimbabwe to the east. The Kavango-Zambezi Trans Frontier Conservation Area (KAZA TFCA) 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 about 220,000-240,000 elephants (estimated within the confidence range of aerial surveys) —the largest contiguous population in Africa.

11. The total national wild population is estimated between 120,000 and 160,000 individuals, of which ~98 % are in northern Botswana. Elephant population estimates for other areas are based on recent quantitative data or direct surveys. Data from aerial surveys suggest that this population increased from 1981 to 2006 at a rate of 6% per annum. Because of differences in survey methodology and the fact that they did not cover the entire elephant range, surveys in 2010, 2014 and 2018 are not comparable with previous surveys. In south-central Botswana, 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. 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.

12. Botswana's numbers remain equivocal as the cause for the apparent decline from ~155,000 in 2006 to ~130,000 in 2018 may be due to one or more factors relating to range expansion, emigration, uncounted elephants and/or mis-counted elephants, either too high or too low. In order to remedy the above, KAZA is planning to undertake, in 2022, transboundary coordinated and synchronized wide aerial surveys of elephant (and other wildlife populations) according to standardized methodologies to allow comparability across the KAZA landscape with the underlying principle that management of elephants must be guided by comparable trends and not by one-off surveys and that additional information is required on elephants' movement patterns and demographics together with an assessment of the habitat status across the KAZA TFCA.

13. At the time of drafting this document, IUCN has published, on 25 March 2021, a new Red List Assessment of the African Savanna Elephant (Gobush et al. 2021). The African Savanna Elephant has been listed as Endangered. The assessment is based on a series of assumptions and a model that needs to be critically reviewed; the resulting outputs with elephant numbers in Table 2 of its Supplementary Information appears to be highly incorrect casting doubts on the scientific rigor of the assessment and the practicality of the model used. Botswana disagrees with some of the assumptions and relevant outputs of the IUCN Red list Assessment and do not consider its elephant population as endangered. Botswana is evaluating a series of actions to express and motivate its disagreement with the IUCN Red List Assessment.

14. The major threats to the wild elephants' populations in Botswana are: conflicts with humans, habitat loss and illegal killing. However, none of these threats is leading to a decline of the species in the country. Conflicts between humans and wildlife increased substantially after 2013. This may be a reflection of a reduced tolerance for wildlife during the hunting moratorium that was in place from 2014 to 2019. Habitat loss has not been so severe; there has been a decline in the land area occupied by forests: in 1990 forests (including riparian, typical forest and woodlands) covered about 18,800,000 hectares while in 2015 about 15,727,000 hectares. The major physical contributing factors are unmanaged fires, damage from elephants and human encroachment. The percentage contribution of each factor to the decline is unknown and needs further investigation. Illegal killing of elephants does not appear to be a major issue in Botswana, although in some spots along the borders with neighboring countries there could be some illegal activities.

15. Hunting in Botswana was suspended in 2014. The hunting suspension was implemented contrary to the "principle of consultation" (*Therisanyo*) which is rooted in the democratic ideals of Botswana for citizen participation and inclusiveness in policy discourse. Botswana has always upheld the practice of consultation to afford the general public an opportunity for an open dialogue and mutual respect leading to the crafting of sound policies and strategies. The moratorium, which was enacted without consultation, removed the sense of pride for owning land and natural resources and thus created a perception that locals do not own the wildlife resources (including those in their Controlled Hunting Areas (CHAs)). During the ban, local communities viewed the wildlife as state property, and any costs that arise out of wildlife was attributed to the government and therefore they demanded full compensation for crop damage, livestock predation and loss of human life (Blackie 2019). 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 of these people were formerly reliant on controlled hunting for food, income and employment especially on marginal lands where elephant occur but where lads are not suitable and/or financially viable for photographic tourism. In 2019 the moratorium was lifted and quotas allocated for hunting elephants in 2020. However, due to the COVID 19 pandemic, no hunting took place in 2020.

16. A Nationwide Presidential Cabinet Sub Committee on the Social Dialogue on the hunting suspension was set up in 2018 to review suspension which effected in 2014. The report of the Sub Committee (Republic of Botswana 2018), after extensive countrywide public consultations advised for the lifting of the hunting suspension with a series of recommendations including a priority system for allocation of hunting quotas to Community Based Organizations (CBOs) and Trusts.

17. Botswana's elephant hunting quota allocation is based on several factors as explained in the Botswana National Elephant Management Plan and Action Plan 2021 to 2026. CITES Quotas for 2020 were set to 400 elephants in line with quotas before the hunting suspension (2014). The quotas set for trophy hunting in Botswana from 1996-2013 reached a maximum of 0.23% of the total population in 2013. This is low by any science-based standards where, for years, elephant managers in Africa have typically set quotas around 0.5% of the total population. This accounts for the very high standard of the trophies taken in Botswana over the past 15 years and is a proof of the adaptive management approach taken by the country in allocating quotas over the years.

18. Quotas exceeding 1% of the population are eminently sustainable in biological terms but totally incompatible with the notion of a high-quality elephant tourism hunting safari industry. Botswana could remove in excess of 1,300-1,500 elephants each year without any detriment to a population that is growing at an average rate of 6% each year.

19. The hunting quotas have been and still are extremely conservative and benefits accruing to habitats and rural people justify the removal of a negligible percentage of elephants from the population.

20. The offtakes of elephants in the period 1996–2013 ranged from a minimum of 0.04% to a maximum of 0.27 % 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 limited offtake has never represented a threat to the survival of the species and was unlikely to have had any impact on population trends. A remarkable feature of the Botswana hunting data from 1996-2013 is that the proportions of tusks of different sizes taken in the Controlled Hunting Areas over 15 years of hunting remained constant from year to year. This finding appears highly significant and sheds light on the good management approach while highlighting misinformed beliefs that sport hunting is targeting only older big males.

21. A new Botswana Elephant Management Plan and Action Plan 2021-2026 has been approved on 31 March 2021 and launched on 30 April 2021 by His Honour the Vice-President of the Republic of Botswana. The Elephant Management Plan and Action Plan 2021-2026 aims 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 minimizing their negative impacts on rural livelihoods through three main 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 realization of the full economic potential of elephants and other wildlife resources outside the protect areas through sustainable utilization

22. Hunting of elephant is not allowed in any of the national parks and game reserves and only limited hunting is allowed especially in areas designated as Wildlife Management areas and other managed areas designated as Controlled Hunting Areas (CHAs), effectively ensuring protection of the majority of the wild population which lives outside Protected Areas.

23. Hunting in Botswana is regulated by the Wildlife Conservation and National Parks Act No.28 of 1992 and the Hunting and Licensing Regulations of 2001. Other applicable regulations include the Private Game Reserve Order and some Orders to restrict hunting of some species such as lion.

24. DWNP uses a variety of monitoring systems which include: a) Management Oriented Monitoring Systems (MOMS) which has been implemented by divisions of DWNP for many years, b) 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 criticized for the possibility of some bias. Nevertheless, they are repeatable and comparable and comply with international survey standards for aerial survey, c) Sport-Hunted elephant's trophy database. A database of tusk measurements held by Mochaba in Maun on behalf of the Department of Wildlife and National Parks, is probably unique in Southern Africa. This database includes measurements of all tusks derived from elephant sport hunting in the period 1996-2013 and will be updated regularly. The database formed the basis for two landmark studies done in 2011 "Trophy Hunting, Population Dynamics and Future Management" (Craig et al 2011) and "Age Determination, Age and Size of Hunting Trophies" (Craig and Peake 2011). The elephant trophies database is of major importance in the monitoring of offtakes and also in quota allocation. Quotas can be adapted depending on the analysis of the season's offtake to show, by CHA, an ordered table of all animals with age, weight of tusks, mean tusk masses and standard deviation overall, d) Hunting and Escort Guidelines prescribes that an elephant hunting report shall be completed by the Safari operator/, professional hunter and Escort Guides before and after each hunt. The guidelines require Escorts and operators to fill a form which includes several data regarding for example the conduct of the hunt and the measurements of trophies in order to allow hunting and species monitoring.

25. 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 communities Trusts in Botswana experienced large declines in income, especially those in WMAs with marginal photographic tourism potential, where some Trusts completely collapsed.

26. The Government of Botswana, together with FAO and UNDP, is drafting a significant CBNRM legislation to streamline the CBRNM program that has been run for over twenty years without any guiding legislation. A series of participatory workshops were conducted in 2020 and 2021 and also a CBRNM Practitioner's User Manual is being drafted to support the new legislation. The final draft of the CBRMM Act and the CBRNM User Manual are being prepared and final stakeholders' inputs will be sought by the Ministry of Environment Natural Resources, Conservation and Tourism, before submission to Cabinet and then Parliament, which is expected in November 2021.

27. Hunting is conducted in marginal areas where other land use activities such as photographic tourism or agriculture are not possible or viable. Hunting is beneficial to elephant and their habitats because of the tangible and intangible benefits it provides, such are revenues for Government and Communities, support to Government in monitoring illegal activities and infrastructure development.

28. The NDF assessment (Figure 1) undertaken for the African Elephant demonstrates that sport hunting poses a low and non-detrimental risk to the species in Botswana.

29. The species is managed and the Scientific Authority does not have any current concerns relating to the export of elephant in accordance with Article IV of CITES.

30. Specific guidelines for the hunting of elephant have been developed for the Botswana context in 2019 making use of the most current scientific recommendations such as the countrywide application of a minimum tusk weight and other management provisions. This system is meant to improve the Elephant management in Botswana. Moreover, in order to improve monitoring of Elephant sport hunting, a new mandatory monitoring system is included in the Guidelines.

31. The Scientific Authority has considered the current threats to elephant, including human-elephant conflict (HEC), loss of habitat, illegal activities, and the potential of safari hunting to mitigate those threats. Safari hunting provides a net benefit to the species, it does not pose a threat to the species, and it is not a detriment to the survival of the species. Regulated and controlled safari hunting of elephant in Botswana enhances the survival of the species. The elephant is neither endangered nor threatened in Botswana. Upon considering all the factors illustrated in this document and in accordance with Article IV of CITES and CITES Resolution Conf.16.7, the Scientific Authority of Botswana has advised the Management Authority that the low level of off-take generated by safari hunting is not detrimental to the survival of the elephant in Botswana and enhances its survival and the amount of revenues generated by this low level of off-take are of crucial importance for the conservation of the species also because of the benefits it provides to rural communities.

32. The Scientific Authority does not have any current concerns relating to the export of elephant hunting trophies in accordance with Article IV of CITES.

33. There is one Annex containing an assessment of the Non-Detriment Findings for Elephant in Botswana against the IUCN/SSC Guiding Principles on Trophy Hunting as a Tool For Creating Conservation Incentives. Ver. 1.0. IUCN SSC (2012).

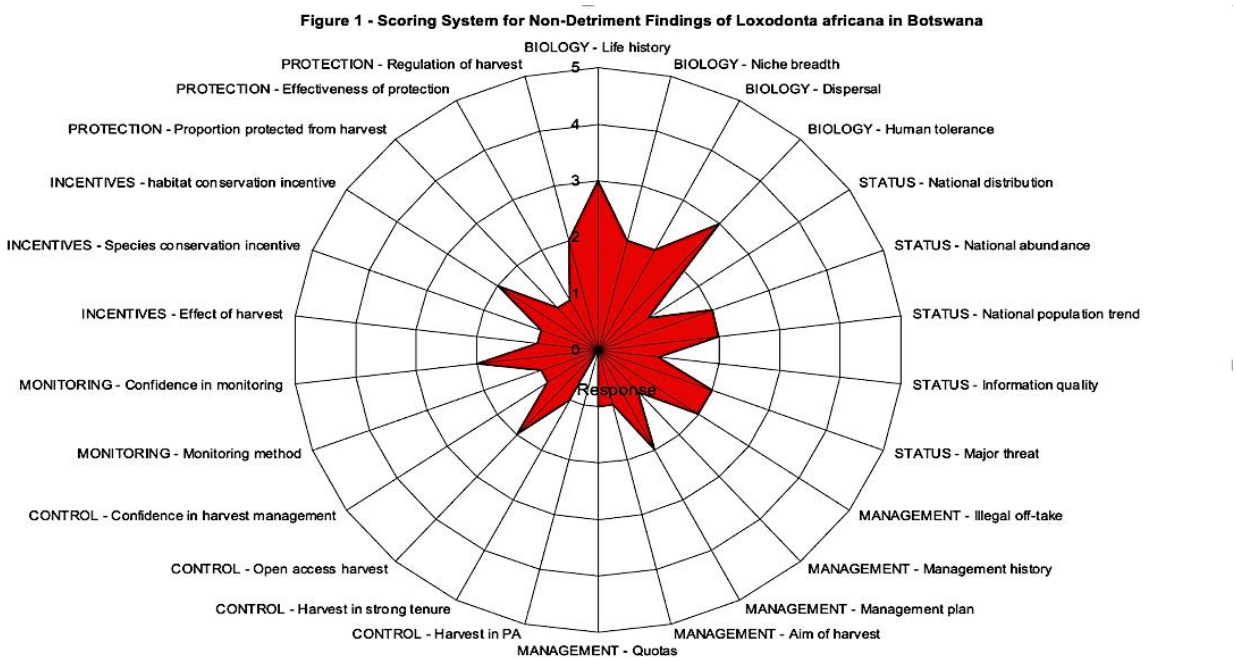


Figure 1: Radar chart summarizing the non-detriment finding assessment for *Loxodonta africana* (African Elephant) in accordance with the CITES NDF checklist (https://www.cites.org/sites/default/files/eng/cop/11/info/03.pdf). Higher scores are indicative of higher risks. The limited area shaded in the radar chart demonstrates an overall low risk of legal harvest to the species

Table 1: Detailed NDF assessment for *Loxodonta africana* (African Elephant) conducted in accordance with the CITES NDF checklist. Scores assigned to each question are indicated in bold text along with detailed explanations/justifications where relevant. Higher scores are indicative of higher risks.

Biological characteristics:		
1. Life history: What is the species' life history?	High reproductive rate, long-lived	1
	High reproductive rate, short-lived	2
	Low reproductive rate, long-lived	**3**
	Low reproductive rate, short-lived	4
	Uncertain	5

African Elephants are generally assumed to live to about 60 years in the wild (Laws 1966). Maximum lifespan has been estimated at 74 years from tooth wear (Lee et al. 2012). With an average generation time close to 25 years (Wittemyer et al. 2013), elephants are very long-lived mammals. The gestation period for elephants is well-established as 22 months (Smithers 1983, Lueders et al.2012). This together with the lactational anestrus period which follows parturition determines the intercalving interval which is highly variable and it is an average of 4 years in Southern Africa. Age of first parturition is, on average, around 10 years (Craig et al.2011) which is in line with several studies reported in Van Aarde et al.2008.

Although elephants may produce calves in any month of the year, most populations have a distinct breeding peak during the rainy season.

Sex ratio at birth is 1:1 with minor variations recorded in the literature, usually in small populations. The overall sex ratio in the population may vary slightly in favor of females depending on the history of management and illegal hunting. Moss (2001) recorded significantly higher mortalities for males (which included anthropogenic mortality) than for females over their entire lifetime.

Elephants have a complex social structure with males and females having equally complex but separate social structures. Male elephants tend to disperse from the natal herd between the age of 10–20 years and establish themselves in a separate bull society (Lee et al. 2011). Between 25 and 30 years of age, males will experience their first stable 'musth', an annual cycle of temporary heightened reproductive state where males seek out females for mating (Poole 1987), with up to 74% of calves fathered by males in musth (Hollister-Smith et al.2007).

A Rapid Demographic Assessment to assess the age structure as an indicator of harvesting pressure on a population (Jones et al. 2018) is being conducted by Amo Barungwi (a DWNP staff member), (in prep.) in selected areas of high-density elephants (Chobe Riverfront, Savuti-Linyanti Area, parts of Moremi Game Reserve, and part of Nxai-Makgadikgadi National Park) in Northern Botswana (Figures 2 and 3). The preliminary results showed a population increase with an 8% calf recruitment rate (the proportion of calves under one year old). The population is made of 68.9% of sexually mature individuals.

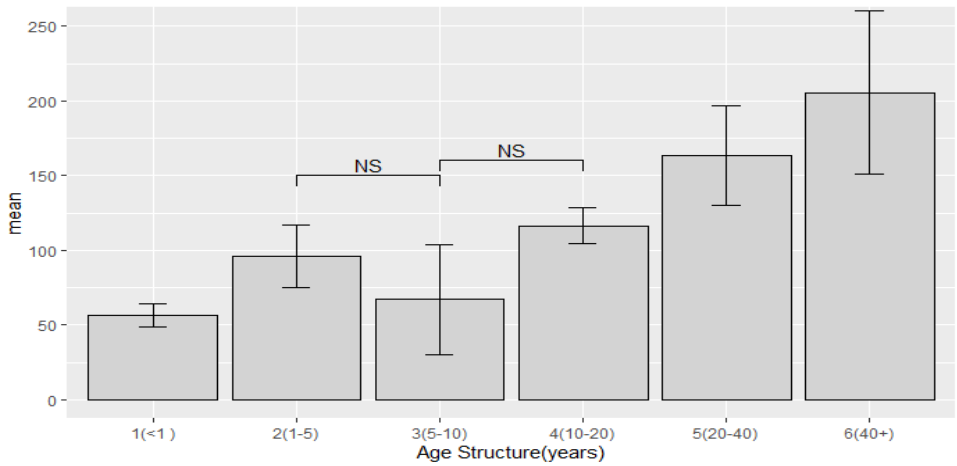


Figure 2. ***Showing a growing population based on the age classes that increase from age class 1 to 6. There is a non-significant decrease of individuals observed in age class 3(5-10 years). (Source: Amo Barungwi-DWNP in prep.)***

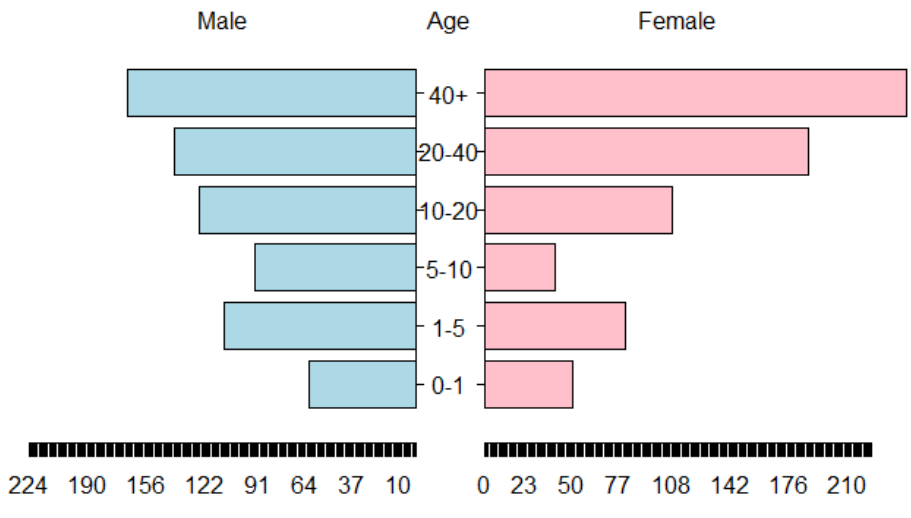


Figure 3. Age-sex structure (Source: Amo Barungwi-DWNP in prep.). There were more females observed than males in the upper classes. It could be due the sexual segregation of habitat use in northern Botswana elephants (Stokke and Du Toit 2002; Evans and Harris 2012).

2. Ecological adaptability: To what extent is the species adaptable (habitat, diet, environmental tolerance etc.)?		
	Extreme generalist	1
	Generalist	**2**
	Specialist	3
	Extreme specialist	4
	Uncertain	5

The African elephant is classified as a keystone species as it is critical to the integrity of the ecosystems it occupies. It influences a variety of factors in these ecosystems that include, but are not limited to, canopy cover, seed dispersal and various plant and animal species distributions. In addition to being classified as mixed feeders, elephants are water-dependent and the location and availability of water affects the extent and intensity at which elephants make use of vegetation (Roever et al.2012).

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 Acacia spp. 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 recognized in northern Botswana since the late 1960s. Significant changes have been documented in vegetation along the Chobe riverfront (eg. Lugoloobi 1993, Child 2020), where a comparative study of aerial photographs from 1962, 1985, and 1998, covering the period of major increase in elephant numbers, showed a general decline in woodlands and a corresponding increase in shrub vegetation (Mosugelo 1999, Mosugelo et al. 2002).

There is no doubt that trees have been lost and continue to be lost at a rate faster than they can replace themselves. The structural transformation from more wooded to more open habitat conditions benefit some browser species, but leads to a decline in others. The persistent abundance of elephants along the Chobe River and in Hwange National Park has been associated with an increase in kudu (Tragelaphus strepsiceros) and impala (Aepyceros melampus) (Skarpe et al., 2004). In contrast, along the Chobe River, the abundance of Chobe bushbuck (Tragelaphus scriptus ornatus) has declined substantially following the opening of the riparian woodland by elephants (Addy, 1993).

Other effects of high-density elephant populations and their impacts on other species and associated loss of biodiversity (Addy 1993; Cummings et al 1997 Herremans 1995, Veleix et al 2007), are important to be taken into consideration.

3 Dispersal efficiency: How efficient is the species' dispersal mechanism at key life stages?		
	Very Good	1
	Good	**2**
	Medium	3
	Poor	4
	Uncertain	5

Some savanna elephants have large ranges and highly nomadic examples are found in Mali (Wall et al., 2013), Botswana (Chase, 2007), and Namibia (Lindeque, 1995), where surface water is scarce and where herds make

relatively long movements on an annual or seasonal basis. An analysis of the movement trajectories of 139 African elephants within eight clusters of protected areas across southern Africa to determine if elephants migrate, and if so, where, how and why they migrate, determined that only 25 of these elephants migrated (18-20%) (Purdon et al 2018). This concurs with Tshipa et al. (2017) who found that maximum movements from Hwange (Zimbabwe) and Botswana was 260 Km and that 20% of Hwange elephant had ranges into Botswana in the wet season (see figure 4 below).

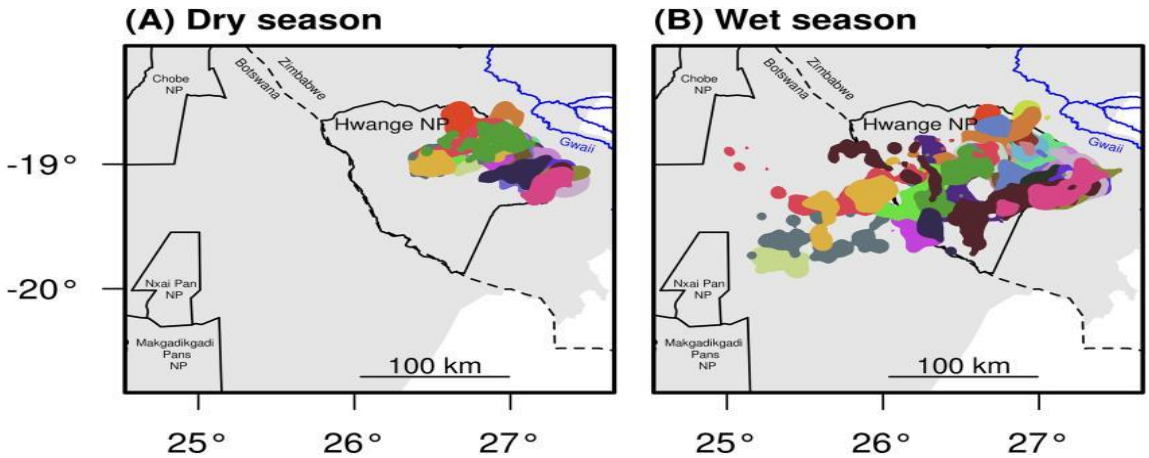


Figure 4. An example of Cross-border movement of GPS collared elephants between Zimbabwe and Botswana. (From Tshipa et al. 2017)

Elephants are a facultative partially-migratory species, where only some individuals in a population migrate opportunistically, and not every year. Elephants move between distinct seasonal ranges corresponding to southern Africa's dry and wet seasons. The timing of wet season movements was associated with the onset of rainfall and the subsequent greening up of forage. Conversely, the duration, distance, and the timing of dry season movements varied idiosyncratically.

Satellite tracking studies conducted in Botswana since the 1980's have revealed the changing patterns of transboundary elephant movements in the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA). Botswana's elephants, following expansion of their range within the country in the 1980s–90s, started, supposedly around the year 2000 (Craig et al 2011 see figure 5), to move across a variety of ecosystems politically defined by international borders so that an elephant present in Botswana in the evening was very often recorded in Namibia, Zambia, or Zimbabwe by morning. The largest ever elephant home ranges had previously been recorded as averaging 2500km^2; Botswana satellite-collared elephants moved over 32,000 km^2, with some elephants traversing a thousand kilometers in a month (Lindsay et al.2017).

There are 12 elephants currently collared in Botswana for research purposes, with plans to increase these, as part of the research objectives of the Botswana National Elephant Management and Action Plan 2021–2026. It is forbidden to hunt collared wildlife.

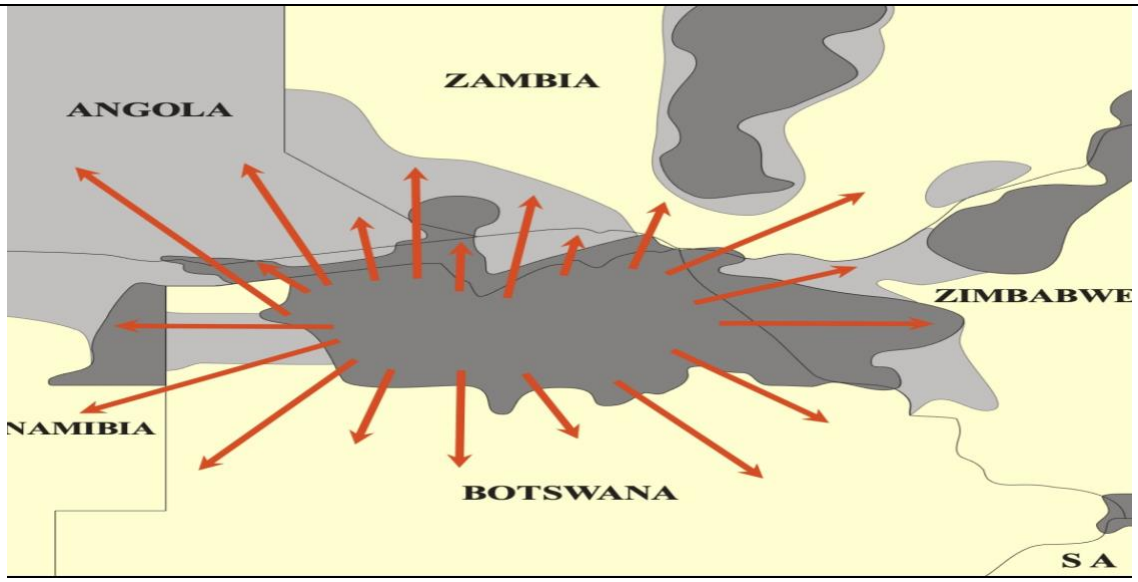


Figure 5: Elephant dispersal from Botswana (from Martin, RB, in Craig et al 2011)

Emigration from Botswana, meant as a dispersal mechanism, plays an important regulatory role in the elephant population dynamics (Craig et al 2011) as illustrated in a simulation model that found that 15% of the population migrates every year (Figure 6). However, it is not yet clear how many of these "emigrating" elephants are returning into the core range of northern Botswana.

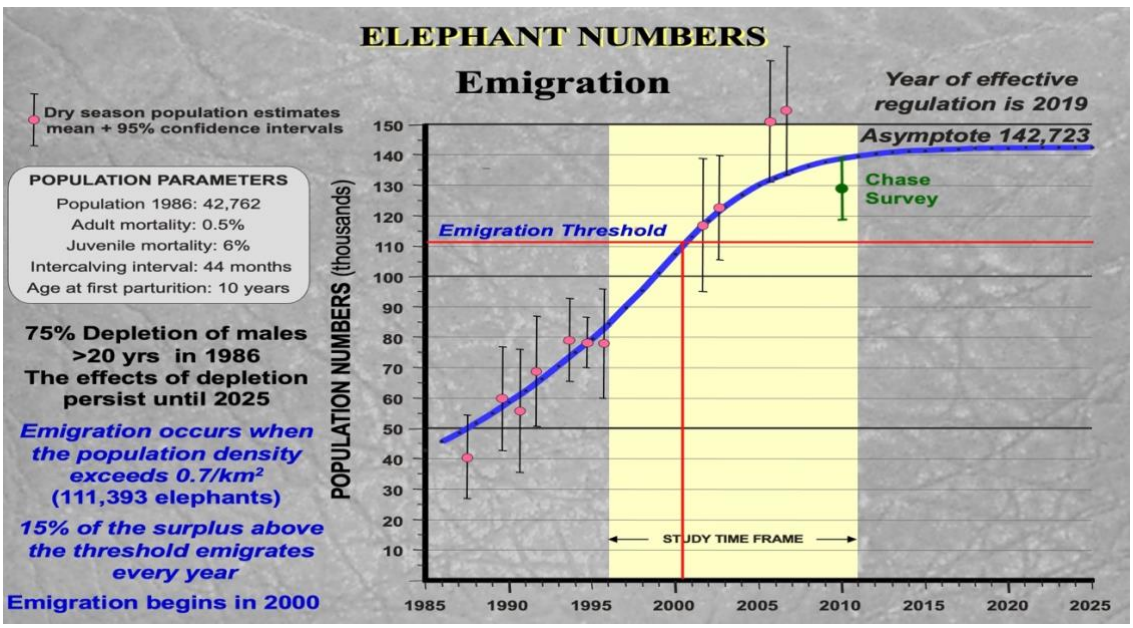


Figure 6. Impact of emigration simulated for the Botswana elephant population (from Martin,RB, in Craig et al. 2011)

Interestingly, the asymptote indicated in the 2011 simulation model is not far from recent elephant estimates. Finally, it appears that the recent expansion of elephant in central and southern Botswana shows that a) fences are not affecting elephant movements contrary to what was assumed by some authors such as Loarie et al (2009) and b) south corridors appears to be extremely functional and a substantial number of elephants are using them.

4. Interaction with humans: Is the species tolerant to human activity other than harvest?	No interaction	1
	Pest /Commensal	2
	Tolerant	**3**
	Sensitive	4
	Uncertain	5

Human-elephant interactions occur in the areas where people coexist with elephants. It happens in the communities neighboring core wildlife protected areas. Since the beginning of agriculture, elephants took advantage of palatable and easy food resources offered by man. The relationship between humans and elephants has deteriorated since humans have increased their dependence on domesticated herbivores and increased their dependence on wild habitats occupied also by elephants. From the point of view of farmers and rural communities, elephants are agricultural pests because of their significant damage: the interactions usually result in human deaths, elephant deaths, house demolitions, crop damage and secondary impacts such as fear of injury or death, restriction on human movement (particularly at night), competition for water resources, poor nutrition status, competition for livestock grazing ground, reduced school attendance for children due to fear of elephants (Mayberry et al. 2017).

Moreover, elephants are capable of raiding different types of plants and consuming different structural parts of the plant from roots to leaves, which make them the generalist agricultural pests. Elephants feed on seeds, bark, fruits, leaves, grasses and trees. Also, elephants cause damage to both pre-harvest and post-harvest crops (see point 9a). Hidden impacts on human well-being include fear about food insecurity, personal safety and reduced mobility (Mayberry et al. 2017). All of this gives rise to widespread negative sentiments towards elephant.

On the other hand, elephants are agents of ecological restoration (at natural densities) because of their capability in redistributing damaged ecosystem services to human, livestock, and other wildlife species. Through sustainable management, elephants can provide direct and indirect basic ecological, social and economic benefits for local people and wildlife species. Elephants have provided humans with among others meat, ivory, traditional medicines and skins, for centuries. It is a clear evidence that human and elephants have coexisted over an extended period; the relationship between humans and elephants deteriorated after human increased dependence on arable farming and domesticated herbivores, and increased their dependence on wild habitats also occupied by elephants.

It has been calculated that the threshold human density at which elephants disappear from settled areas is approximately 15 people/km^2 (Hoare & DuToit, 1999); an evident case of the above is the decline of elephants in the Sebungwe region of Zimbabwe, where human population in the three districts of the Sebungwe has increased from ~45,000 in 1950 to some ~700,000 in 2013 with human population densities of more than 30 per km^2 (Mpakairi et al. 2019). Human density in most part of Botswana is very low and still under the above-mentioned threshold, although the high elephant number is causing severe impacts to human and natural landscapes. The provision of artificial water sources can influence elephant movement patterns and behavior (Loarie et al. 2009).

National status

5. National distribution: How is the species distributed nationally?	Widespread, contiguous in country	**1**
	Widespread, fragmented in country	2
	Restricted and fragmented	3
	Localised	4
	Uncertain	5

Most of the elephant population inhabits the north of the country, both outside (more than two thirds) and inside protected areas, and 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 km^2 of which about 128,000 km^2 have been assessed through aerial surveys and the remaining 100,000 km^2 of potential range yet to be assessed.

The elephant range expands in response to rainfall, and wet season distribution is considerably larger than in the dry season when the animals are concentrated near permanent water sources. Elephant densities can reach over 8-10/km^2 (e.g., along the Chobe River).

Due to the considerable increase in numbers, elephant distribution also changed significantly within Botswana. Elephants have expanded their range from the Okavango Delta, Linyanti and Chobe in the north to the west toward Namibia and south of the country. In 2015, elephants were observed for the first time in large numbers in the Central Kalahari Game Reserve (CKGR) and in the Okwa Wildlife Management Area (GH10 WMA), while in 2018 their distribution extended even further south into farmlands where local people had never been exposed to elephants before (Figure 7).

In 2019 a survey of the Khaudum National Park and surrounding areas in Namibia estimated 8,000 (95% confidence range: 4,971-11,028) elephants. The overall trend from 1998 shows an average rate of increase of 4.4% per annum which is significant (p=0.029) with a 95% confidence range (CR) of 0.7% - 8.2% (Craig GC & D St C Gibson 2019). This growth could be ascribed not only to natural increases but also to movements from Botswana, a fact already*

reported in 2016 (Biotrack Botswana, 2016).

Elephants in the north of Botswana are part of a larger population stretching into neighboring countries. Elephants, like all wildlife, are unaware of international borders while moving across habitats and ecosystem since millennia, and have been shown to move considerable distances to and from northern Botswana into Namibia and further into Angola and Zambia to the north and Zimbabwe to the east. The Kavango-Zambezi Trans Frontier Conservation Area (KAZA TFCA) 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 about 220,000-240,000 elephants (estimated within the confidence range of aerial surveys) —the largest contiguous population in Africa. The KAZA TFCA is particularly important for the elephants in region because it protects core elephant habitat and movement corridors between 5 countries, allowing elephants to respond to seasonal habitat changes and environmental fluctuations (KAZA 2019).

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 region and in Africa in general, such growth and expansion also presents major challenges to the management of elephants in Botswana. Further research is needed to comprehensively define the elephant range in the country, although it is now believed to be in excess of 280,000 km^2 especially since the Central Kahalari Game Reserve (52,200 km^2) is now considered permanent range of the species and conflicts with elephants are increasing in the central southern part of the country (see Figure 11).

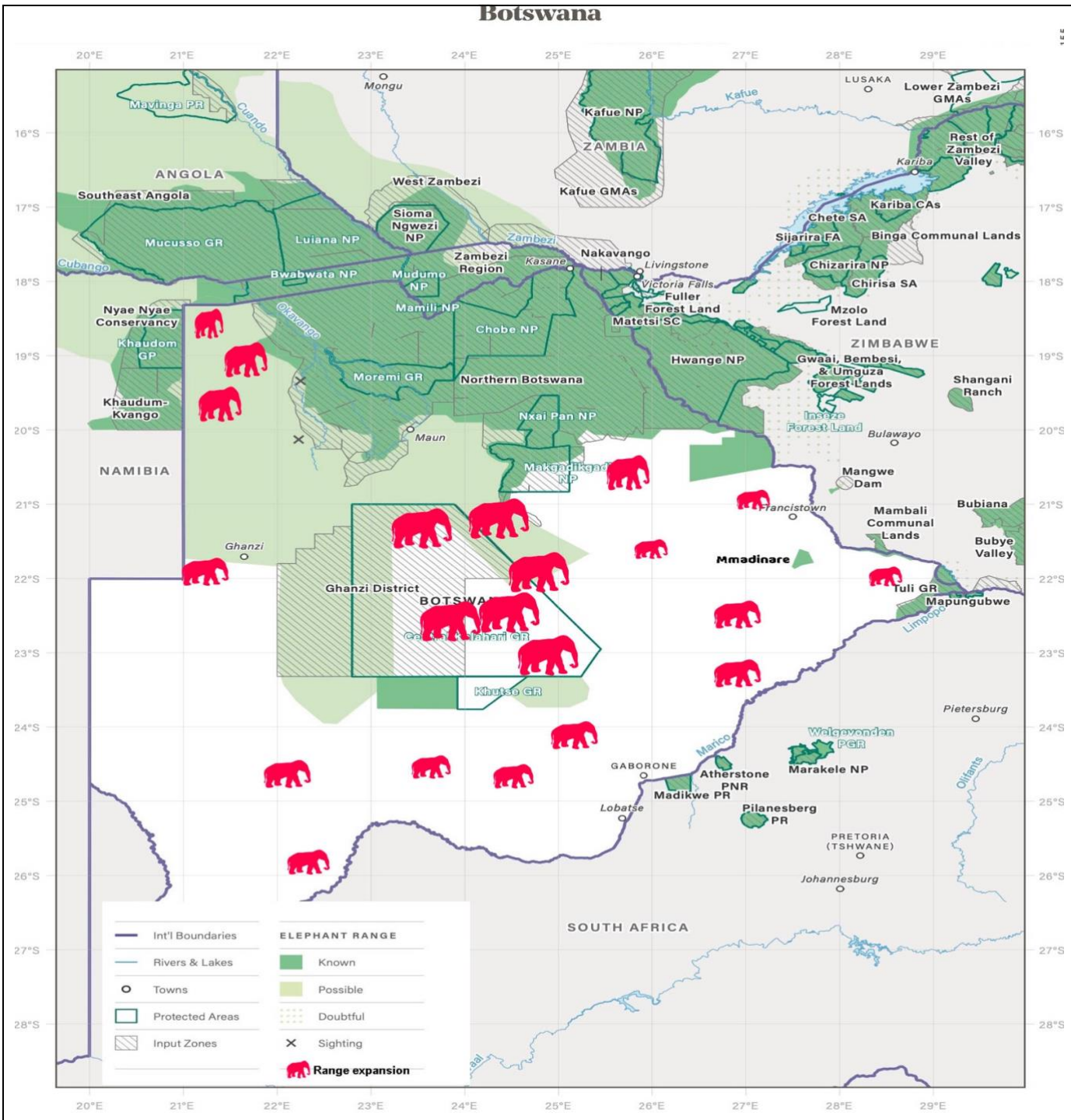


Figure 7. Expansion of known range of Elephant in Botswana (modified from Thouless et al. 2016 from DWNP data.)

6. National abundance: What is the abundance nationally?		
	Very abundant	1
	Common	**2**
	Uncommon	3
	Rare	4
	Uncertain	5

Prior to the 1890's, the presence of tsetse fly limited the presence of cattle in most of the Botswana which had perennial water. Humans' influence was mainly traditional hunting by Basarwa (San indigenous people), and the main impact was the use of fire as a hunting tool. Towards the end of the 19th century ivory hunters had driven elephant as well as rhino and buffalo out of northern Botswana and most southern Africa south of the Zambezi River. The presence of tsetse fly kept pastoralists out of most of the present-day Chobe National Park. The rinderpest pandemic of 1894-1896 not only decimated the wildlife populations, but also caused tsetse fly to become locally extinct within the northern Botswana and surroundings area (Spinage C.A.-Undated).

The depletion of elephant to insignificant densities from the 1890's until about 1960 (Child, 1968) allowed for the development of a riparian strip with a species composition containing many trees palatable to elephant. The increase in elephants is what probably opened up much of the dense riverine forests along the Chobe River which Selous (1881) visited in July 1874 (prior to the rinderpest) and described as a dense continuous jungle, interspersed with large forest trees which went down in most parts to the water, and which, in places, was nearly impossible to creep through. During Selous's second trip to the Linyanti in 1879, he found a big drop in elephant numbers. Ivory hunters had, in 5 years, pushed most elephant away from the Chobe, Savute and Linyanti river systems. Shortly after, at the end of the century, the rinderpest decimated the remaining wildlife population resulting in a die-off of tsetse fly.

Elephant densities change throughout their northern Botswana range on a seasonal basis. Densities also vary considerably from year to year as elephant respond to local rainfall, fires and changes in other pressures. On a longer timescale elephant density have changed during the last century. 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.

Elephant densities in Botswana have therefore reached their lowest densities in the late 1890's (Child, 1968, Campbell, 1990, FGU 1992, Booth, 1990, Spinage,1990) when less than 1,000 were estimated. Then there has been a period of at least 70 years in which elephant populations in northern Botswana were less than 10,000. Tree growth and woodland undergrowth during that period would have been unaffected by elephant. Changes to the vegetation would therefore be expected where elephant densities are now high. The change would be expected to be high initially and then tail off to a new composition and structure that is more tolerant of elephant. The period of low elephant densities could be viewed as an episodic event, unlikely to be repeated unless elephant populations are drastically reduced or excluded from areas for long periods.

There are now estimated between 120,000 and 160,000 elephants in Botswana.

Data from aerial surveys suggest that this population increased from 1987 to 2006 at a rate of 6% per annum (Figure 8).

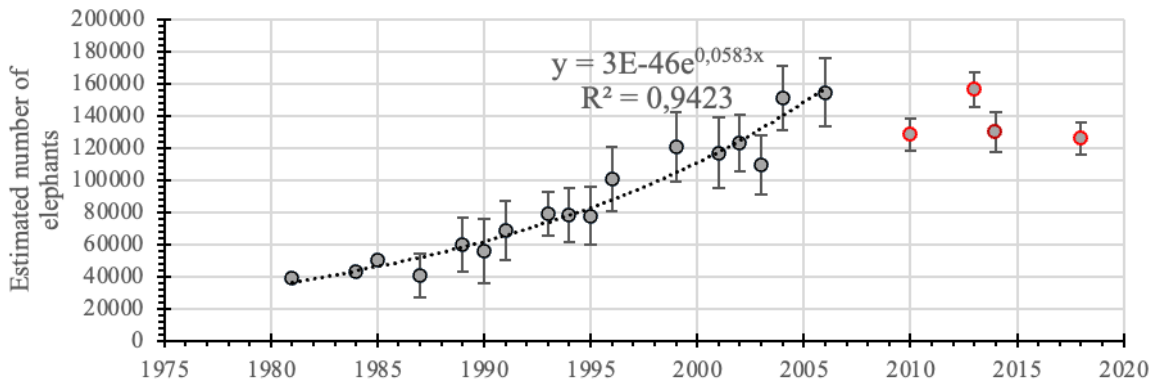


Figure 8. Estimated numbers of elephants in northern Botswana from 1981 to 2018 (dry seasons) (vertical bars represent 95% confidence limits). Data from 1987 to 2006 are comparable. (Source: DWNP).

Because of differences in survey methodology such as non-adherence to MIKE standards for aerial surveys (Craig 2012) through own standards (that raised unresolved issues during a KAZA workshop in preparation of the Great Elephant Census in 2014 (KAZA 2014)) the use of cameras, not used in previous surveys, the unavailability of photos data to verify the estimates, and the fact that they changed frequently the range covered without covering the entire elephant range, surveys in 2010, 2014 and 2018 (Chase 2011,Chase et al. 2015,2018) are not strictly comparable with previous surveys but the survey estimates are levelling off or decreasing.

Furthermore when the results of the 2014 survey (The Great Elephant Census | A Paul G. Allen Project Country-by-Country Findings) were publicized, they reported a 15% decrease since 2010 in Botswana, which is not real and incorrect as the 2010 survey made by the same surveyor were reporting approximately the same estimate with no significant difference. Furthermore the 2010 survey (Chase 2010) was used to suspend hunting in 2014 through ambiguous data concerning the decline in some species and biased views.

In some strata (Okavango Panhandle – Songhurst et al, 2010,2016 & 2019) surveyed independently from the previous ones in the same years, produced much higher estimates and a lower carcass ratio.

Survey estimates from the past 23 years in the Okavango Panhandle, indicate that the elephant population is increasing faster than the calculated theoretical maximum rate of increase of 7% (see Figure 9). The finite rate of change (r) over 23 years in the total study area using current data is 1.7, which indicates an increase of 7.6% per year (Songhurst et al. 2019).

Elephant population density estimates in the whole study area over the past 23 years fluctuated but they also indicate a steady increase (Songhurst et al. 2019).

In comparable strata, the carcass ratio observed in the 2019 survey (3.2 for whole Panhandle) is smaller than the estimated carcass ratio (8.1) in 2018 (Chase et al, 2018). Comparing carcass ratio per strata between 2019 and 2018, NG11 has shown a decrease from 2018 estimates and 2019 (3.7 to 2.6) for all carcasses and so did NG13 (9.8 to 5.2). However, NG12 has shown a significant increase (2.2 to 8.2) based however mostly on category 3 and 4 carcasses (Old and very old). Only two fresh carcasses (category 1) and 8 carcasses with skin (recent-category 2) were observed with no tusks (tusks cut off) and most of these were in NG11, indicating a low mortality in the year preceding the survey (Songhurst et al. 2019) and therefore not matching with the data presented by Chase et al. 2018.

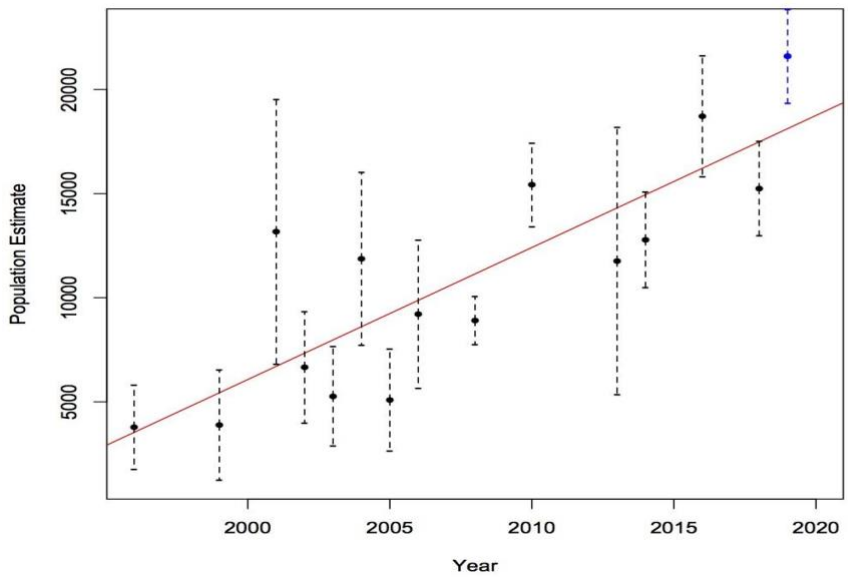


Figure 9. Elephant Population Estimates in the Eastern Okavango Panhandle over 23 Years 1996 - 2019 (Songhurst et al. 2019.)

In south-central Botswana, more than 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 & 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).

7. **National population trend:** What is the recent national population trend?	Increasing	1
	Stable	**2**
	Reduced, but stable	3
	Reduced and still decreasing	4
	Uncertain	5

Data from aerial surveys suggest that the Botswana's elephant population increased from 1981 to 2006 at a rate of 6% per annum (Fig 8). Likewise, the DWNP surveys of 2012 and 2013 have corroborated the previous trend analysis.

Botswana's numbers remain equivocal as the cause for the apparent decline from ~155,000 in 2006 to ~130,000 in 2018 may be due to one or more factors relating to range expansion, emigration, uncounted elephants and/or mis-counted elephants, either too high or too low.

In order to remedy the above, KAZA is planning to undertake, in 2022, 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 principle that management of elephants must be guided by comparable trends and not by one-off surveys and that additional information is required on elephants' movement patterns and demographics together with an assessment of the habitat status across the KAZA TFCA.

8. Quality of information: What type of information is available to describe abundance and trend in the national population?	**Quantitative data, recent**	**1**
	Good local knowledge	2
	Quantitative data, outdated	3
	Anecdotal information	4
	None	5

The first wildlife aerial survey in Botswana was undertaken in 1973 (Sommerlatte, 1976) to estimate the size of the elephant population around the Chobe River. Several other surveys were undertaken until 1987 but constraints in equipment, methodologies and time reduced their quality. Because of this, early survey data are not considered adequate for inclusion in analysis of trends for the elephant population in northern Botswana, although they are of general interest (Gibson et al 1998). A reasonable set of data, obtained from 1987 until 2006, using standard methodology is therefore used to examine elephant population estimates and trends. Likewise, the DWNP surveys of 2012 and 2013 have corroborated the previous trend analysis.

9 Major threats: What major threat is the species facing (underline following: overuse/ habitat loss and alteration/ invasive species/ other: and how severe is it?	None	1
	Limited/Reversible	**2**
	Substantial	3
	Severe/Irreversible	4
	Uncertain	5

Botswana's success in conserving elephants in northern Botswana has perhaps ironically raised a whole host of conservation and development challenges. Elsewhere in Africa poachers have prevented the so-called "elephant problem" from playing out such that Botswana finds itself in unchartered waters.

It is clear though that the conservation of elephants is diametrically opposed to the strategy of geographic disease control, primarily for Foot and Mouth Disease (FMD), via a sprawling network of veterinary cordon fences aimed at protecting the EU beef market. Consequently, at intervals, considerable sections of the Northern and Southern Buffalo Fences, the Namibian Border fences, the CBPP fences (Samochima, Ikoga and Setata), the Makgadikgadi National Park Game Proof Fence, the Northern Zone Protection Fence, the Kuke Fence (amongst others) and a number of individual Farm fences are down, in some instances cut by elephants. Elephants have moved south into the CKGR and regularly cross the Boteti River, as well as trek across western Ngamiland to Khaudum National Park in Namibia from the Okavango Panhandle.

It follows that a unique opportunity to realign geographic disease control fences with wildlife conservation has now presented itself, in which the desires of both livestock and wildlife sectors can be met in a genuinely win-win scenario (e.g. Cumming, 2016). The prevailing paradigm governing rangeland management is to separate wildlife and livestock to avoid competition for grazing and minimize disease transmission. The replacement of Multispecies Systems (MSS) with single species systems has resulted in the transformation of vast areas of southern Africa's savannas and grasslands. Constraints to adopting MSS include governance measures that prevent rural households from realizing the full benefits from wildlife, and resolution of disease management, potential export markets for beef, and related commodity-based trade issues. (Cumming, 2016)

The solution lies in shared landscapes around the Protected Areas and Forest Reserves in which the local communities genuinely benefit from the presence of wildlife and are also able keep domestic stock, without compromising the nation's broader goal of a lucrative beef export industry. The lack of benefits going to local communities from both wildlife and forest resources, exacerbated after 7 years of hunting prohibition, is a structural threat to biodiversity and a major cause for concern, as while these areas serve a vital role in terms of the provision of ecosystem goods and services, they will be converted to more direct forms of (income) benefit, unless CBNRM can operate in a more meaningful way. It is tragic that the many key recommendations made over the last 30- 40 years calling for CBNRM to be effected more widely in Botswana and especially in the elephant range in the northern part of the country had simply been abruptly stopped in 2013 with the hunting suspension.

The Government and DWNP are now working tirelessly to reinstate and improve CBRNM in Botswana.

Although the elephant population is the largest in Africa there are no significant threats threatening this species, the following is a detailed account of some of the perceived threats to elephant in Botswana although none of these threats is leading to a decline of the species in the country. Threats are categorized as follows in order of importance:

a) Human-Elephant Conflict

As partially illustrated under point 4, Rural Communities living within the elephant expanding range are increasingly exposed to loss of crops, damage to water-points and fences as well as human fatalities. Measures taken by governments to reduce conflict include construction of electric fences and the use of deterrents (Hoare, 2001; Osborn, 2002, Hoare, 2012), 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.

Negative perceptions and lethal retaliation as a result of Elephant crop damage are some of the most important threats to elephant populations worldwide (Hoare, 1999; Lamarque et al., 2009).

In Botswana there is relatively little overlap between elephants and people but where there is overlap, 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.

Conflicts between humans and wildlife increased substantially after 2013. This may be a reflection of a reduced tolerance for wildlife during the hunting moratorium.

As shown in Figure 10, the human-wildlife conflict incidents recorded have more than tripled between the years 2014 and 2020 i.e. Human-wildlife conflict incidents increased from 2,804 incidents in 2013 to 8,393 incidents by FY 2020/2021, with a peak of 9,167 incidents in FY 2019/2020. All the recorded incidents have always far surpassed the 10% annual decrease target set by the DWNP (DWNP, 2018 annual strategic plan).

Furthermore, from June 2020 up to February 2021 (Fiscal Year 2020-2021 ending in April 2021) a total of 5,668 human-wildlife cases were reported and an amount of BWP 25,693,484.50 (approx. USD 2,400,000) was disbursed as compensation. A Public Awareness and the Human-Wildlife Conflict Strategies were completed and launched in October 2020. Furthermore, a review of the Compensation Guidelines is expected to be completed by end of August 2021.

Almost half of human-wildlife conflicts are attributable to elephants. For example, in the last four fiscal years from 2017/2018 to 2020/2021, 42.5% of conflicts were with elephants.

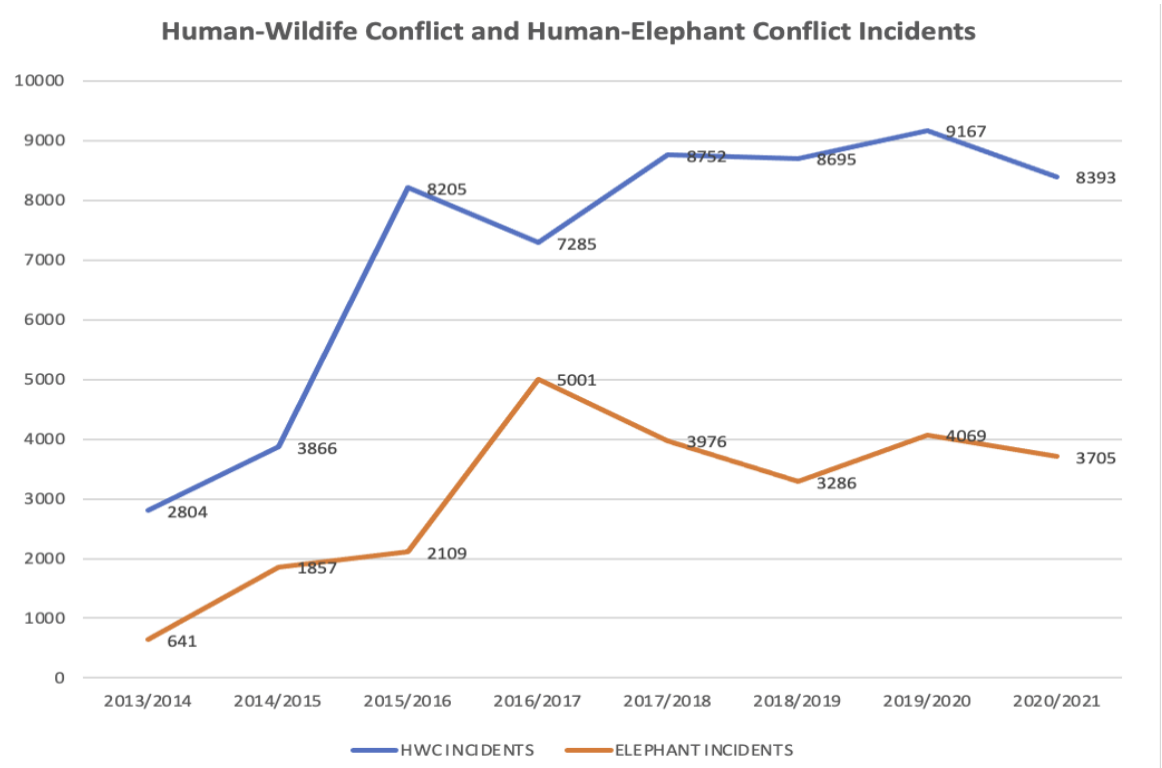


Figure 10: Human wildlife conflict and Human elephant Conflict from FY 2013/2014 to FY 2020/2021(Source: DWNP).

As shown in Figure 11 below, with expansion in the range of elephants, human elephant conflict has reached Districts south of the 21stS parallel previously unaware of elephant presence and related conflicts.

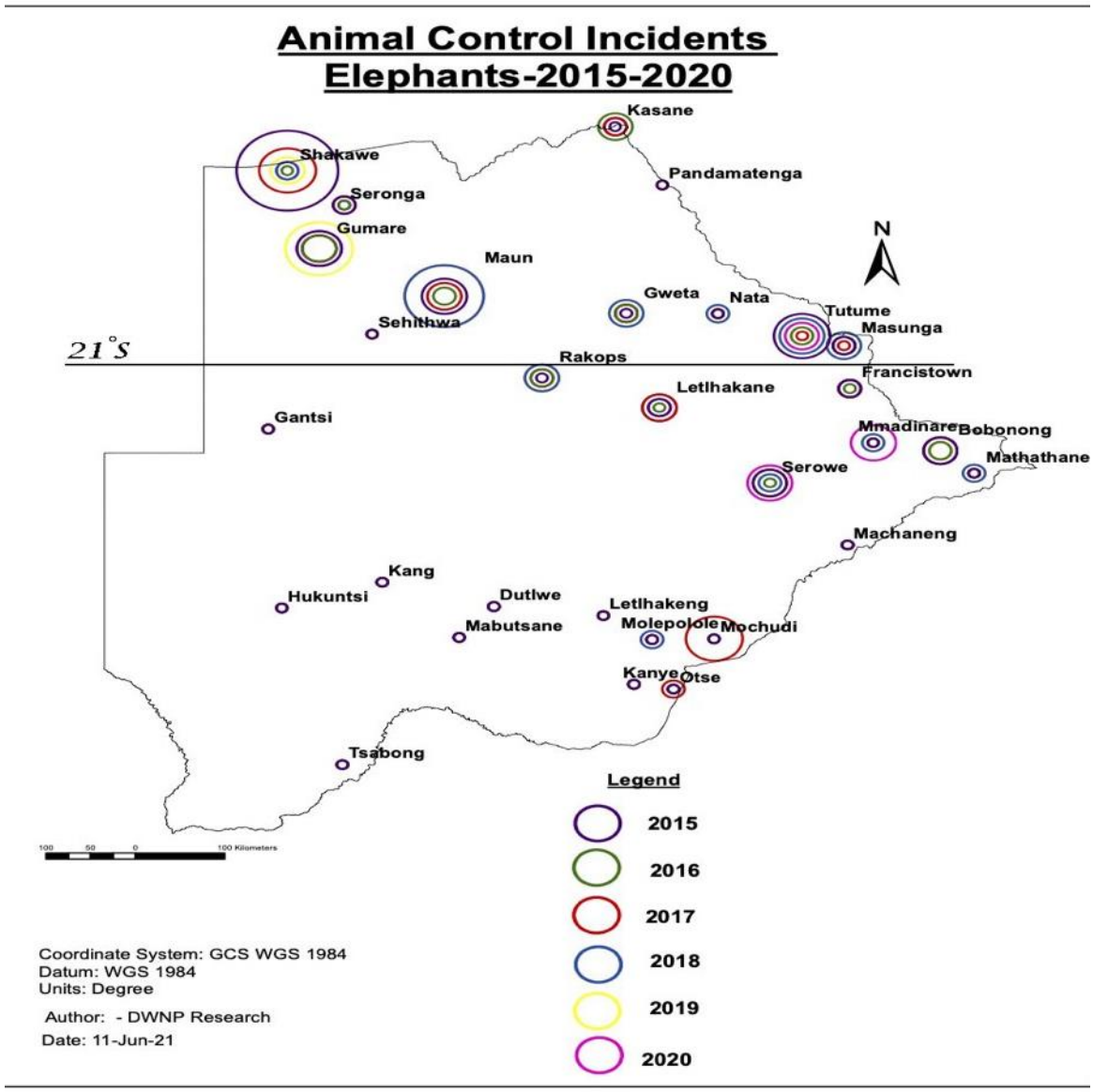


Figure 11. Map of Human elephant conflicts 2015-2020. (Source: DWNP).

Studies conducted under the ECO-Exist project (http://www.ecoexistproject.org) in the Okavango Panhandle (Figure 12), where, in the eastern part, more than 16,000 people share nearly 9,000 Km^2 with 18,000 (15,000-23,000) elephants (Pozo et al.2018) are of particular importance to understand Human Elephant Conflict especially the finding that elephants in the Okavango Panhandle tend to avoid humans as much as possible, steering clear of cultivated lands, settlements, and fences, preferring to stick to well defined elephant pathways when moving through fields and settlements. There are a few elephants, predominantly male, that seek out fields to raid, but in the Panhandle, elephants tend to be mostly opportunistic; when they come close to fields, they are more likely to raid crops.

The raiding problem is exacerbated by the movements of both humans and elephant towards water, especially in the dry season. Pozo et al. (2017) used empirical and modelled figures to demonstrate that both human and elephant numbers in that area have increased 10-fold since 1970. Land allocation for farming, on the other hand, remained constant since 1985. Pozo et al. 2017 surprisingly found no corresponding increase in crop raiding in the area; in fact, they found a decrease in crop raiding, which they ascribe to the lack of increase in land allocation, i.e., smaller, better guarded arable plots (Figure 13). However, Pozo's (2017) model only extends to 2015.

Fields near artificial or permanent water are prone to crop raiding, but elephants are more attracted to water than to crops (Pozo et al. 2018). Interaction between humans, elephant and crops near water are bound to increase as elephant numbers grow, climate becomes drier with more prolonged droughts and human population density, driven by improved transport networks and water shortages, increases around permanent water. Most of the fields are raided at night.

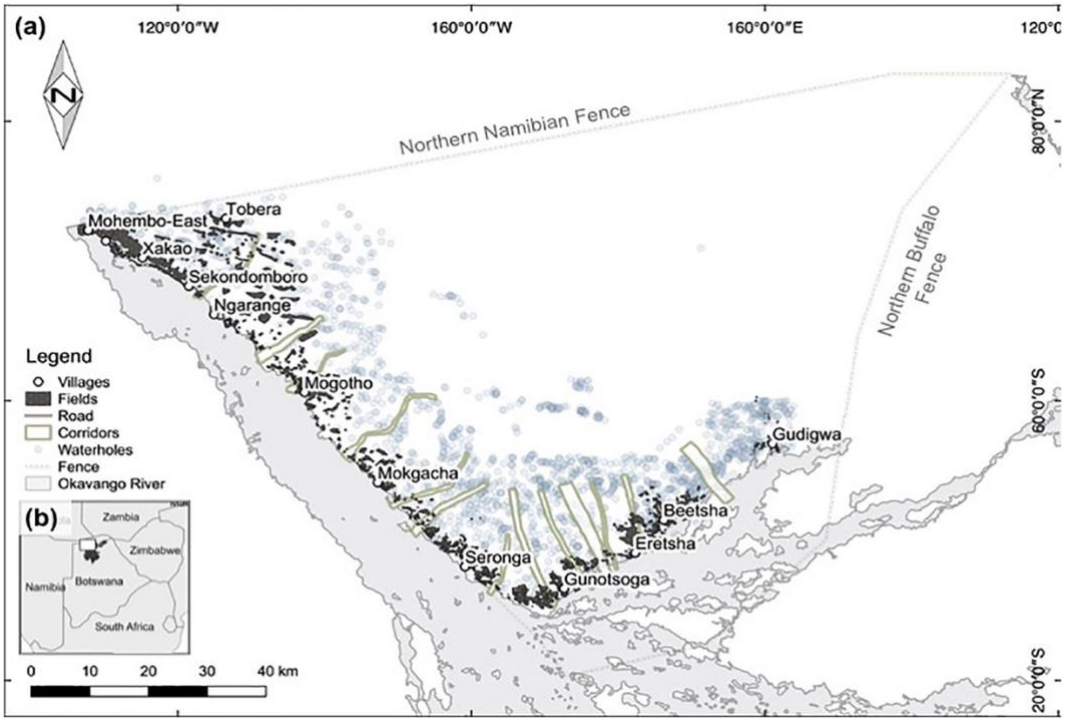


Figure 12 Eastern Okavango Delta Panhandle (from Pozo et.al 2018)

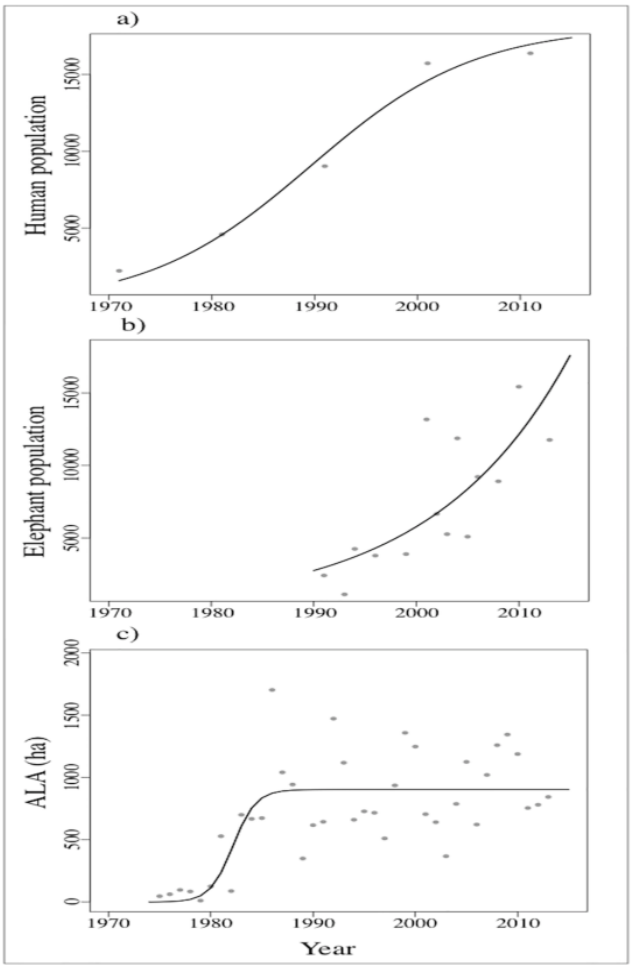


Figure 13. Historical trends for human-elephant conflict drivers in the eastern Okavango Panhandle. (A) human population, (B) elephant population, and (C) agricultural land allocated (ALA) (ha) (from Pozo et al.2017).

In another area of Botswana, near the Boteti River, on the western side of Makgadikgadi Pan National Park (CT/8 CHA see Figure 14), Gontse (2016) found that damages by elephant were very high, with 97% of arable fields destroyed in one village (Khumaga). Percentage of crop losses ranged from 100% (the highest, for melons) to 88.6% (the lowest, for maize) (Tables 2 and 3). Interestingly, elephants in Khumaga destroy fields even during the day and the late afternoons.

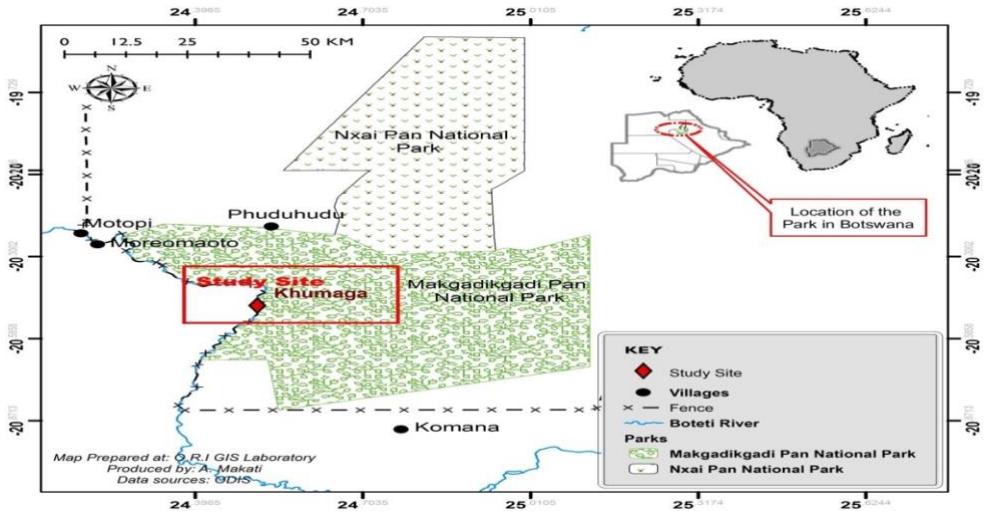


Figure 14: Khumaga Village near the Boteti River (from Gontse 2016)

Year	*Hectares ploughed*	*Hectares destroyed*	*Percentage destroyed*
2010	*336*	*333*	***99.1***
2011	*330*	*326*	***98.8***
2012	*354*	*349*	***98.6***
2013	*360.5*	*350.5*	***97.2***
2014	*356.5*	*342.5*	***96.1***

Table 2 Hectares ploughed and destroyed by elephants near the Boteti River (from Gontse 2016)

	2010	*2011*	*2012*	*2013*	*2014*	*Total loss*	*Total loss in %*
Millet	*503.5*	*504.75*	*519*	*550.25*	*525.5*	*2603*	*92.2*
Maize	*521.25*	*516.5*	*557*	*544.5*	*478.25*	*2617.5*	*88.6*
Sorghum	*306.75*	*298*	*316*	*347.75*	*339*	*1607.5*	*93.6*
Watermelon	*268.5*	*259.5*	*279*	*281.5*	*269.5*	*1358*	*91.3*
Beans	*364.85*	*355*	*393.5*	*387.75*	*392.25*	*1893.35*	*95.4*
Groundnuts	*17.25*	*16.75*	*22.75*	*21.25*	*20.25*	*98.25*	*97.0*
Sweet reeds	*217.5*	*213*	*239*	*233.5*	*230.5*	*1133.5*	*95.5*
Melon	*10.5*	*11*	*9*	*9*	*8.5*	*48*	*100.0*

1bag = 50kg for millet, maize, sorghum, beans and groundnuts (loss) - 1= 1 ton for watermelon, sweet reeds and melon

Table 3 Loss per crop due to elephants 2010-2014 near the Boteti River (from Gontse 2016)

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 15 overleaf shows the number of problem elephants controlled by DWNP in Botswana.

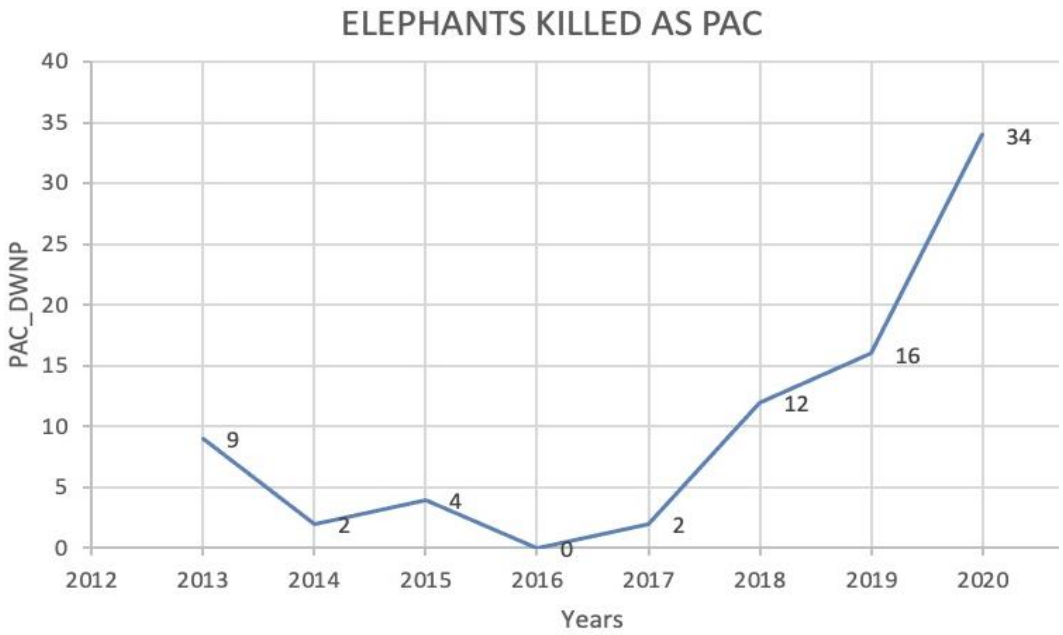


Figure 15. Elephants controlled as problem animals by DWNP (Source: DWNP)

Human casualties are the saddest part of human elephant conflict. Table 4 shows the increase of people killed or injured by elephants since 2010 and in particular since the hunting suspension in force since 2014.

Year	***Number of people killed by elephants***	***Number of people injured by elephants***
2020	*5*	*4*
2019	*9*	*1*
2018	*14*	*0*
2017	*2*	*0*
2016	*8*	*0*
2015	*2*	*3*
2014	*4*	*0*
2013	*0*	*0*
2012	*0*	*1*
2011	*2*	*3*
2010	*2*	*0*
TOTAL	***48***	***12***

Table 4 - People killed and injured by elephants in Botswana 2020-2010 (Source: DWNP).

Blackie et al (2019) demonstrated that the human-wildlife conflict has been on the increase since the introduction of the wildlife hunting moratorium in 2014. The increase in human-wildlife conflicts has been noted for negatively impacting the conservation of wildlife as well as reducing rural livelihood as the wildlife destroy people's fields and, in some instances, resulted in loss of human life. They also gave an overview of the compensation schemes a summary of which follows: "The Government of Botswana introduced monetary compensation for damages to property caused by wildlife through the amendment of Section 46 of the Wildlife Conservation and National Parks Act of 1992 through Presidential Directive CAB 35/93 in December 2003. Initially, when government introduced payment of compensation for damages caused by wildlife, it did not impose any limit on the species for which such compensation would be payable. However, it quickly became apparent that this unlimited payment of compensation was too unwieldy and required an excessive amount of manpower for its implementation and was also expensive. For this reason, Cabinet decided, in 1996, through Presidential Directive CAB 17/96, to limit the payment of compensation to those animals listed as dangerous animals in Schedule 9 of the Wildlife Conservation and National Parks Act of 1992. These animals are lion, leopard, hippo, rhinoceros, elephant, buffalo and crocodile. The primary reason to limit compensation to dangerous animals was that it is difficult for people to defend themselves against such animals and also to ensure that farmers do not end up killing such animals as they face danger of extinction from retaliatory killings. Figure 16 shows annual DWNP budget provision 2013-2018 against actual amount required to pay compensation to affected individuals for damage

caused by wild animals.

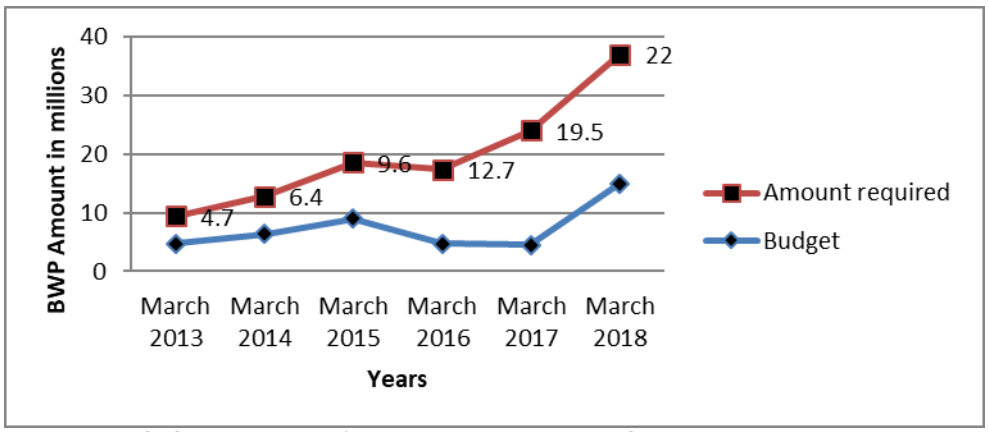


Figure 16: Trends in Payment of Monetary Compensation: 2013-2018 Source: DWNP (2018)

The government was able to provide financial resources to compensate affected individuals until 2015 when, with the introduction of the hunting moratorium, the situation became unmanageable as government struggled to find commensurate funds to match the ever-escalating human-wildlife damage incidents as shown on Figure 16 which shows that from 2015 to 2018 government has been operating with a deficit budget. The financial challenges to government have not been helped by the government's introduction of the 100% payment for elephant and lion species in 2015. Wildlife officials point to this policy direction which seem to have led to more farmers reporting such elephant incidents than before. Whether these claims by farmers are true or not remains to be established. So far, Botswana and probably Tanzania to a lesser extent, are the only countries in Africa that pays monetary compensation for damages caused by wildlife and this initiative has come at cost both to government and local communities living adjacent to and or in close proximity to the wildlife range. Despite elephants projecting a marvelous and beautiful scenic experience to tourists, they remain the most resented, feared and destructive wildlife species among rural communities coexisting with these gigantic and magnificent wildlife species especially in agricultural fields."

Overall, monetary compensation schemes for damage caused by elephants do not seem to sustainably address the root cause of conflicts and appears to be unable to decrease the level of the problem since it fails to address its roots cause (IUCN AfESG 2012 al., Hoare, 2012). Compensation schemes in Botswana and around the globe must include a variety of factors to be effective (Nyhus et al., 2005). The most critical factors include: correct and speedy confirmation of losses; timely and fair payments; clear protocols, rules, and guidelines that connect payment and appropriate conservation management practices; and an understanding of the cultural and socio-economic systems.

DWNP recommends and intends to progressively phase out a state-managed compensation scheme through improved CBRNM frameworks and institutions. The Elephant Management Plan 2021–2026 includes an action (11.2.2) aimed at examining options for compensation including self-insurance schemes with full consultation of affected communities: the proper implementation of that action could achieve a win-win situation for both rural people and elephant conservation.

b) Habitat loss

Botswana has viable populations of wildlife and is renowned for its commitment to conservation and successful conservation programs. It ranked 1st in the world in megafauna conservation performance (Lindsey et al.2017). Botswana's human population density is low overall (2011 Population Census = 2,024,904; 2020 Projected Population = 2,374,698 in 581,730 km^2) with most of the population concentrated on the south and east, leaving the central and northern parts scarcely populated.

However, Botswana's wildlife populations have not been spared by challenges of wildlife population decline and human population encroachment into wildlife areas. Human population increase is often associated with an increase in demand for more land for infrastructural development, agricultural activities, and residential places. This demand often expands into wildlife areas resulting in wildlife population declines, isolated small populations, and displacement of wildlife populations from their original habitats. The human population increase often results in wildlife habitat fragmentation, habitat degradation, illegal off-take, and human-wildlife conflict. Despite this, Botswana still harbors relatively healthy wildlife populations in a wide range of wilderness habitats which include part of the five high biodiversity areas in the world such as the Miombo-Mopane woodlands of southern Africa, and the Kalahari Desert.

There has been a decline in the land area occupied by forests: in 1990 forests (including riparian, typical forest and woodlands) covered about 18,800,000 hectares while in 2015 about 15,727,000 hectares (FAO Global Forest

Resources Assessment 2020). The major physical contributing factors are unmanaged fires, damage from elephants and human encroachment (Forest Conservation Strategy 2013-2020). The percentage contribution of each factor to the decline is unknown and needs further investigation (Forest Conservation Strategy 2013-2020).

Fire and elephants are among the key threats to ecosystems, with their dual operation leading to continued decline of forest cover across northern Botswana in general and the Chobe National Park/Forest Reserves in particular. The north easternmost Forest Reserves of Kazuma, Kasane Forest Extension and Sibuyu are particularly prone to extensive fires, which occur at a frequency of 1-3 years rather than the 5-7 year interval widely regarded as necessary to enable recruitment of key forest species. It is difficult to apportion forest loss between elephants and fire, but one theory might be that fire caused the change from forest to shrub/open savannah and elephants are today helping to hold the ecosystem in that state (Biotrack Botswana, 2016).

In general, habitat loss is not a severe threat for elephants in Botswana (Figure 17).

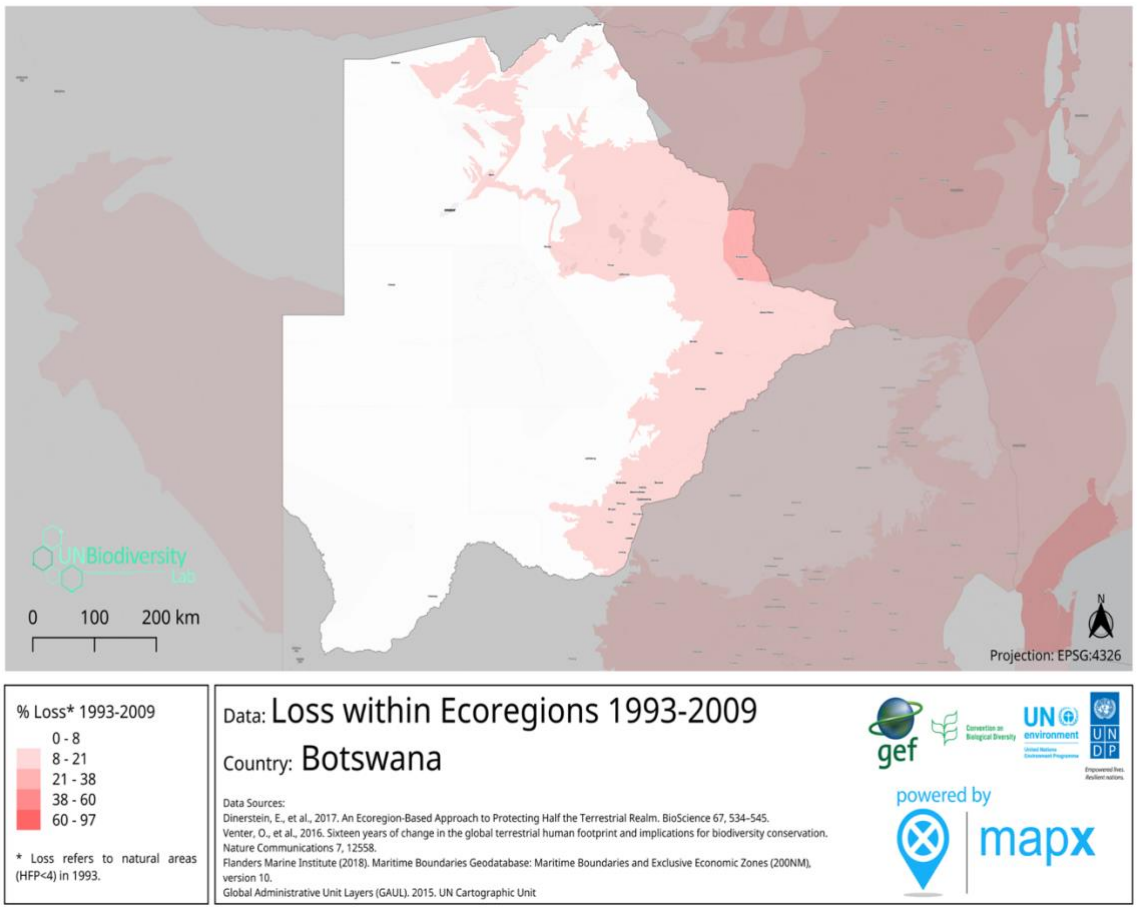


Figure 17. Habitat Loss 1993-2009 (Source: 6th National Report to the Convention on Biological Diversity-2019)

c) Poaching

The 2014 hunting ban has had negative consequences such an increase in poaching for meat due mainly to the lack of benefits accruing to rural communities (Mbaiwa 2017a, Blackie 2019). The above was predicted by several authors at the onset of the hunting suspension (Kahalari Conservation Society 2009, Lindsey 2010, Pani 2014, Sommerville 2015), but some stakeholders have widely publicized the hunting suspension as a great victory for Botswana wildlife conservation. The reality has shown that it has been a great loss for wildlife and people.

Commercial poaching is not a threat to elephant in Botswana despite the increased elephant range and increased human-elephant conflicts. Incursions of poachers are not frequent although during the hunting ban incidences of elephant poaching within the concession areas had possibly increased because the areas were partially deserted by operators: they were occupying the concessions and communities received benefits thereby keeping poaching under strict control also by facilitating the work of enforcement bodies.

In general, poaching is under control in Botswana and the level of illegal offtakes is, at present, not constituting a risk to the elephant population

Figure 18 shows that poaching incidents reached their peak in 2018. By the end of 2020, it went down to 6 elephants. Importantly elephant poaching raised during the hunting suspension period, probably linked to the decrease in benefits to local rural communities.

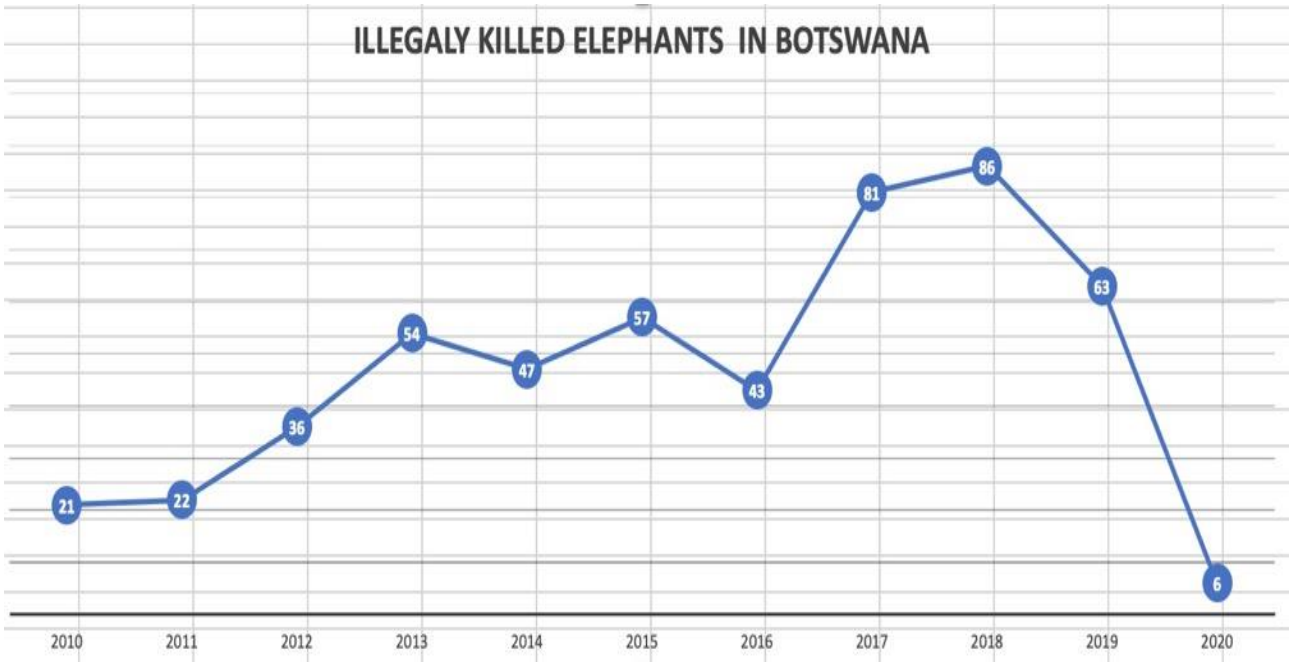


Figure 18: Illegally Killed elephants in Botswana. (Source: DWNP)

Data on illegal killings of elephants from the only MIKE site in Botswana (Chobe National Park) are reported in Table 5 below.

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

Table 5; Data on illegal killings of elephants from the only MIKE site in Botswana – Chobe National Park (Source DWNP and CITES MIKE portal https://cites.org/eng/prog/mike/index.php/portal).

d) Diseases

Elephant, like any other wildlife species is prone to diseases that could be either due to climatic and environmental factors or human activities. Two classic occurrences have been the occurrence of anthrax within the Chobe National Park, where major outbreaks occurred from 2004 to 2005 when an estimated 163 elephants died and as recent as 2019, and the cyanobacterial toxin-related elephant mortality within the Okavango Panhandle where an estimated 345 elephant died in 2020 and 39 in 2021.

DWNP has strategically implemented since the 2004 anthrax outbreak, a disease surveillance approach aimed at a) detecting mortalities as early as possible in order to trigger relevant and efficient responses and b) define proper selective responses depending on the analysis of the mortality cause and c) planning and implementing a long-term plan to respond to diseases occurrence.

The 2020 Panhandle mortality was discovered in March 2020 and confirmed in April 2020. DWNP lead a field investigation with other relevant experts from the Ministry of Agriculture and Food Security, in order to profile the disease dynamics and occurrence.

Thereafter, according to a proper methodology, biological and environmental samples were collected and sent to various laboratories around the world. Laboratory results highlighted the presence of cyanobacteria toxins and excluded other causes such as viruses, poison, pesticides, etc.

The DWNP is now looking into the details of molecular and genetics of the toxins to understand the drivers of cyanobacteria proliferations in natural water holes in collaboration with national and international stakeholders.

Drought periods such as the one in 2018-2019 could have contributed or exacerbated the above and further mortalities.

Harvest management:

10. Illegal off-take or trade: How significant is the national problem of illegal or unmanaged off-take or trade?	None	1
	Small	**2**
	Medium	3
	Large	4
	Uncertain	5

Botswana National Anti-Poaching Strategy (NAPS) was prepared in 2013 as a 5-year strategy whose implementation commenced in 2014. The NAPS 2014-2019 was commissioned by the National Anti-poaching Committee and prepared by a National Anti-Poaching Task Team. The National Anti-Poaching Committee, established in 2012, comprised primarily of law enforcement agencies with the Department of Wildlife and National Parks (DWNP) as the lead agency. Partners listed in the NAPS 2014-19 Action Plan are from a broad range of disciplines but exclusively government ministries and department.

Institutions assigned responsibilities in the NAPS 2014-2019 Action Plan include Department of Veterinary Services (DVS), Department of Wildlife and National Parks (DWNP), Botswana Prisons Services, Botswana Unified Revenue Services (BURS), Ministry of Local Government and Rural Development (MLGRD), Department of Roads (DoR), Department of Surveys and Mapping (DSM), Ministry of Basic Education and Skills Development (MESD), Botswana Tourism Organisation (BTO), Ministry of Foreign Affairs (MFA), Department of Immigration (DoI), Civil Aviation Authority of Botswana (CAAB), Department of Lands (DoL), Botswana Police Services (BPS), Botswana Defence Force (BDF), and Directorate of Intelligence and Security Services(DISS).

The current National Anti-Poaching Strategy (NAPS) developed in 2013 had not had the benefit of aligning with the Southern African Development Community (SADC) Law Enforcement and Anti-poaching Strategy as the latter was only developed in 2015.

Supported by UNDP, a NAPS 2021-2026 is being drafted and expected to be finalised by mid-August 2021: an evaluation report of NAPS 2014-2019 has been produced to establish the effectiveness of the design and implementation of the strategy through an expansive stakeholder consultation and understanding of the social, economic, ecological and institutional environment.

During the hunting period before the 2014 suspension, Anti-poaching was also part of the community escort guides' responsibilities that included wildlife monitoring and representing the community on the hunts, reporting any illegal activities to DWNP. When hunting closed down in 2013, the community escort guide activities were stopped. It has now resumed since hunting has been reopened especially starting from the current 2021 season.

Inter-agency collaboration between the Department of Wildlife and National Parks (DWNP), Botswana Police Service

(BPS) and Botswana Defense Force (BDF) has been hailed as a good practice and contributing to increased geographical coverage of anti-poaching operations and keeping poaching at minimum levels. This collaboration is part of a growing trend across Africa where rhino and elephant killings are rife and the rangers are under-resourced with limited military training. While armed anti-poaching had been promoted by poaching of megafauna species, it has indirectly also protected other species which would have otherwise suffered from bush-meat poaching.

The involvement of local communities in management and sustainable use of wildlife in Botswana has also been a strategic act of combating illegal resources-use by creating incentives for community conservation and reducing poverty. The proportion of people living in extreme poverty (defined as <US1.25/day) has been proven to correlate with the need of livelihoods options and have acted as a potential incentive to collaborate with commercial poachers (e.g.: Duffy et al 2013, Riehl 2015, Hauenstein et al. 2019) especially when legal livelihood options are not available.

Currently the Department of Wildlife and National Parks falls under the ambit of the Public Service Act and other related labor laws and thus is expected to fulfil generic working conditions across the public service. This is despite the fact that the field of wildlife management is unique in that it deals with wildlife especially wild animals and the dynamic human-wildlife interface particularly wildlife crime and human-wildlife conflict. As a result, it was cumbersome for DWNP to fulfil its mandate under the status quo.

To remedy to the above the Wildlife Service Act is being submitted to Parliament (the bill will be tabled either at the July 2021 or the November 2021 Parliament sittings). Once approved into law, it will transform the Department of Wildlife and National Parks into a full-fledged wildlife management authority in line with the uniqueness of every way possible including a dedicated and appropriately trained and equipped law enforcement unit fully mandated by law to carry out that mandate.

The aviation wing of the Department has a huge asset base in terms of different types and forms of aircrafts. These assets, comprising helicopters and fixed wing aircrafts, are primarily meant to carry out wildlife management activities especially law enforcement operations in their variety. Unfortunately, the asset base has not been operational for quite some time due to various reasons. This is currently changing as most of the assets are returning to service and all aircrafts should be in service in by end of July 2021. The availability of these assets is going to revolutionize wildlife monitoring and surveillance in a dramatic way especially the anti-poaching operations.

Table 6 below, illustrates some law enforcement results in Botswana.

				SEIZURES	ARRESTS		PROSECUTIONS**	LAW ENFORCEMENT TRASBOUNDARY OPERATIONS	
Year	Patrol Effort /Man nights	Effective man-power on the ground	# Elephant poached	Ivory*	Local	Foreign	Cases investigated	Transboundary meetings	Joint operations
2020	12880	1296	6	8	26	3	7	1	2
2019	9600	1120	63	86	35	7	24	15	18
2018	11400	880	57	60	42	12	26	15	17
2017	9600	820	76	77	33	5	19	14	15
2016	10800	760	36	90	36	18	25	12	15
2015	9600	620	37	115	38	12	25	12	13
2014	8400	580	42	110	47	11	28	12	13
2013	9000	500	22	108	65	18	35	12	13
2012	8700	490	21	199	64	27	42	12	13
2011	9600	420	6	70	36	18	26	12	13
2010	9600	420	14	4	No data	3	No data	12	13

**Number of ivory recovered includes finished products such as pieces of bracelets, necklaces amongst others, as well as tusks seized all over Botswana most of which are not necessarily linked to poaching but rather picking from natural mortalities.*
*** Prosecutions are dealt with by the Directorate of Public Prosecutions (DPP)*

Table 6: Summary of elephant-related Law Enforcement efforts/activities of DWNP 2010-2020 (Source: DWNP).

Overall, this NDF considers that the national problem of illegal or unmanaged off-take or trade on elephants is not significant.

11. Management history: What is the history of harvest?	**Managed harvest: ongoing with adaptive framework**	**1**
	Managed harvest: ongoing but informal	2
	Managed harvest: new	3
	Unmanaged harvest: ongoing or new	4
	Uncertain	5

Hunting in Botswana is regulated by the Wildlife Conservation and National Parks Act No.28 of 1992 and the Hunting and Licensing Regulations of 2001. Other applicable regulations include the Private Game Reserve Order and some Orders to restrict hunting of some species such as lion and cheetah. In Botswana, game licenses are of four kinds namely, bird license, single game license, small game license and special game license. The descriptions given in the following table (Table 7) on the different types of game licenses are derived from the Wildlife Conservation (Hunting and Licensing Regulations), 2001. Hunting licenses are only issued after the payment of applicable fees.

TYPE OF LICENSE	***NOTES***
Single Game License	*A single game license entitles the holder thereof to hunt individuals of the species specified in the hunting quota notice and endorsed on the license, during the period specified in the hunting permit and within an area or areas specified in the license.*
Small Game License	*A small game license entitles the holder thereof to hunt the species and maximum number of animals specified. The license is only issued to citizens of Botswana and is valid for the period specified therein. Only one small game license may be held by an individual at any one time.*
Bird Licenses	*A bird license entitles the holder to hunt any of the permitted game birds in areas, numbers and within the period specified in the license. Bird licenses held by Botswana citizens are valid for one year and those held by non-citizens are valid for one week, one month or one calendar year.*
Special Game License	*These are only issued to citizens of Botswana who depend principally on the hunting and gathering of veld produce for their food. It is issued specifically for subsistence purposes, so the holders are not permitted to sell their licenses or meat of the animals killed in respect of their licenses. The license allows the holder to hunt any animals other than protected game animals and is valid for one year. Unlike the other licenses discussed in this section, it is issued free of charge. The license specifies the maximum number of each species and kind which may be hunted and the period of validity of the license. Holders of special game licenses are not entitled to and cannot be issued with any other type of license.*

Table 7: Hunting licenses in Botswana. (Source DWNP-*Wildlife Statistics 2004. Central Statistics Office)*

After a self-imposed ban on elephant hunting that started in 1983, a limited quota of eighty (80) bulls approved by CITES was introduced in 1996. Thereafter and until 2014, quotas reached 400 bulls in 2013 (see point 14) when a new wildlife hunting suspension was declared.

Prior to the hunting suspension that started in 2014, hunting was undertaken seasonally, in various Controlled Hunting Areas (CHAs) which are designated and demarcated in the Wildlife Conservation and National Parks Act No.28 of 1992 and function as wildlife management units (see Figure 19) with various land uses.

A Nationwide Presidential Cabinet Sub Committee on the Social Dialogue on the hunting suspension was set up in 2018 to review suspension which effected in 2014. The report of the Sub Committee (Republic of Botswana 2018), after extensive countrywide public consultations, advised for the lifting of the hunting suspension with a series of recommendations including a priority system for allocation of hunting quotas to CBOs/Trusts.

On the basis of that report, an announcement by the Ministry of Environment, Natural Resources Conservation and Tourism was made in May 2019 to officially lift the hunting moratorium of 2014. The Government of Botswana has assessed all recommendations contained in the report of the Presidential Sub Committee and has accepted all but one recommendation which makes reference to regular culling of elephants and establishing an elephant meat canning including production of pet food. This was rejected because culling is not considered acceptable given the overall continental status of elephants. Rather, a more sustainable method such as selective cropping should be employed.

Therefore, the principal recommendation that has been adopted is the one which proposes the re-instatement of hunting according, inter alia, to these criteria:

- *Hunting will be allowed on a small, strictly controlled basis, with fewer than 400 elephant licenses to be granted annually, as has been approved by CITES. (Priority will be given to Community Based*

Organizations (CBOs) and Trusts in allocation of hunting quotas (over 50% of quota to be given to CBOs and Trusts));

- *Hunting will be re-instated only in designated Controlled Hunting Areas (CHAs);*
- *An effective hunting quota allocation system shall be developed based on science;*
- *A legal framework that will create an enabling environment for growth of safari hunting industry will be developed;*
- *The Botswana elephant population will be managed within its historic range;*
- *An effective community outreach program within the elephant range for Human Elephant Conflict mitigation will be undertaken;*
- *Game Ranches will be demarcated to serve as buffers between communal and wildlife areas; and,*
- *Compensation for damage caused by wildlife, ex gratia amounts and the list of species that attract compensation be reviewed; and other models that alleviate compensation burden on government be considered.*

The above 2019 decision allocated quotas for hunting elephants in 2020, for both citizen hunters and international clients. Due to the outbreak of the COVID-19 pandemic and associated restrictions of international travel, the 2020 quotas for international tourist hunters were rolled over to 2021.

In accordance with the Wildlife Conservation and National Parks (Open Season Hunting Declaration) Order, 2021 of 26th March, 2021, the period beginning 6th April, 2021 to 31st December, 2021 was declared open season for special elephant quota and the period beginning 6th April, 2021 to 21st September,2021 was declared open hunting season for all the other controlled hunting areas with the exception of citizen elephant hunting in NG1,NG2, NG7, CT8, CT10, CT16, CT18, CT20,CT21, CT24, CT25, CT26 and NE 1 where the hunting season goes from 6th April, 2021 to 31st January, 2022.

The controlled hunting program 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.

Annually, specific numbers of applicable species of animals are allocated for hunting to each CHA. That is what comprises the CHA's wildlife hunting quota. The quotas are of three categories which are described (Wildlife Statistics 2004 Central Statistics Office), in brief, immediately below:

a) Community Managed Areas (CMA)

Some CHAs are leased to Community Based Organizations (CBOs) and are therefore referred to as Community Wildlife Managed Areas (CWMA) or Community Controlled Hunting Areas (CCHA). A CBO is a legal entity formed by a community to represent the community's interest and implement their management decisions. A community refers to a diverse group of people with varied socio-economic interests and capabilities sharing an interest in conservation and living within a legally defined geographic area.

CMAs are planned around protected areas (National Parks, Game Reserves and Sanctuaries) and are allocated to existing settlements found in those areas. Communities living in, or immediately adjacent to, these CHAs are able to lease them from the respective Land Authorities in order to improve their standard of living by using and managing the resources contained therein in such a way that local people benefit through increased incomes.

Annually, over the period March - April, CBOs apply to DWNP for the wildlife hunting quotas that they require. Every CMA hunting quota, for which license and hunting permit applications are presented and appropriate fees paid, is granted the applicable number of single game licenses and permits.

The beneficiary CBO can utilize the quota either wholly commercially, or partially commercially with a proportion of the quota being reserved for subsistence. There are four principal ways of the commercial utilization of CMA wildlife hunting quotas:

- <u>Joint Venture Agreement</u>
This is a CMA quota utilization method whereby the community sub-leases sections of their CHA and wildlife quota to a private sector company which operates more or less independently of the CBO. Sub-leasing their CHA requires less investment and risk taking than other methods of quota utilization, gives the community comparatively low individual benefits and offers the community minimum skills-transfer.

- <u>Joint Venture Partnership</u>
In this category of CMA quota utilization, the community works together with a private company in a joint enterprise,

sharing its risks, responsibilities and benefits. It is characterized by increased decision-making power for the community and development of local capacity but poses a higher risk for the community's earnings than does the Joint Venture Agreement category.

- Auctioning
The community may also choose to auction their quota and sell it to the highest bidding company. This method of quota utilization is characterized by minimum risk to the earnings of the community, minimum or no skills transfer and low individual cash earnings, among others.

- Direct Marketing
The community utilizes their quota themselves (independently of private companies) and sells the resulting products directly to clients. The community retains all decision-making and management responsibilities. The option is best suitable for communities with the necessary skills for efficient quota utilization. It is characterized by very high business risk and insecure cash earnings for the community.

b) Concession Areas

Concession areas refer to CHAs that are leased to Safari Hunting Companies or concessionaires. In order to select the latter, Government advertises the CHAs available for leasing, and interested concessionaires bid for the CHAs. The concessionaires are required to present a management plan that shows how they intend to manage the applicable CHAs if they are leased to them. The plan has to specify the planned improvements and environmental and natural resource management intentions - for example, plans for the provision of water for animals and the measures that will ensure sustainable use of the environment in general.

After the bidding process the successful concessionaires are informed in writing. Using the information on the quotas allocated to each species, they use the notice to apply for single game licenses and hunting permits that they must have before they utilize their quota. As is the case with CMAs quotas, every concession hunting quota for which a license application is presented and fees paid is granted the applicable number of single game license.

c) Citizen Wildlife Hunting (see also point 17)

There are some CHAs that are not leased to the two categories of CHA leaseholders in any one year. The wildlife hunting quotas allocated to this group of CHAs are referred to as Citizen wildlife hunting quotas, which as the name implies, are allocated only to citizens of Botswana. In order to select the beneficiary citizens, Government advertises the CHAs and respective quotas that are available for each year and individual citizens apply for the quotas that are of interest to them. Since the number of applications always exceeds the number of animals in the quota, selection of the individual beneficiaries of the quota is by a raffle system. Raffling is conducted at the district level in every district where there is a citizen hunting quota. An individual who wins an animal pays for the respective hunting license and permit in order to be free to hunt.

The reopening of hunting is managed by a set of Guidelines (Hunting and Escort Guidelines DWNP 2019) indicating that hunting will take place in areas where:

(i) Human Wildlife Conflict (HWC) is high;
(ii) Community Based Organizations (CBO's) have lost significant revenue due to the hunting moratorium, improving provision of employment and source of protein;
(iii) Controlled hunting has taken place before for Special Elephant Quota (High Conflict Areas);
(iv) Poaching incidents have been consistently reported;
(v) There will be no adverse effects on photographic tourism;
(vi) Any proposed off take will not be detrimental to the population;
(vii) There are opportunities to improve citizen empowerment and involvement in the sector.

In detail these are the different categories prescribed by the Hunting and Escort Guidelines:

Citizen Hunting Areas with Elephant quotas. *NG1, NG2, NG7, CT8, CT10, CT16, CT18, CT20, CT21, CT24, CT25, CT26 and NE 1*

The conditions for this category are:

- *Licenses are available over the counter through Department of Wildlife and National Parks (DWNP) offices*
- *P8,000 per elephant license fee payable to DWNP: A raffle will be used to allocate quota*
- *Strictly non-export*
- *Hunts must be accompanied by Professional Hunter (preferably citizen with appropriate experience)*
- *Where feasible carcass delivery to closest beneficiary community/village*

- *The hide should be salted and retained for added value products*
- *License is non-transferable but may be endorsed if hunting is done on behalf of license holder*
- *The hunter should be in legal possession of minimum a .375 caliber hunting rifle (common requirement in all areas)*

Community Managed Areas *NG3, 4, 5, 13, 41,49 CT27 CH1,8*

A Community Utilization Area is a Controlled Hunting Area allocated to a community that has formed a Community Based Organization (CBO).

- *Quota for each area to be determined by DWNP and in the future, as indicated in the Elephant Management Plan, participatory quota setting mechanisms will be devised and implemented.*
- *Quota will be available for purchase by Botswana-based operators only*
- *License and CHA fees will be payable to DWNP*
- *The entire quota for each area will be sold under tender and accrues to the relevant CBO/Trust*
- *Hunting trophies are exportable*

Hunting Concession Areas *NG43, NG47, CT1, CT2*

A Concession area is an area which has been leased to the private sector.

- *The game animals to be hunted will be prescribed in the hunting quota*
- *DWNP to determine quota*
- *The entire quota for each area sold*
- *License fees will be payable to DWNP*
- *Hunting trophies are exportable*
- *The licenses will not be transferable to other CHAs*

Special Elephant Quota Hunt Areas (High Conflict Areas) *NG8, NG9, NG11, NG35, CT4, CT7 and CT29*

- *The elephant license fee of P20 000 is payable to DWNP*
- *Method of quota is disposal will be by auction or selective tender*
- *Revenue from auction will accrue to the Conservation Trust Fund (CTF) (see point 22)*
- *Twenty five percent (25%) of the quota will be reserved for purchase by Batswana-owned operators*
- *Seventy five percent (75%) of the quota will be reserved for purchase by Botswana-based operators*
- *Hunting trophies are exportable*

All hunts shall be conducted in the presence of an experienced professional hunter and accompanied by a DWNP Escort Officer or Community Escort Guide. The Hunting and Escort Guidelines will be reviewed at the end of every hunting season to enhance efficiency of the hunting activity.

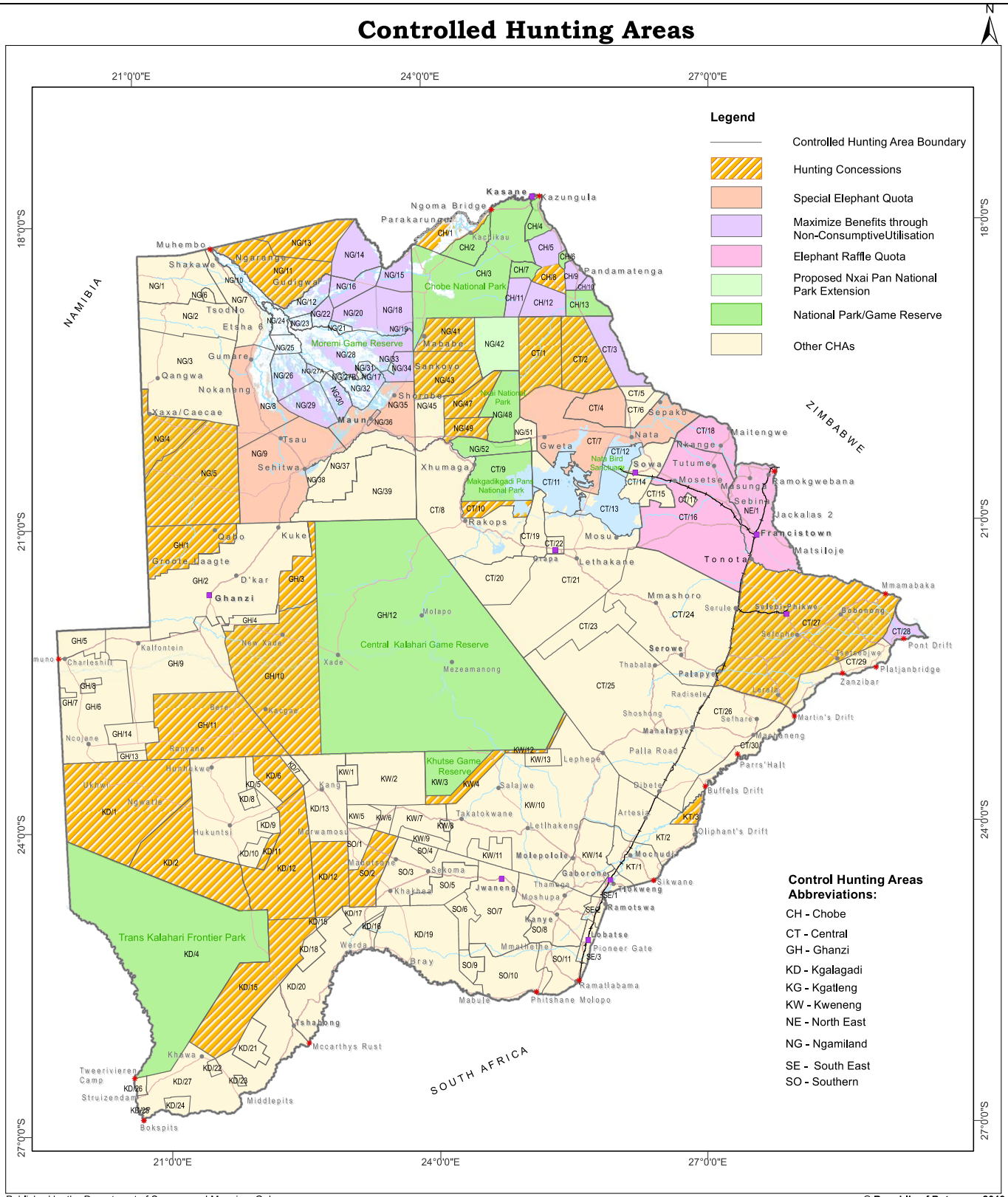


Figure 19: CHAs and land-uses for elephant management (Source: DWNP).

12. Management plan or equivalent: Is there a management plan related to the harvest of the species?	Approved and coordinated local and national management plans	1
	Approved national /state/provincial management plan(s)	**2**
	Approved local management plan	3
	No approved plan: informal unplanned management	4
	Uncertain	5

A new Botswana Elephant Management Plan and Action Plan 2021-2026 has been approved on 31 March 2021 and launched on 30 April 2021 by His Honour Mr Slumber Tsogwane, the Vice-President of the Republic of Botswana.

The process of the development for the Elephant Management Plan 2021-2026 began in June 2018 with four national consultation workshops taking place in 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. The COVID-19 Pandemic at the beginning of 2020 delayed the finalization and approval of the Plan.

This new plan is based on a Logical Framework format. The Vision and targets as well as objectives and activities have been devised around six key components:

- *Protection and law enforcement*
- *Human-elephant-conflict management*
- *Management and ecological monitoring*
- *Social and Economic framework*
- *Conservation capacity*
- *Coordination and collaboration*

Previous Management Plans which have been implemented in Botswana include:

a) The Conservation and Management of Elephants in Botswana Plan (CMEBP) – DWNP 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 Human-elephant conflict (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.

b) *The National Policy and Strategy for the Conservation and Management of elephant in Botswana. DWNP 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.*

13. Aim of harvest regime in management planning: What is harvest aiming to achieve?	**Generate conservation benefit**	**1**
	Population management/control	2
	Maximize economic yield	3
	Opportunistic, unselective harvest, or none	4
	Uncertain	5

The Elephant Management Plan and Action Plan 2021-2026 aims 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 minimizing their negative impacts on rural livelihoods through three main targets:

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

The harvest regime is aimed at achieving conservation benefits with the reinvestment of revenues in conservation activities with benefits for the local communities thereby increasing tolerance for elephants.

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 communities Trusts in Botswana experienced large declines in income, especially those in WMAs with marginal photographic tourism potential, where some Trusts completely collapsed.

The management of elephants will be carried out within the context of the Wildlife Policy of 2013 which placed emphasis on 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, decentralization 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.

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 maximize 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.

14 Quotas: Is the harvest based on a system of quotas?	**Ongoing national quota: based on biologically derived local quotas**	**1**
	Ongoing quotas: "cautious" national or local	2
	Untried quota: recent and based on biologically derived local quotas	3
	Market-driven quota(s), arbitrary quota(s), or no quotas	4
	Uncertain	5

The allocation of elephant on the Recommended Allowable Offtake (RAO) quota system commenced in 1996 (Table 8), based on scientific guidelines produced in 1993 and regularly updated. Quotas set internally by Botswana have often been lower than the requested CITES quota for a variety of reasons including biological, administrative and market considerations. Quotas are based on a number of parameters and the main 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 MIKE data)*
- *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 as per protocol, 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 analyzed 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

The above has guided quota setting from 1996 until 2013 which was the last year of elephant hunting before the 2014 suspension. The same system has been maintained when hunting was reopened in 2019 although, as explained in point 11, due to the COVID pandemic hunting has resumed only in 2021.

In examining trophy hunting in Botswana over 15 years, Craig et al (2011) found:

"The quotas set for trophy hunting in Botswana from 1996-2010 reached a maximum of 0.2% of the total population in 2009 (in 2013 0,25%). This is low by any regional standards where, for years, elephant managers have typically set quotas around 0.5% of the total population. This accounts for the very high standard of the trophies taken over the past 15 years and the DWNP should be complimented for the conservative approach they have taken in increasing quotas over the years. This is good adaptive management. A remarkable feature of the Botswana hunting data from 1996-2010 is that the proportions of tusks of different sizes taken in the hunting concessions over 15 years of hunting remained constant from year to year. In undertaking this study, we expected to find that, at the start, a large proportion of the trophies would be the biggest tusks in the population and that the mean tusk weight of the trophies would decline thereafter. This was not the case: the manner in which the safari operators managed their hunting quotas over a decade ensured that the flow of hunting trophies was of a high quality and was sustainable."

Year	CITES Quota	BW Internal Quota	Estimated population within confidence limits	Total offtake (Citizen offtake)	Mean tusk weight (both tusks)
1996	80	77	100,538	33 (0)	53.0 kgs / 116.86 lbs.
1997	87	78		51 (0)	48.4 kgs / 106.72 lbs.
1998	168	168		99 (0)	47.6 kgs / 104.95 lbs.
1999	174	168	120,604	113 (0)	47.7 kgs / 105.39 lbs.
2000	180	168		155 (0)	47.6 kgs / 104.95 lbs.
2001	180	180	117,000	133 (0)	50.6 kgs / 111.57 lbs.
2002	210	192	123,152	132 (1)	48.3 kgs / 106.5 lbs.
2003	210	192	109,472	139 (2)	48.2 kgs / 106.3 lbs.
2004	210	192		147 (8)	48.8 kgs / 107.6 lbs.
2005	210	192	151,000	173 (9)	49.4 kgs / 108.9 lbs.
2006	270	270	154,658	252 (21)	48.7 kgs / 107 lbs.
2007	300	290		253 (21)	48.5 kgs / 107 lbs.
2008	330	307		269 (9)	47.2 kgs / 103 lbs.
2009	400	354		271 (2)	46.5 kgs / 103 lbs.
2010	400	341	128,430 (ambiguous)	308 (28)	44.2 kgs / 97 lbs.
2011	400	400		286 (0)	47.5 kgs / 104.8 lbs.
2012	400	388		298 (21)	46.1 kgs / 101.6 lbs.
2013	400	396	156,401	322 (14)	46.1 kgs / 101.7 lbs.

Table 8: Trend of quotas, estimated population, offtakes and trophy weights from 1996 to 2013. (Source DWNP and Mochaba)

Offtake locations and mean tusk weight reported in Table 8, for the period 1996-2009, were plotted by Craig et al (2011), and the output is summarised in Figure 20 below.

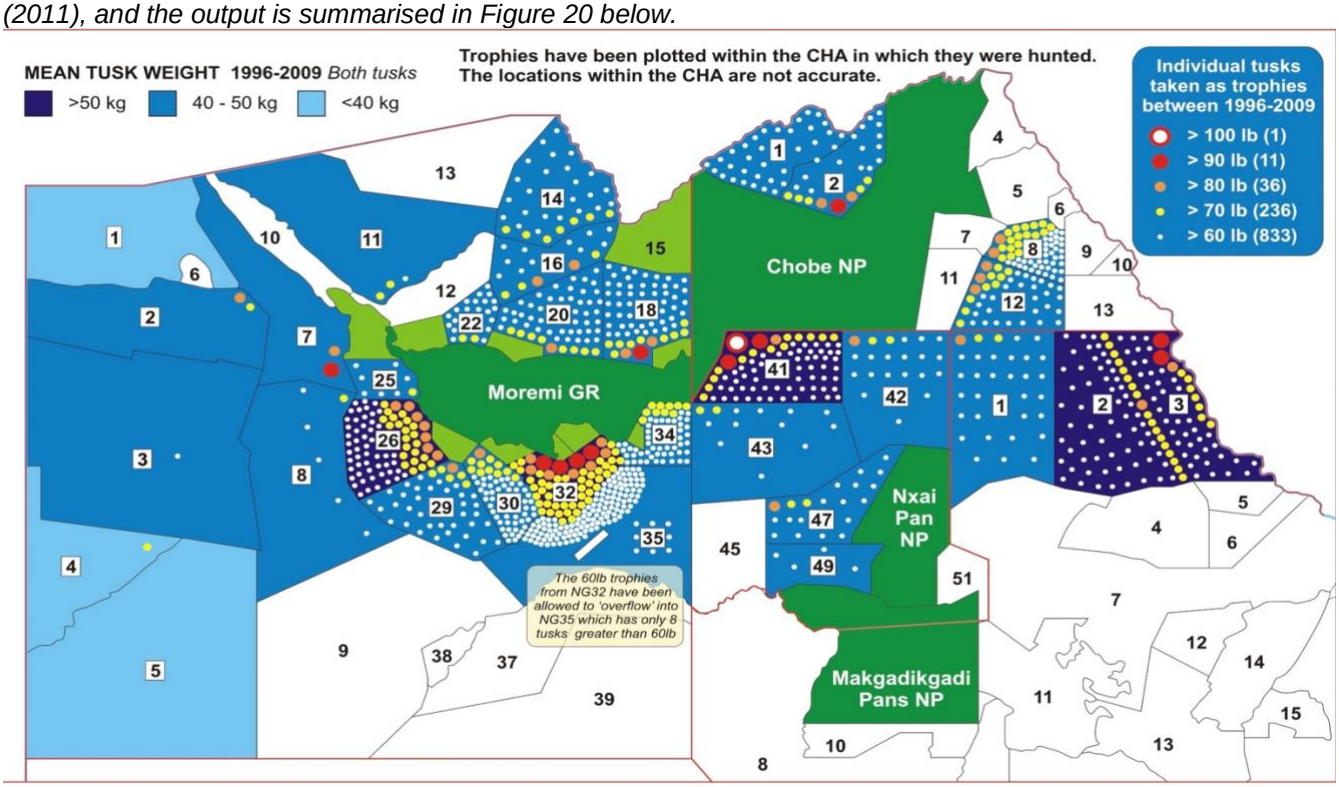


Figure 20. Trophies and tusk weight of sport hunted elephants 1996-2009 plotted within CHAs (from Craig et al 2011)

In 2021, Martin & Peake (Martin & Peake in prep.) updated Figure 20 with data for the period 2010-2013, and the output is shown in Figure 21 below:

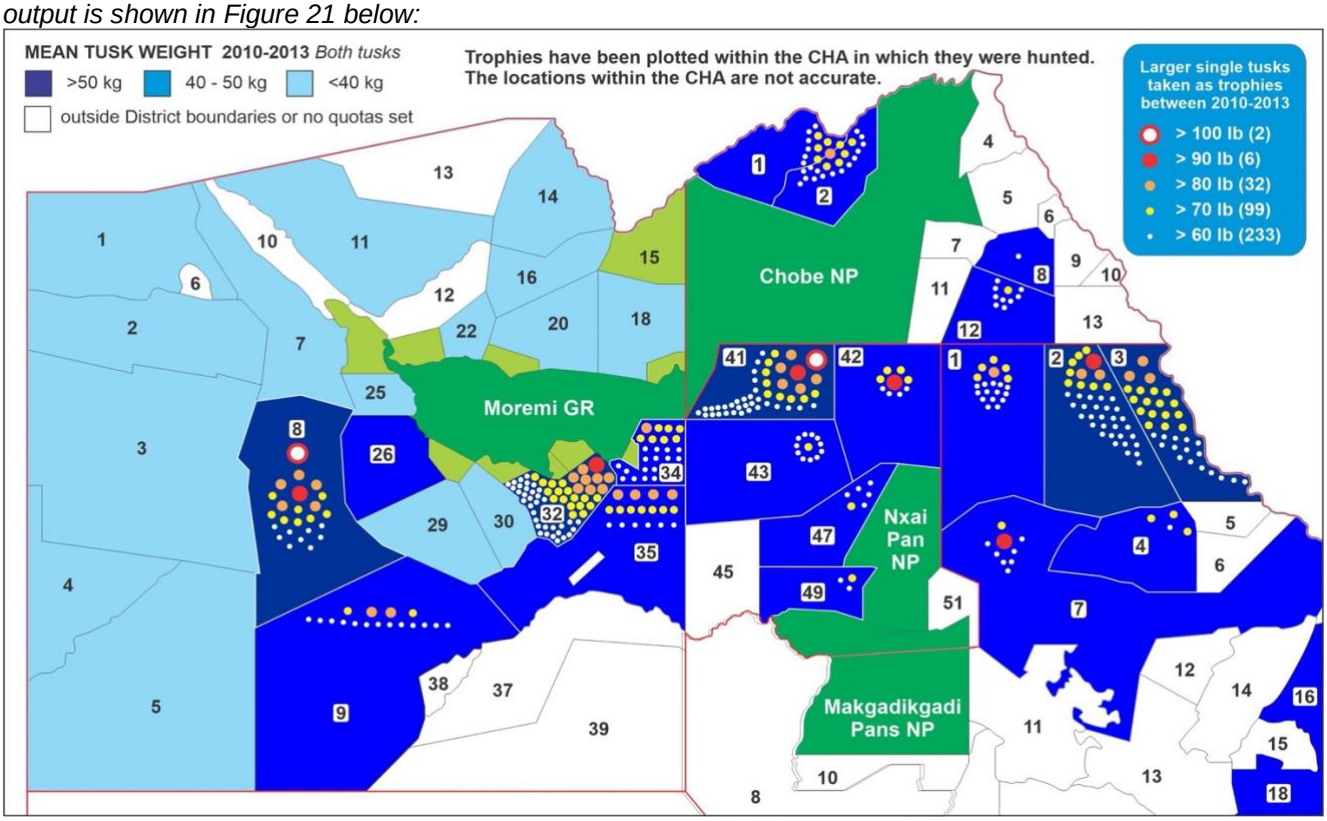


Figure 21. Trophies and tusk weight of sport hunted elephants 2010-2013 plotted within CHAs in which they were harvested (Martin & Peake 2021 in prep.).

Evidently, elephant hunting quota setting has been not only extremely conservative but the resulting harvest (offtake) has been eminently negligible in biological terms.

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 levels to obtain a sustainable number of trophies of constant and economically acceptable average size. Safari hunting has had 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 0.26 % of the total huntable population (which is about 75% of the population); this % would be even much 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.

Wildlife populations can be managed indefinitely even without knowing the size of the population; this is because using the feedback from indicators, such as trophy quality (e.g., mean tusk weights) and mean age, quotas can be increased or reduced to achieve a desired level. Moreover, this method overcomes the problems of trying to set quotas based on a percentage of the population size because it is not subject to the uncertainties of population estimates. However, Botswana is using both methods.

Importantly point 2 in the Annex of CITES Resolution Conf. 14.7(Rev.CoP15) states: "In the context of CITES, an annual export quota is a limit on the number or quantity of specimens of a particular species that may be exported from the country concerned within a 12-month period. An annual export quota is not a target and there is no need for a quota to be fully used. It is recognized that there are some cases in which it is likely that the export of specimens removed from the wild will occur after the year in which the removal took place, as happens with hunting trophies."

Quotas exceeding 1% of an elephant population are eminently sustainable in biological terms but totally incompatible with the notion of a high-quality elephant tourism hunting safari industry. Botswana could remove in excess of 1,300-1,500 (and even more) elephants each year without any detriment to a population that is growing at an average rate of 6% each year.

In the 2021 hunting season, carried forward from the unused 2020 season, 236 elephants have been allocated in hunting quotas for foreign tourist hunters and 95 to citizens. This is again extremely conservative.

Therefore, the findings of Craig et al 2011 are confirmed in this NDF. "The impact of trophy hunting on the elephant population is negligible in biological terms. Trophy hunting has no effect whatsoever on limiting population growth. Conventional concepts of biological sustainability have little relevance to trophy hunting. Long before the population of adult males becomes totally depleted, the safari industry causing the depletion would have collapsed. In the lower weight classes (animals carrying tusks less than 22kg) there are thousands of animals in the population. Quotas exceeding 1% of the population are eminently sustainable in biological terms but totally incompatible with the notion of a high-quality elephant trophy hunting safari industry" (Craig et al 2011).

Actual offtakes and their quality and not quotas are among the important considerations in guiding management decisions.

In point 19 we will analyze how the monitoring of tusk weight, among other systems, have informed quotas and offtakes.

Hunting quotas were issued in 2020, but due to challenges posed by the COVID-19 pandemic, the community and concession area quotas as well as the Special Elephant Quota were not utilized. The Citizen quota was partially utilized in 2019 and 2020 although the hunting season was cut short due to the pandemic. The travel restrictions due to COVID 19 had made it impossible for the 2020 hunting season to be executed hence the Department of Wildlife and National Parks has rolled over the 2020 quotas to the 2021 hunting season, allowing for communities living with wildlife to fully benefit from this resource and accrue revenues to improve their lives. As previously indicated, special elephant quotas were allocated in areas with high incidences of human elephant conflict as a way to deter elephants away from human settlements and creating an opportunity for communities to benefit from wildlife sustainable utilization.

Control of harvest		
15. Harvesting in Protected Areas: What percentage of the legal national harvest, occurs in State-controlled Protected Areas?	~~High~~	~~1~~
	~~Medium~~	~~2~~
	~~Low~~	~~3~~
	~~None~~	~~4~~
	~~Uncertain~~	~~5~~

In the "CITES Scientific Authorities Checklist" that was used as the framework to compile this NDF, this particular point is meant to indicate State Protected Areas existing in some countries where wildlife utilisation is allowed, such as the Game Reserves in Tanzania, to cite an example from the SADC Region. In Botswana this is not the case because hunting ***is not*** *permitted in Protected Areas (National Parks, Game Reserves) in accordance with the Wildlife Conservation and National Parks Act 1992 and implementing Regulations, in order to provide all wildlife maximum protection from human utilization. As a consequence, the scoring system used in the CITES Scientific Authorities Checklist is not appropriate for Botswana because the fact that no hunting is taking place in protected areas would result in a punitive high scoring indicative of a detrimental action (None=4). Therefore, no score has been assigned for this question.*

16. Harvesting in areas with strong resource tenure or ownership: What percentage of the legal national harvest occurs outside Protected Areas, in areas with strong local control over resource use?		
	High	**1**
	Medium	2
	Low	3
	None	4
	Uncertain	5

The wildlife estate in Botswana makes up about 40% of the country's surface area comprising of (i) National Parks and Game Reserves gazetted under the Wildlife Conservation and National Parks Act No.28 of 1992 as Protected Areas (115,819 km^2 - 18% IUCN Category Ib) and (ii) Wildlife Management Areas (WMAs: 143,070 km^2 22%, IUCN Category V) whose primary purpose is wildlife use and only activities that are compatible with wildlife are permitted and form a buffer between parks/reserves and agricultural areas, and include corridors that connect parks and reserves. The WMAs are located mostly on tribal land while parks and reserves are all on State land with the exception of Moremi Game Reserve. Lastly, Forest Reserves declared in accordance with the Forest Act (1968), cover 4,207 km^2. Direct use of the Forest Reserves is minimal since the 1992 suspension of timber logging; only subsistence uses by surrounding communities is permitted for firewood collection, thatching grass and fruit gathering (Forest Conservation Strategy 2013-2020). Land use over most of the remainder is extensive subsistence pastoralism and subsistence crop farming on communal land (Figure 22).

There is arable cropping in the east and south, irrigated vegetable farming along river courses, and commercial livestock and game ranching on privately owned or leased land. Land outside the protected areas may be declared to be a Controlled Hunting Area (CHAs).

The veterinary cordon fences that separate Protected Areas and WMAs from communal and agricultural land, and the livestock fences that control the movements of livestock are in most cases permeable to elephants, allowing almost unhindered connectivity between elephant populations in different areas and land uses.

Community managed areas, leased concessions and Special Elephant Quotas Areas (see also point 11) are considered areas with strong resource tenure.

Botswana law recognizes three categories of land tenure system, namely: state land; tribal land and freehold land. State land is administered according to the State Land Act (1966) by central government and local government councils, while tribal land is administered by Land Boards in terms of the Tribal Land Act (1968). Tribal land is either held by the land board itself or by eligible applicants as customary grants or common law leases.

Moreover, a variety of relevant laws and policies have influence on conservation activities:
Wildlife Conservation and National Parks Act (1992), and its Regulations
Wildlife Conservation Policy (2013)
Forest Act (1968)
Forest Policy (2011)
Tourism Policy (1990, updated 2021)
Rural Development Policy (2002)
Eco-Tourism Development Strategy (2002)
Vision 2036: Achieving Prosperity for All (2016)
Botswana National Development Plan 11 (2017 to 2023)
National Biodiversity Strategy and Action Plan (2016)
National Policy on Natural Resources Conservation and Development (1990)
CBNRM Policy (2007)
Land use plans such as Okavango Delta Management Plan (ODMP) 2008 and Ngamiland District Integrated Land Use Plan (2009)

Some of these laws and relevant policies dictate that access to, and use of, natural resources found on state land and tribal lands is through lease arrangements. Communities may apply for a Community Natural Resources Management Lease from the relevant Land Authority for commercial use of natural resources. Such leases are

termed as the 'Head Lease'. These leases are for a period of 15 years during which communities may directly derive benefits from utilizing the natural resources. The communities may not sublease or transfer user rights to one or more joint venture partners without prior written consent of the Land Authority.

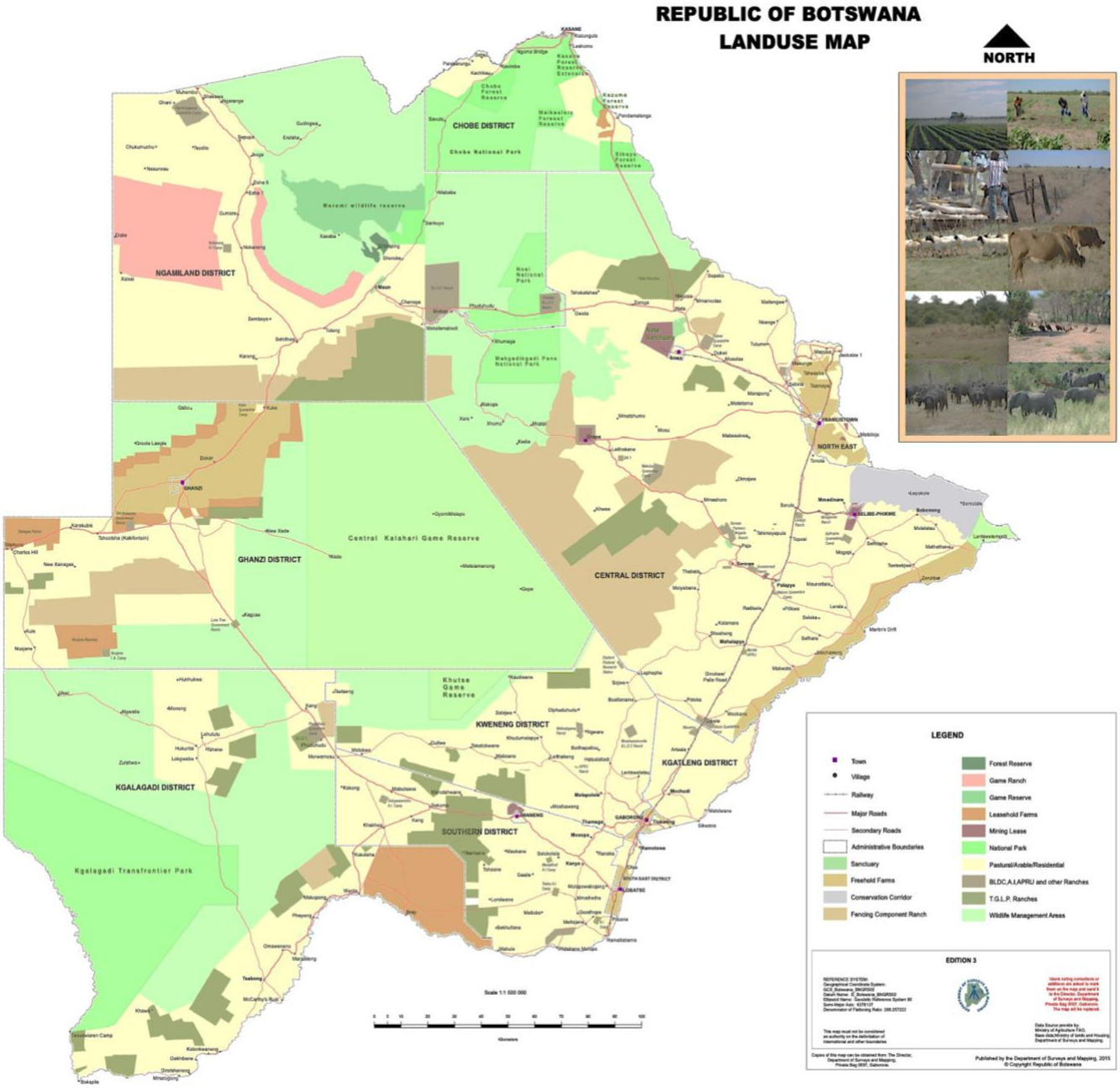


Figure 22: Designated Land Uses in Botswana (Source: Dept. of Surveys and Mapping).

In Botswana, Community based Organizations (CBOs) are supported by Department of Wildlife and National Parks (DWNP) and other government departments, while at district level the Technical Advisory Committees (TACs) support CBOs.

The latest CBNRM Review (Center for Applied Science 2016) analyzed the impacts of the hunting ban.

Out of 94 registered CBOs, 53 were active and 44 responded to the questionnaire submitted by the reviewers.

The following impacts were found for 44 CBOs:

- *Serious survival problems for hunting CBOs that do not have a potential for ecotourism due to the marginal areas where they are located.*
- *There has been a mixed impact on revenues of former hunting CBOs:*
  Positive for only 6 out of 44 responding CBOs after conversion to ecotourism. Of these six CBOs, two account for up to 70% of the revenue increase.

Negative for most other former hunting CBOs;

- *Loss of game meat that was given to CBOs: game meat was highly valued as a CBNRM benefit; Blackie et al (2019) found that prior to 2014, local communities living in proximity to wildlife management areas (WMAs) benefitted from readily available meat from animals that were shot in their concessions. CBOs had entered into agreements with hunting safari companies so that all the carcasses from hunted animals would be given to local communities through their Trusts. The CBOs sold the most valuable meat from the buffalo and impala which were the most preferred while meat from less preferred animals such as elephants and lions was given to locals for free. Onishi (2015) reported that one CBO raised $600,000.00 in 2010 from the sale of the 120 animals that were allocated in its hunting quota and where all the meat remained in the community.*
- *Job losses reported by in the majority of CBOs Ngamiland CBOs (the district with the most numerous elephant population) at the 2016 CBNRM Forum conference;*
- *Reduction of wildlife monitoring and annual reporting as CBOs no longer apply for hunting quota;*
- *Loss of value added and employment of most of the hunting sector;*

The impacts of the hunting ban were also analyzed by Mbaiwa (2017a) which reported, inter alia, that: "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, in 2008, safari hunting generated P7,382,097 while photographic tourism generated only P2, 374,097 (Johnson, 2009 in Mbaiwa 2017a). Between 2006–2009 safari hunting by communities generated P33, 041, 127 while photographic tourism generated only P4, 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 & Stronza, 2010). In addition, 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, Mbaiwa 2005, Mbaiwa 2017b)."

Before the hunting suspension, a total of 14 Trusts in Botswana had a total of 111 escort guides to control poaching and ensure compliance with hunting regulations (Mbaiwa 2013). Escort guides have proved effective in ensuring that hunting is controlled in CHAs. They accompany hunters in their hunting safaris. The effectiveness of escort guides and their desire to conserve resources in their CHAs is further demonstrated by their numerous patrols in their areas. All these efforts indicate the role that communities have so far played in natural resource conservation in their ecotourism areas. Escort guides monitor the activities of the joint venture partner during hunting and photographic activities and record all animals killed or spotted at specific locations in the CHA. They are also responsible for reporting and apprehending poachers. Ideally, they should record GPS coordinates, type of animal species and number. Escort guides also accompany thatch grass harvesters, who are mainly women, making it possible for them to reach out to areas they may otherwise not. This contributes to enhanced access to resource abundant areas (Mbaiwa, 2013).

Escort Guides play a significant role in resource monitoring and use by their communities. There is, therefore, evidence suggesting that communities involved in CBNRM have gained awareness about the importance of using natural resources in a sustainable way. There is a general perception in most CBOs that CBNRM contributes to the reduction of poaching (Mbaiwa & Stronza, 2010; Arntzen et al 2003, 2007). This was partially disrupted during the hunting suspension period and now is resuscitated since the reopening of hunting.

Tshipa et al. (2017) emphasized the importance of community conserved areas: elephants that migrated from Hwange to Botswana mostly moved into Wildlife Management Areas (e.g., hunting and photographic concessions), outside of formally protected areas. They conclude that "This confirms the importance of conservation strategies that include areas outside protected areas and specifically underlines the importance of the private sector and communities to effectively protect elephants".

Blackie (2019), reported that the hunting suspension was implemented contrary to the "principle of consultation—therisanyo" which is rooted in the democratic ideals of Botswana for citizen participation and inclusiveness in policy discourse. Botswana has always upheld the practice of consultation to afford the general public an opportunity for an open dialogue and mutual respect leading to the crafting of sound policies and strategies (Stredman, 1993). The lack of consultation approach used to instate the hunting moratorium has "removed the sense of pride for owning land and natural resources" and thus created a perception that locals do not own the wildlife resources (including those in their CHAs). During the ban local communities viewed the wildlife as state property, and any costs that arise out of wildlife was attributed to the government and therefore they demanded full compensation for such costs (crop damage,

livestock predation and loss of human life).

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 Elephant Management Plan and Action Plan.

The Government of Botswana, together with FAO and UNDP, is drafting a CBNRM Act to streamline the CBRNM program that has been run for over twenty years without any guiding legislation. A series of participatory workshops were conducted in 2020 and 2021. A CBRNM Practitioner's User Manual is being drafted to support the new legislation.

The final draft of the CBRMM Act and the CBRNM User Manual are being prepared and final stakeholders' inputs will be sought by the Ministry of Environment Natural Resources, Conservation and Tourism, before submission to Cabinet and then Parliament as it is customary to do that.

17. Harvesting in areas with open access: What percentage of the legal national harvest occurs in areas where there is no strong local control, giving *de facto* or actual open access?	None	1
	Low	**2**
	Medium	3
	High	4
	Uncertain	5

There are some CHAs that are not leased to the two categories of CHA leaseholders (Communities and concessionaires) in any one year. The wildlife hunting quotas allocated to this group of CHAs are referred to as Citizen wildlife hunting quotas, which as the name implies, are allocated only to citizens of Botswana. In order to select the beneficiary citizens, Government advertises the CHAs and respective quotas that are available for each year and individual citizens apply for the quotas that are of interest to them. Since the number of applications always exceeds the number of animals in the quota, selection of the individual beneficiaries of the quota is by a raffle system. Raffling is conducted at the district level in every district where there is a citizen hunting quota. An individual who wins an animal pays for the respective hunting license and permit in order to be free to hunt.

The Elephant Management Plan 2021-2026 includes, among others, one action aimed at mobilizing [Community] new trusts or resuscitate existing [Community] trusts. The Department of Wildlife and National Parks has recommended to Government the need to devolve user rights of this group of CHAs to deserving local communities, and is engaging other stakeholders (including land authorities) to assign Citizen elephant quotas and Special elephant quotas to relevant CBOs with longer tenure and stronger resource rights especially for the Citizen hunting areas.

18. Confidence in harvest management: Do budgetary and other factors allow effective implementation of management plan(s) and harvest controls?	**High confidence**	**1**
	Medium confidence	2
	Low confidence	3
	No confidence	4
	Uncertain	5

All activities with regards to elephants' harvest require permits, starting from hunting, exportation of trophies and ownership of tusks by citizen and non-citizens.

The quota system, the licensing system, Hunting and Escort Guidelines are among the tools that efficiently allow DWNP to control harvest. The quota allocation is informed by the aerial counts reports that are conducted every five years. There is also Management Oriented Monitoring system data which used together with aerial survey data to inform quota setting. After a quota is officially approved by the Director of DWNP, the hunting season is gazetted by the Minister of Environment, Natural Resources Conservation and Tourism, further providing another control level on the management of offtakes.

In accordance with Action 10 under Component 11.6 of the Elephant Management Plan 2021-26 DWNP has drafted priorities and budget for the first year of implementation of the recently approved Management Plan. Part of revenue generated from special elephant hunting quota (channeled through the Conservation Trust Fund) will be used to fund some of the activities of the Elephant Management Plan and Action Plan. Some of the activities would be funded by the DWNP annual budget. As the National Anti-poaching Strategy calls for interagency collaboration, other budgets are provided by other agencies in ensuring effective implementation of actions of the elephant

management plan. Additional resources have been committed by NGOs, the private sector and International Cooperating Partners.

Monitoring of harvest

19. Methods used to monitor the harvest: What is the principal method used to monitor the effects of the harvest?	**Direct population estimates**	**1**
	Quantitative indices	2
	Qualitative indices	3
	National monitoring of exports	4
	No monitoring or uncertain	5

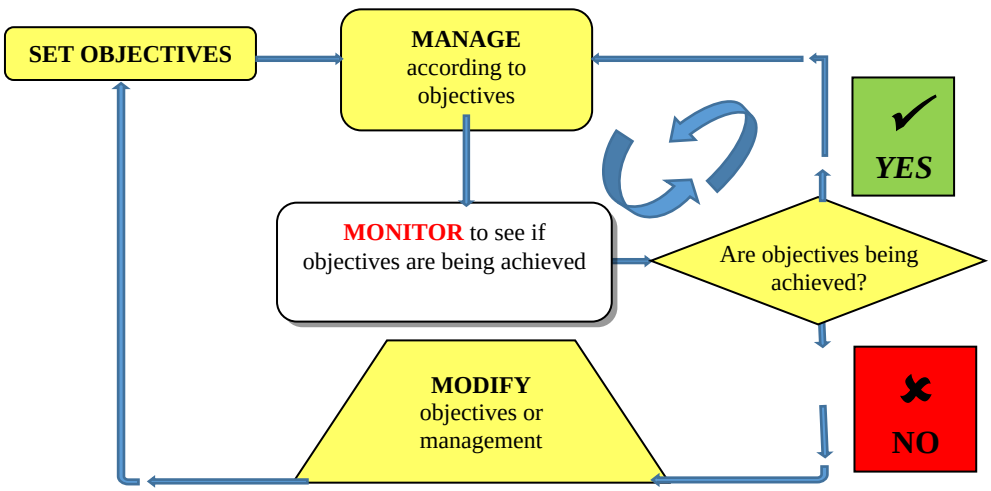
Adaptive management, a concept formalized from the process of trial and error, has proven a useful approach to the paucity of data that often surrounds issues of harvesting less well-known species groups. Even for species where some basic facts of biology and ecology such as population size or maximum rate of increase are known, adaptive management is a crucial concept because:

a) ecological systems are very complex and great uncertainties surround consequences of the use of those systems, and of the consequences of environmental, social and economic changes; and,
b) management itself must be sustainable, and able to adapt to changing conditions.

A system of adaptive management reviews decisions and procedures and uses the lessons learned to adjust the management system. The central component of effective adaptive management is the monitoring system that is incorporated to evaluate management activities. Hence, an act of management, such as harvesting, is designed as a trial, the outcome of which can be assessed scientifically and improved upon where necessary, through a properly designed monitoring system.

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 adopted by DWNP is summarized in the following flow chart:



DWNP uses a variety of monitoring systems which include:

a. 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 is 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 DWNP for over two decades. The principles of the system are as follows:

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

There a number of advantages in using the MOMS:

- *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 and others.*
- *It can be designed to monitor almost anything*
- *There is very little technical support needed*
- *It does not require a high level of technical knowledge or analytical skill*
- *Information can be saved on paper and "backed up" by electronic means and databases*
- *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.

b. 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 criticized 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. To provide the best data, aerial surveys should:

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

Survey data are not precise enough to be used for adjusting annual quotas—this must be done from data on ivory weight and offtakes.

c. Sport-Hunted elephant's trophy database

A database of tusk measurements held by Mochaba in Maun on behalf of the Department of Wildlife and National Parks, is probably unique in Southern Africa. This database includes measurements of all tusks derived from elephant sport hunting in the period 1996-2013, and will continue to be used after the re-instatement of hunting in 2019.

The database formed the basis for two landmark studies done in 2011 "Trophy Hunting, Population Dynamics and Future Management" (Craig et al 2011) and "Age Determination, Age and Size of Hunting Trophies" (Craig and Peake 2011).

Apart from the number of very large trophies, there are two remarkable features in the data: firstly, the mean tusk weight of the trophies taken over 15 years has remained virtually constant at 25kg (55lbs). Secondly, the proportions of tusk weights have remained constant over the same period i.e. in the number of animals hunted in every year roughly 30% lie between 40-50lbs, 40% lie between 50-60lbs and 20% lie between 60-70lbs. These proportions bear little resemblance to the proportions of tusks occurring in the same weight classes within the population. This finding

appears highly significant because contrary to the belief that sport hunting is targeting only older big males (Allen et al 2020), depressing the quality of trophies (Stalmans et al. 2003), eroding fine-scaled genetic structure (Archie et al. 2008) and leading to increased reproductive skewing in the population, which altogether may increase the rate at which genetic diversity is lost (Archie et al. 2012), the landmark study of Craig et al 2011 demonstrated, through the analysis of an African unique trophy database, all the negative perceptions have not happened in the well managed elephant hunting in Botswana (1996-2013) because the proportions of different-sized trophies remained 'rock-steady' due mainly to two factors (1) hunting quotas set at or below 0.35% of the population that led to the maintenance of the highly desirable tusks above 70lbs – the large trophies which have established Botswana as a premier hunting destination; and (2) the population is characterized by a very long time constant (>50 years) in responding to changes in the quota. None of the quoted negative studies have embarked in a fine scale analysis of trophies taken such as the one conducted in Botswana. Moreover, in accordance with the age determination findings in Craig and Peake (2011), the average age of the hunted elephants for the period 1996-2013 was of about 35-36 years. Parameters used in the above-mentioned study are currently used to determine age of sport-hunted elephants.

The Botswana elephant trophies database is therefore of major importance in the monitoring of offtakes and also in quota allocation. Quotas can be adapted depending on the analysis of the season's offtake to show, by CHA, an ordered table of all animals with age, weight of tusks, mean tusk masses and standard deviation overall.

Importantly, the information collected in the database between 1996 and 2013 about trophy measurements, hunting quotas, concession location as well as biological specimens, forms an important piece of the knowledge legacy of legal hunting in Botswana. In 2016 and 2017 the Global Biodiversity Information Facility (GBIF) provided funding to catalogue, transfer and preserve the database materials in ORI's library and archival collections in Maun, and to capture the data in a widely accessible online resource. The project was successfully conducted by the Botswana Wildlife Producers Association (BWPA) working with the University of Botswana's Okavango Research Institute, and DWNP, and all data are accessible online at https://www.gbif.org/project/82758/data-rescue-for-the-records-of-the-botswana-wildlife-management-association#funding.

d. Hunting and Escort Guidelines

The Hunting and Escort Guidelines adopted by DWNP prescribes that an elephant hunting report shall be completed by the Safari operator/professional hunter and Escort Guides before and after each hunt. All DWNP Escorting Officers are required to observe the hunt, record the observations, detach and collect returns and compile reports of the hunt, which shall be submitted to the DWNP's Regional Wildlife Officer on the first day of work after the escort. Where the hunt was not successful and the hunter has an intention to re-book and re-hunt, the Escort Officer shall not detach the return. Where the hunt was not successful and the hunting period has elapsed or the hunter has no intention of rebooking the area, the escort guide shall detach and collect the returns.

All DWNP Escorting Officers are empowered by the Wildlife Conservation and National Parks Act of 1992 (Section 73) to act on any contravention observed. The DWNP Escorting Officer is required to provide a piece of masking tape, indelible ink and measuring tape, and use of indelible ink to record, on piece of a masking tape and stick to each tusk, the following details and weigh them:

- *License no - Date of kill - Area of kill - Sex of the elephant - Length (inner and outer length) - Girth of the tusk - Visible marks – Weight.*

At the end of each hunt, the tusks will be brought by the Safari operator/Professionals Hunter to the DWNP offices in Maun, Gaborone, Francistown, Ghanzi, Serowe, Bobonong, Letlhakane, Pandamatenga, Masunga and Kasane where they will be weighed and punched with the official CITES markings. Reporting forms annexed to the Hunting and Escort Guidelines are used for monitoring purposes.

20. Confidence in harvest monitoring: Do budgetary and other factors allow effective harvest monitoring?		
	High confidence	1
	Medium confidence	**2**
	Low confidence	3
	No confidence	4
	Uncertain	5

The effectiveness of the monitoring system is judged as medium because of funding shortages during the hunting suspension that for example saw the depletion of the Conservation Trust Fund (CTF) (see point 22) i.e. despite the hunting ban during 2014 to 2019, the CTF continued to award grants to deserving grantees and projects, depleting the Fund, with minimal replenishments made due to a lack of income from the sale of quotas during that period.

Now that the CTF has been replenished with the revenues accruing from the sale of Special Elephant quotas in

high human-elephant conflict areas from the 2020 hunting season, MOMS has been reinstated and aerial surveys will henceforth be sustainably financed, including from the CTF.

As illustrated in point 19 above monitoring is a key element in the adaptive management approach that DWNP is implementing for wildlife sustainable harvest. Moreover, community trusts, through funding from the sale of their hunting quotas and funds from the CTF, are now in a position to undertake monitoring projects including improved implementation of MOMS and also engage community escorts guides to patrol their hunting areas. This will contribute to further improve actions against illegal activities.

Additionally, with additional resources mobilized for elephant monitoring through the CTF, the DWNP will be in a position to get funding from the CTF to increase the number of collared elephants and track and monitor their movements onto human settlements (and then design site-specific human-elephant conflict mitigations) and also monitor the animals' dispersal patterns.

Incentives and benefits from harvesting:

21. Utilization compared to other threats: What is the effect of the harvest when taken together with the major threat that has been identified for this species?	**Beneficial**	**1**
	Neutral	2
	Harmful	3
	Highly negative	4
	Uncertain	5

Notwithstanding that the threats analyzed in point 9 have not limited the growth of Botswana's elephant populations in recent years, when compared with those threats, legal, regulated harvest is beneficial for a variety of reasons.

Legal hunting is beneficial because it generates incentives for landholders (government, private individuals or communities) to conserve or restore wildlife on their land thereby conserving habitats, generate revenue for wildlife management and conservation, including anti-poaching activities and increase tolerance for living with wildlife, reducing the effects of human-wildlife conflicts and reducing illegal killing.

CHAs holders secure the areas, provide support to Government authorities especially in reporting poaching and other illegal activities, provide permanent and seasonal jobs to local people, provide benefits to the local communities in kind and cash, and improve habitat and wildlife conditions.

Landholders are assisting Law Enforcement Bodies on their concessions/leased areas in accordance with section 49 of the Wildlife Conservation and National Parks Act No 28 of 1992, which provides that landholders can identify people entering the land they own or occupy. Any suspicious persons can then be made known to Botswana's law enforcement agencies.

22. Incentives for species conservation: At the national level, how much conservation benefit to this species accrues from harvesting?	**High**	**1**
	Medium	2
	Low	3
	None	4
	Uncertain	5

Hunting is conducted in marginal areas where other land use activities such as photographic tourism or agriculture are not possible or viable.

The following are the main tangible benefits provided by Tourism Safari Hunting to elephant:

1) *Direct revenues e.g., employment for local people. For example, in 2011 alone, before the hunting moratorium, Hunting Operators in just 7 CHAs provided direct employment opportunities to approx. 250 people which, in accordance with the accepted ratio of ten people benefiting for dependent gave an estimated 2,500 people befitting from employment directly and indirectly in the sector. Hunting operations are one of the highest employers of non-skilled rural people; by employing rural people hunting is contributing to poverty alleviation (BWMA, 2011);*
2) *Funds from the auctions of Special Elephant Quotas accrues to the Conservation Trust Fund. The funds from the CTF support (i) elephant conservation and (ii) community livelihood projects, including building resiliency of the tourism sector, which will (with the reopening of hunting) help mitigate the impact of COVID-19 on Community Trusts and to resuscitate those Community Based Organizations (CBOs) that have been negatively affected by the hunting suspension. The total revenue accrued from the auctions of the Special Elephant Quotas since its inception are reported in the following Table 9:*

Years	2010	2011	2012	2013	2020.....2021
No. of Elephant auctioned in the Special Elephant Quota	22	32	32	40	70
Revenue from the auctions accrued to the CTF in BWP	1,600,000 Incomplete data	5,820,000	5,726,000	7,912,700	25,700,000
USD	237,040	787,500	736,940	905,345	2,417,900

Table 9: Special Elephant Quota allocation and Revenues accrued to the Conservation Trust Fund. (Source: DWNP). *Conversion rates from: https://www.fiscal.treasury.gov/fsreports/rpt/treasRptRateExch/historicalRates.htm*

3) *Hunting operators' presence during the hunting season is a proven deterrent for illegal activities, including poaching for both commercial and subsistence. Most hunting operators also maintain a skeleton staff during the off-season, and so this anti-poaching benefit is realized not only during hunting, but during the entire year;*
4) *Increased incentive for rural people to tolerate elephants and wildlife outside of Protected Areas through improved economic return and value;*
5) *The maintenance of boreholes to support elephant and other wildlife cost operators in excess of BWP1,000,000 each per annum (BWMA, 2011) in CT1, CT2 and CT3 Controlled Hunting Areas alone. Most of the hunting operators' activities were closed forcedly in 2015 due to the hunting ban and the closure resulted in Elephants and other wildlife suffering for the lack of water. In particular elephants that were spending considerable periods in Botswana stopped to do so and were back into Hwange National Park in Zimbabwe (Tshipa et al. 2017). Furthermore, borehole development in marginal areas occupied by hunting operators contributed to the range expansion of elephants thereby contributing to alleviate the destructive pressure of elephants in areas such as Chobe NP;*
6) *Meat is provided to the local communities. Although it is difficult to assess the quantity, it is an important source of protein and increases the tolerance of communities toward wildlife and their understanding of legal regulated harvesting. Onishi (2015) reported that one CBO raised $600,000.00 in 2010 from the sale of meat from the 120 animals that were its allocated hunting quota.*

Each point serves to reduce existing threats as well as tolerance of rural communities toward wildlife, all of which serve to reduce poaching.

Importantly the Conservation Trust Fund (CTF) was established in February 1999, under the Finance and Audit Act (Cap 54:01) to abide to the CITES provision that all funds accrued from the sale of ivory stockpiles should be deposited into a trust fund. Since inception this Fund has financed elephant conservation and community projects for communities residing within the elephant range. All funds accrued from the sale of ivory stockpiles were deposited into the CTF and were used exclusively for elephant conservation projects and development of projects for communities living within the elephant range. After the second one-off sale of ivory of 2009, the Special Elephant Quota was established starting in the 2010 season and funds from its auctions were deposited into the CFT until 2013, the last year before the hunting suspension.

Seventy percent (70%) of the total revenue accrued to the CTF is ploughed back into elephant conservation. Some of the projects covered under this category include monitoring of elephant movement, water development, anti-poaching and training of communities on 'problem animal control' operations. Projects under this category are principally conducted by the Department of Wildlife and National Parks but may also be extended to private researchers or other government agencies. Community development projects account for the remaining thirty (30%) percent of the revenue. The projects are primarily directed to the communities who pay the price of living side by side with elephants. CTF projects value to conservation so that people will better appreciate wildlife as a natural resource.

During the years of the hunting suspension (i.e. 2015 to 2019), the Conservation Trust Fund was depleted. Importantly, projects funded from the CTF include also photo tourism areas. To this end, DWNP are working on a system to increase revenues to the CTF also from the photo tourism operators in order to match hunting operators' contributions to the CTF. As illustrated above, currently only revenues from hunting are accruing to the CTF.

It shall be noted that during the hunting moratorium most operators maintained their presence in their CHAs even at monetary loss, and some of them were forced to be transformed into photographic areas without having the scenery

and wildlife abundance needed for such tourism. These operators continued for example to maintain boreholes, in addition to road maintenance and monitoring of natural resources.

23. Incentives for habitat conservation: At the national level, how much habitat conservation benefit is derived from harvesting?	High	1
	Medium	**2**
	Low	3
	None	4
	Uncertain	5

In the absence of safari hunting operations and where there are no other sources of legal income and protein for rural people, encroachment, habitat degradation via agricultural practices and cattle production or illegal resource use occurs very quickly. Initial encroachment for resource extraction is typically followed by establishment of cattle posts and informal settlements, conversion to subsistence agriculture, and/or an increased illegal resource use.

With the establishment of hunting and the protection that it provides for the habitat and wildlife through a very limited offtake, many short-term effects of habitat modification can be reversed in a short time through the provision of water, fire breaks and road maintenance for monitoring activities. Likewise, although the recovery period could be longer, habitats that have suffered longer-term negative impacts to the environment (severe habitat degradation by overgrazing of livestock) can, under proper management, be restored to support wildlife.

Thus, sport-hunting serves to significantly reduce the rate of habitat degradation and loss, and when established and promoted in already degraded areas can serve to restore habitat for wildlife. Low rates of off-take make tourist hunting an important tool for the rehabilitation of degraded wildlife land as it has been the case in Botswana with the establishment of Game Ranches on former livestock-degraded land.

Community-based Natural Resource Management (CBNRM) in Botswana focuses on providing incentives for communities to take responsibility for managing natural resources sustainably, and on actively building community capacity to do this. The incentives consist mainly of (i) the right of communities to obtain from government leases, permission to carry out hunting and tourism activities in specified areas;, (ii) the right to sub-lease these activities to safari operators, and (iii) the right to retain all income and other benefits derived from the hunting and tourism activities. These incentives are provided for in a number of government policies and laws.

Protection from harvest:

24. Proportion strictly protected: What percentage of the species' natural range or **population** is legally excluded from harvest?	**>15%**	**1**
	5-15%	2
	<5%	3
	None	4
	Uncertain	5

About 23 % of the elephant population is found in the wet season within National Parks, Game Reserves, and Forest Areas, where sport hunting is prohibited. The above percentage increases to around 32% in the dry season. The above is certainly the major peculiarity of the Botswana elephant population: the majority of elephants are found outside protected areas.

25. Effectiveness of strict protection measures: Do budgetary and other factors give confidence in the effectiveness of measures taken to afford strict protection?	**High confidence**	**1**
	Medium confidence	2
	Low confidence	3
	No confidence	4
	Uncertain	5

There is a high confidence in the effectiveness of protection measures taken in Protected areas and an increasing confidence in the fact that now that hunting has been re-opened the presence of operators in their relevant CHAs will increase protection.

26. Regulation of harvest effort: How effective are any restrictions on harvesting (such as age or size, season or equipment) for preventing overuse?	**Very effective**	**1**
	Effective	2
	Ineffective	3
	None	4
	Uncertain	5

Hunting of females is prohibited. Additionally, the quota system, together with the restricted hunting season (April-September) and limits in minimum tusk weight, are the main mechanisms for restricting harvest.

CONCLUSIONS

The non-detriment findings for *Loxodonta africana* (African Elephant) demonstrates that Tourism Safari Hunting poses a low and non-detrimental risk to the species in Botswana. The impact of Tourism Safari Hunting on the elephant population is negligible in biological terms.

Tourism Safari Hunting has no effect whatsoever on limiting population growth. Conventional concepts of biological sustainability have little relevance to trophy hunting. Long before the population of adult males becomes totally depleted, the safari industry causing the depletion would have collapsed. In the lower weight classes (animals carrying tusks less than 11kg) there are thousands of animals in the population.

Quotas exceeding 1% of the population are eminently sustainable in biological terms but totally incompatible with the notion of a high-quality elephant tourism hunting safari industry. Botswana could remove in excess of 1,300-1,500 elephants each year without any detriment to a population that is growing at a rate of 6% each year with local growth rates exceeding 7% in some regions (e.g. Songhurst et al 2019).

The hunting quotas have been and still are extremely conservative and the benefits accruing to habitat and rural people justify the removal of a negligible percentage of elephants from the population.

In this document consideration has been given to the population of Elephant in Botswana; the quota-setting system which recognizes a series of scientific principles, and the consequent current precautionary quota; the recently approved National Elephant Management Plan and Action Plan 2021-2026; the well developed and implemented Escort and Hunting Guidelines; the limited harvest and the incentives to conservation represented by the substantial revenues generated by safari hunting for the Department of Wildlife and National Parks operations, anti-poaching, and community development. The Scientific Authority has considered the current threats to elephant, including human-elephant conflicts, loss of habitat and illegal activities and the potential of safari hunting to mitigate those threats.

Safari hunting provides a net benefit to the species, it does not pose a threat to the species, and it is not a detriment to the survival of the species. Regulated and controlled safari hunting of elephant in Botswana enhances the survival of the species. The elephant is neither endangered nor threatened in Botswana.

Upon considering all the factors illustrated in this document and in accordance with Article IV of CITES and CITES Resolution Conf.16.7, the Scientific Authority of Botswana has advised the Management Authority that the low level of off-take generated by safari hunting is not detrimental to the survival of the elephant in Botswana and enhances its survival and the amount of revenues generated by this low level of off-take are of crucial importance for the conservation of the species also because of the benefits it provides to rural communities.

The Scientific Authority does not have any current concerns relating to export of elephant hunting trophies in accordance with Article IV of CITES: in any case, a series of recommendations can be drawn up from these non-detriment findings:

a) It is recommended to progressively phase out compensation schemes through improved CBRNM frameworks and institutions. The Elephant Management Plan 2021-2026 includes an action (11.2.2) aimed at examining options for compensation including self-insurance, with full consultation of affected communities: proper implementation of this action could achieve a win-win for both people and elephants.
b) It is recommended that funding for MOMS and aerial surveys is sought from the CTF.
c) It is recommended to assign Citizen elephant quotas and Special elephant quotas to relevant CBOs with longer tenure and stronger resource rights especially for the Citizen hunting areas.
d) It is recommended to modify the CTF legislation and guidelines in order that revenues are captured from all fees provided in the Hunting Regulations and that both consumptive and non-consumptive tourism fund elephant and communities' projects in Botswana. At present only hunting is funding CTF and this should be enlarged to include photo tourism operators' contributions matching hunting operators' contributions.

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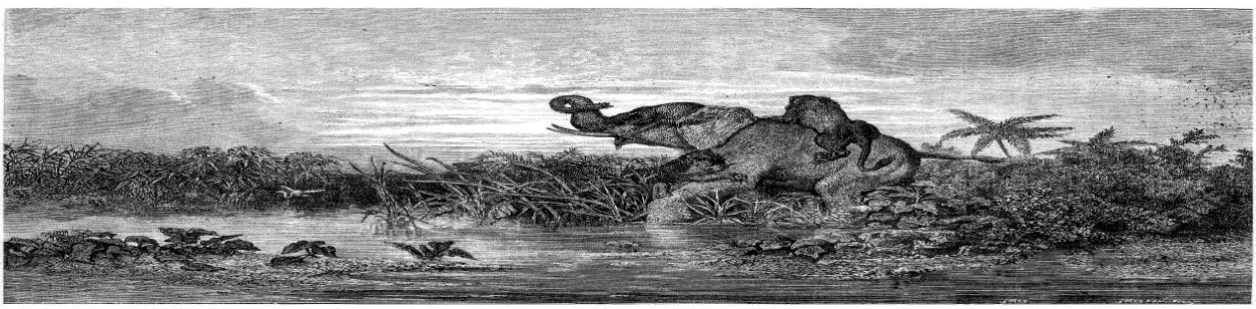

*Elephant attacked by two Lions (**M**agasin **P**ittoresque, 1875)*

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ANNEX 1

Assessment of the Non-Detriment Findings for Elephant in Botswana against the IUCN SSC "*Guiding principles on trophy hunting as a tool for creating conservation incentives. Ver. 1.0. IUCN SSC (2012)*"

An assessment of the Non-Detriment Findings for Elephant in Botswana against the IUCN SSC GUIDING PRINCIPLES ON TROPHY HUNTING AS A TOOL FOR CREATING CONSERVATION INCENTIVES. VER. 1.0. IUCN SSC (2012), was undertaken by DWNP in recognition of the importance of the implementation of these principles to be applied as a guidance to manage tourist sport hunting as a legal, regulated conservation activity which provides a critical tool to secure a sound social, economic and ecological conservation scenario.

Biological Sustainability

Trophy hunting *can serve as a conservation tool when it:*

#	IUCN Principle	Remarks
1	**Does not contribute to long-term population declines of the hunted species or of other species sharing its habitat, noting that a sustainably harvested population may be smaller than an unharvested one**	Safari hunting has an insignificant impact on the Elephant population in Botswana because the offtake is limited and low. It is not a threat contributing to the population's potential decline. Considering the latest available estimate of Elephant population size in Botswana (i.e. 120,000-160,000 elephants), the offtakes of elephants in the period 1996–2013 ranged from a minimum of 0.04% to a maximum of 0.26 %. This low offtake is sustainable and generates significant financial and other benefits.
2	**Does not substantially alter processes of natural selection and ecosystem function; that is, it maintains "wild populations of indigenous species with adaptive gene pools." This generally requires that hunting offtake produces only minor alterations to naturally occurring demographic structure. It also requires avoidance of breeding or culling to deliberately enhance population-genetic characteristics of species subject to hunting that are inconsistent with natural selection**	Safari hunting in Botswana does not substantially alter natural selection or ecosystem processes. Botswana's limited quota, as further limited by weight restrictions, ensures that hunting offtakes do not negatively affect natural processes. Moreover, hunting of females is prohibited. Botswana maintains a large wild Elephant population (120,000-160,000) across a wide permanent and transient range, which contributes to an adaptive gene pool. This benefits from the fact that nearly 40% of the country's land surface is designated as conservation areas. No captive breeding or breeding for specific characteristics is done for Elephant in Botswana.
3	**Does not inadvertently facilitate poaching or illegal trade of wildlife**	Safari hunting in Botswana does not inadvertently facilitate poaching or illegal trade. Poaching and illegal trade in Elephant products is currently low in the country, although it has increased since hunting was suspended in 2014 which suggests that the existence of licensed, regulated hunting is helping control poaching through the occupancy of concessions and revenue sharing with local communities. Even where anti-poaching is not a legal

* *The term "trophy hunting" is used by IUCN to refer to hunting that is: Managed as part of a program administered by a government, community-based organization, NGO, or other legitimate body; Characterized by hunters paying a high fee to hunt an animal with specific "trophy" characteristics (recognizing that hunters each have individual motivations); Characterized by low off-take volume; Usually (but not necessarily) undertaken by hunters from outside the local area (often from countries other than where the hunt occurs).*

Botswana uses the term Controlled hunting or tourist safari hunting because the term "trophy hunting" has come to be misused and is indicative of too small a component of the values of a safari hunt.

		prerequisite, operators are monitoring their concessions and support government rangers and community escort guides. Botswana National Anti-Poaching Strategy is being updated (and should be finalized by August 2021) aiming, *inter alia*, at better inter-agency collaboration. DWNP have employed and trained in 2019, a total 240 new rangers and in 2020 a further 176 rangers.
4	**Does not artificially and/or substantially manipulate ecosystems or their component elements in ways that are incompatible with the objective of supporting the full range of native biodiversity**	Hunting in Botswana does not manipulate ecosystems in ways that are incompatible with supporting biodiversity. To the contrary, hunting has created financial incentives for the development and retention of wildlife as a land use across an area of more than 350,000 km^2 (176,710 km^2 where elephant hunting occurs) where it is a primary land use. Hunting areas serve as buffer zones for many national parks. The suspension of hunting during (2014 to 2018) as a land use option had put at risk an enormous amount of land that provided habitat for diverse species. That is nearly two times than the area of Botswana's national parks game reserves or areas where hunting is not allowed such as photo tourism concessions. With re-opening of the hunting sector, these land parcels are now afforded value and protection.

Net Conservation Benefit

Trophy hunting can serve as a conservation tool when it:

#	IUCN Principle	Remarks
1	**Is linked to identifiable and specific parcels of land where habitat for wildlife is a priority (albeit not necessarily the sole priority or only legitimate use); and on which the "costs of management and conservation of biological diversity [are] internalized within the area of management and reflected in the distribution of the benefits from the use"**	Elephant hunting in Botswana is linked to identifiable land areas which prioritize habitat and wildlife conservation. In the historical elephant range, areas gazetted as Controlled Hunting Areas (CHAs) where elephant quotas are allocated (25 CHAs - 176,710 km^2) are larger than protected areas or areas without safari hunting activity (132,791 km^2) such as photo tourism CHAs. Elephant Hunting areas cover more than one-quarter of Botswana and serve as prime reservoirs of global biodiversity, securing maintenance of natural ecosystems for Elephants. Elephant Hunting areas includes 25 CHAs. As much as possible, the costs and benefits of management and conservation are localized and many of the government's costs of maintaining Controlled Hunting Areas are transferred to the private sector. Furthermore, revenues from hunting are used by the Government for anti-poaching and other conservation-related activities. In community-controlled lands, the majority of fees goes to the communities for their investment in wildlife management and conservation as well as livelihood enhancement projects. Moreover, local communities within the elephant range also benefit from the funds accruing to the Conservation Trust Fund, whose main source of replenishment are revenues derived from the auctions of Special Elephant Quota in high-conflict areas. Much of the revenue generated goes to communities pursuant to negotiated payments, employment, and voluntary contributions by hunting operators. In hunting areas in particular (as compared to national parks), the costs and benefits of wildlife in the area are internalized and distributed within the area of management.

2	**Produces income, employment, and/or other benefits that generate incentives for reduction in pressures on populations of target species, and/or help justify retention, enhancement, or rehabilitation of habitats in which native biodiversity is prioritized. Benefits may create incentives for local residents to co-exist with such problematic species as large carnivores, herbivores competing for grazing, or animals considered to be dangerous or a threat to the welfare of humans and their personal property**	Hunting produces direct and indirect income, employment, and other benefits that generate incentives that reduce the threats to wildlife populations in Botswana. With the reopening of hunting approximately 25,700,000 BWP (approx.2,417,856 US$) accrued to the Conservation Trust Fund from the revenues of auctions of the sale of the Special Elephant Quota in 2020. This revenue pays for projects in the elephant range and for communities' development projects. Furthermore, elephant hunting generates income for local communities organized as Community Based Organizations (CBOs) which lease the habitat and receive lease payments and revenues from the sale of the quotas, as well as voluntary contributions and meat. In 2020 and 2021, quota payments alone from hunting operators generated BWP 28,411,411 (approx. 2,700,000 USD) in revenue for CBOs. Hundreds of people are employed in the hunting sector on a permanent basis and many more on a seasonal basis. Wild areas of Botswana provide biodiversity services, i.e. ecosystem services, through the provision of recreational opportunities such as hunting and the aesthetic enjoyment of the wildlife that utilize these landscapes. Safari hunting plays an important role in the ecosystem services as defined in the Millennium Ecosystem Assessment (MA) (2005), i.e. "the benefits people obtain from ecosystems." Safari Hunting is both a provisioning and cultural service (two of the four categories) of services identified by the MA. The Safari hunting system in Botswana where operators pay fees and other payments to encourage ecosystem and species conservation, and rural livelihoods, could be considered as a Payment for Ecosystem Services (PES). Its contribution in this regard and in the whole framework of Ecosystem Services shall be analyzed further by the Department of Wildlife and National Parks, as part of its 2021/22 series of activities meant to further improve the trophy hunting programme in Botswana.
3	**Is part of a legally recognized governance system that supports conservation adequately and of a system of implementation and enforcement capable of achieving these governance objectives**	Wildlife species in Botswana, including the African Elephant, are protected under the Wildlife Conservation and National Parks Act No.28 of 1992 This Act protects the species' natural habitat, primarily through a network of protected areas and limits on offtake of listed species. The Act is implemented through the Wildlife Conservation regulations. Safari hunting is regulated by the Hunting and Licensing Regulations of 2001. In areas that allow hunting, the Act and Regulations are enforced by the DWNP, Botswana Defense Force and Botswana Police. Funding comes from the Botswana Conservation Trust Fund, and from government subventions to the above-listed agencies. DWNP is responsible for setting wildlife management and conservation policy in CBOs. These government and non-state actors, along with International Cooperating Partners, universities and other interested parties, are responsible for implementing the Elephant Management Plan and Action Plan 2021-2026. These implementing agencies are all overseen by and report to the Ministry of Environment, Natural Resources Conservation and Tourism (MENT). The recently approved Elephant Management Plan and Action Plan 2021-2026 aims to conserve elephant

		populations while ensuring the maintenance of habitats and biodiversity, promoting the contribution of elephants to local economies and to National development, while minimizing their negative impacts on rural livelihoods through three main targets: ▪ To maintain viable populations of elephants in Botswana through minimal interference and where necessary by adaptive management. ▪ To ensure elephant populations do not adversely impact on biodiversity conservation goals and community livelihood goals. ▪ To involve all sectors in the realization of full economic potential of elephants and other wildlife resources outside protect areas via sustainable use.

Socio-Economic-Cultural Benefit

Trophy hunting can serve as a conservation tool when it:

#	IUCN Principle	Remarks
1	**Respects local cultural values and practices (where "local" is defined as sharing living space with the focal wildlife species), and is accepted by (and preferably, co-managed and actively supported by) most members of the local community on whose land it occurs**	In Botswana, Community Based Natural Resource Management (CBNRM) is applied and practiced in Wildlife Management Areas (WMAs) or Controlled Hunting Areas (CHAs) leased to Community Based Organizations (CBOs) and are therefore sometimes referred to as Community Wildlife Management Areas or Community Controlled Hunting Areas. A CBO is a legal entity formed by a community to represent the community's interest and implement their management decisions. Hunting quotas are assigned to a beneficiary CBO that can utilize it either wholly commercially, or partially commercially with a proportion of the quota being reserved for subsistence. There are four principal ways of the commercial utilization of wildlife hunting quotas awarded to CBOs: - Joint Venture Agreement - Joint Venture Partnership - Auctioning - Direct Marketing Local communities suffered greatly during the hunting ban during 2014 to 2018: income, job opportunities, legal access to proteins, and a series of important cultural values were severely jeopardized. With the reinstatement of hunting, CBOs are now deriving income that enables them to strength the CBOs (including enhancing governance processes, procurement of assets to support wildlife management and investment in livelihood project, including mitigation of human-elephant conflict), all of which increase the wildlife co-management capacities of the CBOs.
2	**Involves and benefits local residents in an equitable manner, and in ways that meet their priorities**	CBRNM represent the community-based conservation system of Botswana and the CBOs are seen as a key component of rural development and as one of the best weapons in the fight against illegal utilization. Community Based Organizations (CBOs) provide enhanced protection of critical habitats outside of protected areas and represent the best hope for conserving wildlife outside of Botswana protected areas while enhancing rural economic development through consumptive and non-consumptive use investments.
3	**Adopts business practices that promote long-term economic sustainability**	CBOs in Botswana use a combination of Land Use and Management Plans, Business Plans and Environmental Assessment processes, to guide developments and investments within the land parcels they manage. Long-

		term economic sustainability of community-based programs involving trophy hunting depends also on the international framework on trade as international trade restrictions can jeopardize conservation programs.

Adaptive Management: Planning, Monitoring, and Reporting

Trophy hunting can serve as a conservation tool when it:

#	IUCN Principle	Remarks
1	**Is premised on appropriate resource assessments and/or monitoring of hunting indices, upon which specific quotas and hunting plans can be established through a collaborative process. Optimally, such a process should (where relevant) include local communities and draw on local/indigenous knowledge. Such resource assessments (examples might include counts or indices of population performance such as sighting frequencies, spoor counts) or hunting indices (examples might include trophy size, animal age, hunting success rates and catch per hunting effort) are objective, well documented, and use the best science and technology feasible and appropriate given the circumstances and available resources**	Licensed, regulated hunting in Botswana is permitted under an adaptively set quota system. Quotas are set using systematically-collected monitoring data and input from a variety of stakeholders including government rangers and scouts, local communities, hunting operators, and field biologists. Quotas are set based on population estimates or trend analyses, monitoring data, hunt return data, research work and indices as may be reflected in various reports by field personnel. For Elephant specifically, following consultations with the Scientific Authority, the CITES Management Authority has decided to maintain the export quota for Elephant hunting trophies of 400 specimens while adaptively assigning 227 elephants on its internal quota for international hunters. The CITES export quota is (i) equal to the quota preceding the ban and (ii) is approx. 0.3 % of the total estimated population. The 2021 internal hunting quota is extremely conservative as 227 elephants were allocated in quota for international hunters and 85 to citizens. The quota is further complemented by the measures set forth in the Hunting and Escort Guidelines in 2019. Offtakes in the period 2000-2013 preceding the ban were extremely conservative and biologically negligible. The low level of offtake demonstrates Botswana's commitment to sustainable hunting, and this policy stance will be maintained, as evidenced by the principles and approaches to quota setting in the Elephant Management Plan and Action 2021 to 2026..
2	**Involves adaptive management of hunting quotas and plans in line with results of resource assessments and/or monitoring of indices, ensuring quotas are adjusted in line with changes in the resource base (caused by ecological changes, weather patterns, or anthropogenic impacts, including hunting offtake)**	Quotas are set adaptively in line with the results of monitoring. Furthermore, quotas for Elephant are also managed based on regulatory compliance. The allocation of elephant on the Recommended Allowable Offtake (RAO) quota system commenced in 1996 (see Table 8 of the NDF), based on scientific guidelines produced in 1993 and regularly updated. Quotas set internally by Botswana have been lower than the requested CITES quota for a variety of reasons including biological, administrative and market considerations. Quotas are based on a number of parameters and the main activities related to quota setting are illustrated in point 14 of the NDF. In this way, Botswana ensures responsible and sustainable offtakes that have negligible impact on the Elephant population.
3	**Is based on laws, regulations, and quotas (preferably established with local input) that are transparent and clear, and are periodically reviewed and updated**	Safari hunting in Botswana is regulated through the Wildlife Conservation and National Parks Act No.28 of 1992 and a number of Regulations among which the principal one is the Hunting Regulation lastly amended in 2011. The importance of trophy hunting, and its contribution to rural livelihoods, is continually infused into new statutory instruments, such as the CBNRM Act that is currently (i.e. as at June 2021) under development. As described above, quotas are established in a transparent and participatory

		way.
4	**Monitors hunting activities to verify that quotas and sex/age restrictions of harvested animals are being met**	The monitoring of the Elephant and its hunting are carried out with a variety of tools which include: a. Management Oriented Monitoring Systems (MOMS) MOMS modules can be designed to monitor anything at varying levels of sophistication from collecting presence/absence of animals to vegetation quality. b. 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 criticized for the possibility of some bias. Nevertheless, they are repeatable and comparable and comply with international standards for aerial surveys. Survey data are not precise enough to be used for adjusting annual quotas—this must be done from data on ivory weight and offtakes c. Sport-Hunted elephant's trophy database A database of tusk measurements held by the Botswana Wildlife Management Association (BWMA) through Mochaba in Maun on behalf of the Department of Wildlife and National Parks, is probably unique in Southern Africa. This database includes measurements of all tusks derived from elephant sport hunting in the period 1996-2013, and will include the ones for the 2021 hunting season and those of future quotas. Moreover, in accordance with the age determination findings in Craig and Peake (2011), which study is based on the aforementioned database, the average age of the hunted elephants for the period 1996-2013 was of about 35-36 years. Parameters used in the above-mentioned study are currently used to determine age of sport-hunted elephants. The database is therefore a powerful monitoring tool. d. Hunting and Escort Guidelines The Hunting and Escort Guidelines adopted by DWNP prescribes that an elephant hunting report shall be completed by the Safari operator/, professional hunter and Escort Guides before and after each hunt. The guidelines require Escorts and operators to fill a form which includes several data regarding for example the conduct of the hunt and the measurements of trophies in order to allow hunting and species monitoring.
5	**Produces reliable and periodic documentation of its biological sustainability and conservation benefits (if this is not already produced by existing reporting mechanisms).**	DWNP produces regularly scientific reports and NDFs. Reporting to CITES is done periodically as per CITES schedules.

Accountable and Effective Governance

A trophy hunting programme can serve as a conservation tool when it:

#	IUCN Principle	Remarks
1	**Is subject to a governance structure that clearly allocates management responsibilities**	Hunting governance structure is described in the Wildlife Conservation and National Parks Act No.28 of 1992 and in the Hunting Regulation of 2001 that clearly provides for Institutional arrangements and administration defining the management responsibilities within the relevant Government Authority.

2	**Accounts for revenues in a transparent manner and distributes net revenues to conservation and community beneficiaries according to properly agreed decisions;**	The 2013 Wildlife Policy stresses the need for equitable distribution of costs and benefits that considers stakeholders' role in relation to categories of land and efforts invested by the institution in conservation within WMAs. Since the re-establishment of hunting in Botswana in 2019, communities have restarted to obtain tangible revenues from the sale of their quotas and further benefits from the projects funded by the Conservation Trust Fund where revenues from the auctions selling the Special Elephant Quotas are allocated. Safari operators contribute substantially and voluntarily, above the prescribed fixed contribution, to Botswana's enhanced monitoring efforts and communities' development. There is a paramount need for communities and elephant alike that import of elephant trophies into the major importing countries is secure, because income from these imports promotes rural people welfare and elephant conservation.
3	**Takes all necessary steps to eliminate corruption;**	Several legislations and initiatives are in force in Botswana to combat corruption including: The Proceeds and Instruments of Crime Act was enacted into law in 2014. The Act, which repealed the Proceeds of Serious Crime Act, seeks to deprive persons convicted of crimes of the benefits gained from such crimes as well as deprive persons of property suspected to be proceeds of crime. The Corruption and Economic Crime Act was amended in 2018 to allow the Directorate on Corruption and Economic Crime to share information with their counterparts in foreign countries. The Whistleblowing Act came into operation in December 2016. The aim of the legislation is to protect whistleblowers as well as encouraging individuals to refrain from giving anonymous reports with fear of victimization. The Declaration of Assets and Liabilities Act was enacted in 2019. The Act provides for the declaration and monitoring of interests, income, assets and liabilities of specified persons with the intention of preventing and detecting corruption, money laundering and acquisition of property from proceeds of crime In 2019, the Directorate on Corruption and Economic Crime in its endeavor to tackle money laundering and other related crimes, established the Anti-Money Laundering Unit. The Unit is made up of highly experienced personnel who have been involved in high profile cases.
4	**Ensures compliance with all relevant national and international requirements and regulations by relevant bodies such as administrators, regulators and hunters.**	The CITES Management Authority of Botswana, DWNP, ensures compliance of safari hunting to CITES provisions.

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