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GOVERNING HUMAN-ELEPHANT CONFLICT: A CRITICAL INSTITUTIONAL APPROACH TO DECOLONIZING CONSERVATION IN THE CHOBE ENCLAVE OF BOTSWANA

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By

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Thesis

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POSITIONALITY

Prior to this research, I spent two months in northern Botswana during my undergrad, working with communities and conservation. This experience fundamentally shifted my worldview. I'm an animal kid, I like to see animals, I like to spend time with animals, I like to take pictures of animals. As an American raised in an agro-industrial landscape, I spent the first two decades of my life understanding animals and nature as something that should be separated from people in order to protect it. However, I saw a wild elephant for the first time in 2015 not in some people-less wilderness, but instead in the Chobe Enclave.

After finishing my undergrad, conservation work has been my livelihood, and I've worked variously as a field researcher, ecotourism guide, and park ranger. As a result, I have a certain sympathy for those engaging in conservation work. However, as an Indian-American, subsequent experiences working with American and British conservation organizations in southern Africa further shaped my understanding of how I have perpetuated a legacy of colonialism in conservation. After making a home with my partner in Montana, I have continued to recognize the parallels between communities and conservation in southern Africa and here in North America.

Throughout the bulk of this research, I have lived and worked as an uninvited visitor on the past, present, and future homelands of the Séliš, Q̓lispé, Kootenai, Apsáalooke, and Siksikaitsitapi. As I continue to learn how people and nature are not separate, I am eternally grateful to these peoples for their time immemorial guardianship of these lands. As an animal kid, the encounters I've had with my more-than-human relatives in North America and southern Africa – the fact that those species aren't extinct already – is thanks to the first peoples of these lands. In research and in my profession, I am working to translate this acknowledgement into action.

In this research, I speak about how power, agency, and social complexity shape interactions between people in this study area. Here, I reflect on how my own social attributes both shaped how I formed my research and was perceived by others during data collection. My Indian heritage has been shaped by my ancestors' status at the bottom of the Caste hierarchy, both before, during, and after British colonization. Accordingly, I hold certain inherited views of "pre" and "post" colonial which have shaped my research interests. Though I am racialized as brown in my home country in the United States, in Botswana I am often racialized as white. As a result, I both experienced privilege and encountered suspicion when identifying interview participants and conducting interviews. As a married man in a patriarchal society, I was treated in ways that my partner was not, and my male-ness may have opened doors which would otherwise have been closed. As a graduate student, I had access to information – including national and international policy documents – which were not accessible to many in the Enclave, and this shaped how I was perceived in some villages. In addition to my race, ethnicity, and nationality, mono-lingual English abilities further signaled my outsider status in the study area.

ABSTRACT

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Governing Human-Elephant Conflict: A Critical Institutional Approach to Decolonizing Conservation in the Chobe Enclave of Botswana

Chairperson: Dr. Jennifer Thomsen

Within the largest population of African savanna elephants (*Loxodonta africana*) on the continent, Botswana's Chobe Enclave is a group of agricultural communities bounded by protected areas and an international border. Human-elephant conflict (HEC) is a major concern for both Enclave residents and conservation practitioners. This research asked how institutional arrangements shape the governance of HEC in the Chobe Enclave. Previous research has shown that technical solutions to HEC must be complemented by integrating governance across local, national, and international levels to make elephant conservation and management more inclusive of people who live alongside elephants. This research employed a Critical Institutional approach and in-depth interviews with Enclave residents and conservation practitioners to explore how institutional arrangements shaped HEC governance. People in the Chobe Enclave experience HEC, not only because of increasing human and elephant populations, but also as the result of historic policies dating to the colonial era. As a result, Enclave residents experience both the impacts of elephants and conflict with conservation practitioners over the implementation of HEC reduction strategies. These results suggest that conservation practitioners should move from conservation interventions based in communities to those that are led by communities. This research recommends a series of strategies to restore HEC governance to people in the Chobe Enclave.

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INTRODUCTION

Spanning the borders of Angola, Botswana, Namibia, Zambia, and Zimbabwe, the Kavango Zambezi Transfrontier Conservation Area (KAZA) in southern Africa is home to approximately 2.5 million people and 200,000 African savannah elephants (*Loxodonta africana*). The majority of those elephants, comprising a third of their species, concentrate in northern Botswana (Chase et al., 2016). Situated in the broader KAZA landscape, Botswana's Chobe Enclave is a group of agricultural communities bounded by Chobe National Park, Chobe Forest Reserve, and Namibia's Zambezi Strip. Elephants migrate seasonally through the Enclave from wet-season forage in the neighboring protected areas to reach dry-season water resources along the Chobe River (Salerno et al., 2020).

For rural people in the Chobe Enclave, elephants impact both human lives and livelihoods (Gupta, 2014). People living near elephants experience food insecurity, reduced safety, and restricted mobility as the result of elephant crop and property damage and the associated risk of injury and fatality (Drake et al., 2021; Mayberry et al., 2017). Similarly, elephants' access to seasonal food and water resources are also restricted by humans through the risk of physical harm and death (Evans & Adams, 2018; Mumby & Plotnik, 2018).

Summarizing 20 years of studying human-elephant conflict (HEC), Hoare (2015) breaks conflict mitigation efforts into biological, physical, and governance categories and points to an institutional disconnect between centralized state and decentralized community projects. Beyond technical solutions to HEC (i.e., beehive-fences and chili pepper bombs), it is necessary to address the underlying social, political, and economic structures which position people and elephants across a landscape. As a structural solution, Hoare (2015) calls for, "vertical and horizontal integration" in the governance of HEC.

Representing interactions between people and elephants as “human-elephant conflict" suggests that the two species are intrinsically opposing forces (Young et al., 2010). Redpath and colleagues (2015) usefully dissect the broader discourse of human-wildlife conflict into so-called human-human conflicts which shape human-wildlife impacts. Critically, the frequency and magnitude of human-elephant impacts are not the inherent result of human intrusion into elephant habitat; rather, social, political, and economic contexts produce particular “geographies of encounter” between elephants and people (Margulies & Karanth, 2018a). A growing body of literature has examined human-elephant conflict in the broader framing of human-elephant interactions to consider positive, negative, and neutral interactions between people and elephants (Redmore et al., 2023; Thekaekara et al., 2021). However, the framing of HEI does not necessarily address conflict between people. For the purpose of this research, I employ HEC to denote the recursive relationship between human-elephant impacts and the broader institutional arrangements that produce them.

As a legacy of colonialism, African conservation is shaped not only by African people who live alongside wildlife but also by distant political actors and regional elites (Nelson, 2010). Conflict between African people and African elephants, then, is produced through neocolonial conservation geopolitics where power is wielded in the Global North to dictate conservation outcomes in the Global South (Hodgetts et al., 2019; Massé & Margulies, 2020). Consequently, Botswana’s elephant policy is, “caught up in a conflicting position in which meeting the dictates of global community put it against the belief and wishes of its local populace (Blackie & Sowa, 2019, p. 4).” For HEC to be managed and mitigated equitably, governance must be more inclusive of rural people (Cassidy & Salerno, 2020) and studies of HEC must elevate marginalized voices (Wisner, 2015).

Consequently, my proposed work aims to amplify the voices of people disproportionately bearing the costs of elephant conservation through application of a critical institutional approach. Critical institutionalism is a school of thought that explores how institutions mediate relationships between individuals and their social, spiritual, and material worlds (Cleaver, 2012). By focusing on the nature of human agency, the social complexity of institutions, and the power relations that animate them, critical institutionalists analyze outcomes through the lens of social justice (Cleaver & De Koning, 2015). This research aims to not only understand how institutional arrangements shape HEC governance in the Chobe Enclave, but also how to change them (Wisner, 2015). Specifically, my research questions include:

How do institutional arrangements shape the governance of human-elephant conflict in the Chobe Enclave of Botswana?

i. How can HEC governance be restored to Enclave residents?

Thesis Roadmap

This thesis continues with an overview of the study area, including socio-ecological characteristics across multiple spatial scales. Then, I present a literature review situating this research within a larger body of conservation literature, including intersections with colonialism, governance, elephant management, and the critical institutionalism framework. Next, I present my methods of data collection and analysis. Subsequently, I share the results of this study, followed by a discussion of emergent themes. Finally, I conclude with a summary of this research, providing recommendations, and identifying opportunities for future work.

STUDY AREA

Human-elephant conflict governance is the complex process of decision-making about elephants spanning. HEC governance occurs across nested scales from communities on-the-ground to the broader transboundary conservation landscape. Here, I expand upon these nested scales (Figure 1.), including: (1) the Kavango Zambezi Transfrontier Conservation Area, (2) the Republic of Botswana, (3) the Chobe District, and (4) the Chobe Enclave.

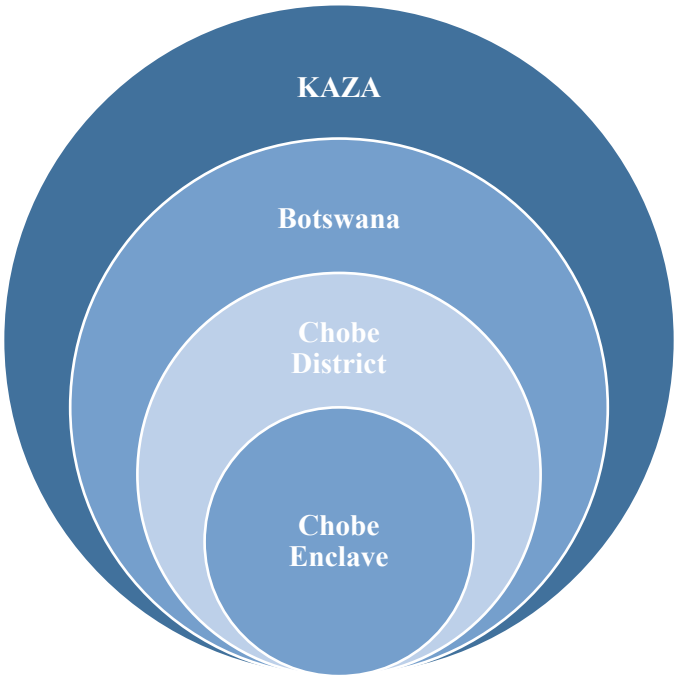

Figure 1: Nested scales of HEC governance

Kavango Zambezi Transfrontier Conservation Area

Encompassing approximately 520,000 square kilometers, KAZA spans the borders of Angola, Botswana, Namibia, Zambia, and Zimbabwe and is the largest terrestrial transboundary conservation area on earth (Figure 2.). Facilitated by the Peace Parks Foundation, a non-

governmental organization, the five nations formalized KAZA through an international treaty in 2011. KAZA is home to 2.5 million people as well as the largest African savannah elephant population on the continent, numbering over 200,000 individuals (Chase et al., 2016). The transboundary landscape incorporates multiple land use types including not only protected areas but also urban and rural human settlements.

International NGOs conduct transboundary elephant conservation and research. The treaty-based KAZA Secretariat coordinates the KAZA partner states in elephant conservation and management. Elephants Without Borders is a Botswanan organization that has previously conducted aerial surveys of elephants across KAZA.

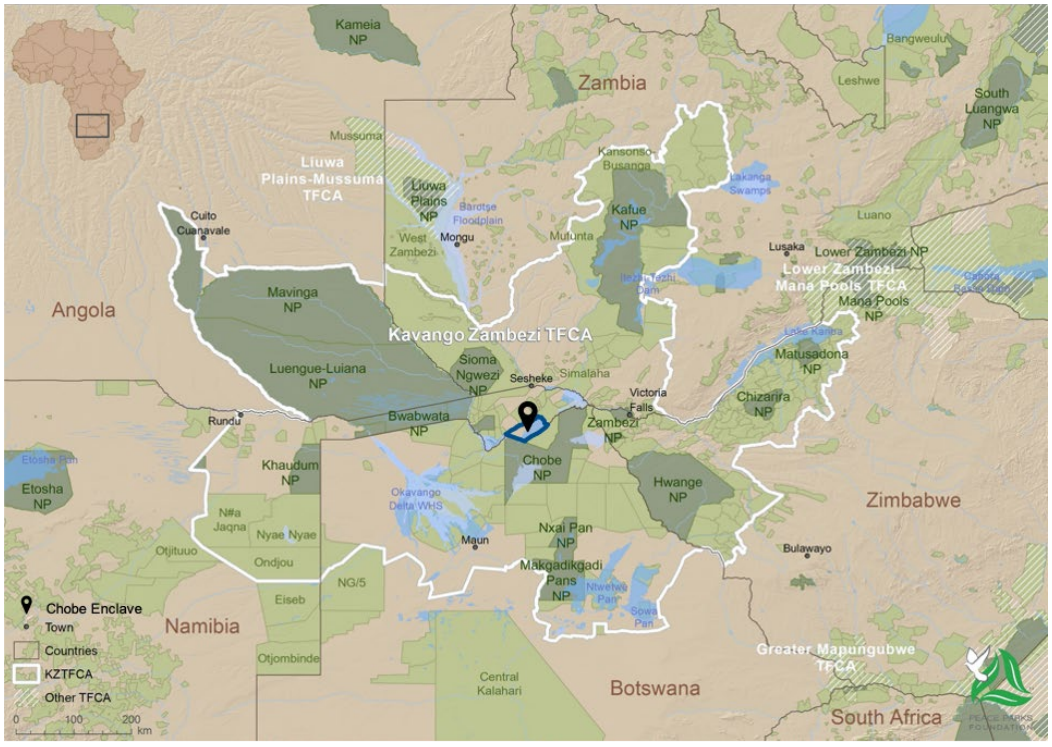

Figure 2. Map depicting the Kavango Zambezi Transfrontier Conservation Area. Modified from Peace Parks Foundation, https://www.peaceparks.org/tfcas/kavango-zambezi/

Botswana

Northern Botswana contains approximately 30% of the KAZA landscape, including the Okavango Delta, Chobe-Savuti-Linyanti, and Makgadikgadi-Nxai Pan ecosystems (KAZA, 2019). The region is drained by three major river systems: the Okavango which flows to the inland Okavango Delta in northeastern Botswana, and the Zambezi and Limpopo Rivers which both flow to the Mozambique Channel of the Indian Ocean. Though the Kalahari Desert composes the majority of Botswana's surface area, the northern and eastern portions of the country are characterized by these rivers systems and their associated wetland and forest habitats.

According to the IUCN, Botswana has 20 nationally designated protected areas including 6 Game Reserves, 4 National Parks, 6 Forest Reserves, 1 Game Sanctuary, 3 Bird Sanctuaries (IUCN, 2020). In National Parks and Game Reserves there is no wildlife utilization by communities. Botswana has further designated Wildlife Management Areas (WMAs) were "communities are granted user rights for the different areas and natural resources (Republic of Botswana, 2021, p. 23)." WMAs act as network of "buffer zones" which surround and connect protected areas. Both Forest Reserves and WMAs allow for community utilization, however Forest Reserves are governed by the state, while WMAs are governed by communities or private concessionaires (IUCN, 2020; Republic of Botswana, 2021).

Given the combination of protected areas and major river systems, northern Botswana is home to more than half of the KAZA elephant population – approximately one third of the African savannah elephants on the continent (Chase et al., 2016). Prior to the colonial extraction of ivory beginning in the 19th Century, Vandewalle and Alexander (2014) suggest that elephants were likely more numerous and wider ranging in Botswana than they are today.

Chobe District

The Chobe District (Figure 3.) of northern Botswana borders Namibia, Zambia, and Zimbabwe, and is home to an estimated 28,743 people (Statistics Botswana, 2022) and 32,712 elephants in the dry season (Adams et al., 2020). The Chobe District was elevated from its prior sub-district status in 2006 (M. Shamukuni, 2009). Protected areas comprise 80% of the district, including Chobe National Park, six Forest Reserves, and two WMAs (Gupta, 2014; Van Der Sluis et al., 2017). Chobe National Park was first designated as Chobe Game Reserve in 1960. Following Botswana's Independence in 1966, the Game Reserve re-established as a National Park in 1967 (Gupta, 2013).

In the northeast corner of the district, the city of Kasane is not only the district headquarters, but also a gateway community for tourism. Kasane's airport provides regional access to locations in northern Botswana including Chobe National Park as well as tourism destinations to Mosi-oa-Tunya (Victoria Falls) between nearby Zambia and Zimbabwe. Kasane and neighboring Kazungula are the site of not only extravagant tourism amenities, but also recent urban development. The KAZA Secretariat which coordinates implementation of the KAZA Treaty between nations holds an administrative office in Kasane, as does Botswana's Department of Wildlife and National Parks which manages protected areas and HEC, and Elephants Without Borders, an elephant conservation NGO which also works to reduce HEC in the District.

Other settlements in the Chobe District are subdivided into two clusters on either side of Chobe National Park: an eastern cluster which includes the communities of Kazungula, Lesoma, and Pandamatenga; and a western cluster which includes Kachikau, Kavimba, Mabele, Satau, and Parakarungu (Garekae et al., 2020).

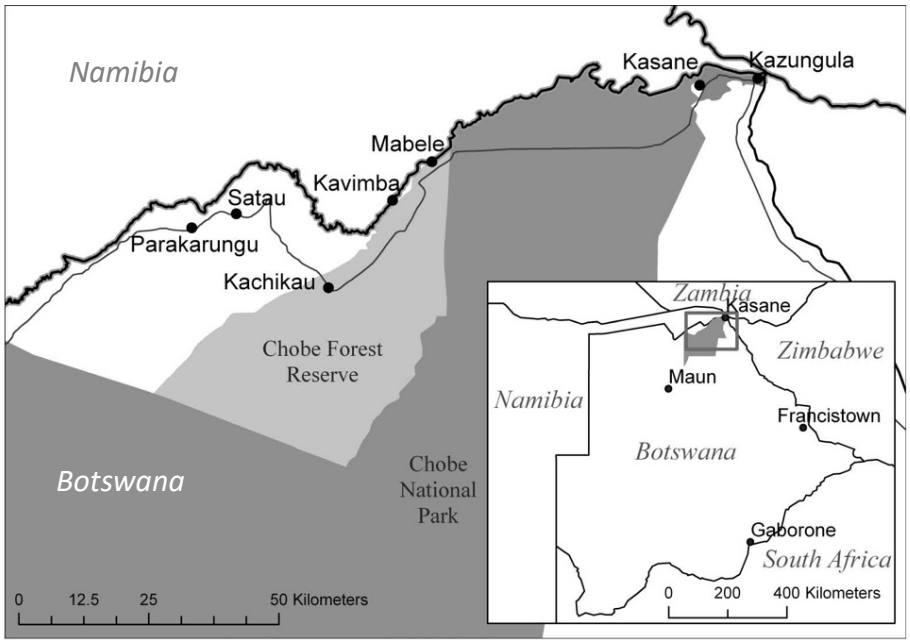

Figure 3. Map depicting the Chobe District in northern Botswana. Modified from Gupta (2014)

Chobe Enclave

The western cluster of villages in the Chobe District is commonly referred to as the Chobe Enclave. The Enclave is bounded by protected areas: Chobe Forest Reserve to the south, and Chobe National Park to the east and west. The Enclave's northern border is formed by the Chobe River, which also marks the international boundary with Namibia. The Enclave slopes from forested higher ground in the Chobe Forest Reserve to low lying floodplains along the Chobe River. According to Jones (2002), the Enclave receives the highest rainfall in Botswana, making it the most suitable for growing maize. The villages of the Enclave are connected to the administrative center in Kasane by a single, asphalt road (Garekae et al., 2020).

The Chobe Enclave is populated by a variety of ethnic groups. The predominant group in Kavimba, Mabele, Parakarungu, and Satau are the baSubiya, while people living in Kachikau are predominantly baTawana (Garekae et al., 2020). The !Xo people are another ethnic group in the Enclave (Lepetu et al., 2008), and one of a group of peoples known alternatively as the baSarwa,

Khoi, San, or “Bushmen” who are internationally recognized as Indigenous peoples, and are autochthonous in the region (Hitchcock et al., 2015; D. M. Shamukuni, 1972). Historians suggest that the baSubiya, or Veekuhane or Bekuhane as they call themselves, arrived in the area as early as the 1400s, while the baTawana (known alternatively as the BaSekgoma) arrived in the early 1900s (Gumbo et al., 2021; D. M. Shamukuni, 1972). However, these dates may be disputed by Enclave residents.

The five Enclave villages comprise approximately 4,500 people (Statistics Botswana, 2022). However, the Enclave as a whole including agricultural outposts has been estimated to contain as many as 7,500 people (Lepetu et al., 2008). The Chobe Enclave Conservation Trust (CECT), a Community-Based Organization (CBO), is headquartered in Kavimba (Gupta, 2014). CBOs in Botswana direct tourism revenue to village development in order to create benefits for people living alongside wildlife.

Nested HEC Governance

HEC governance occurs across within and between the nested spatial scales of the Chobe Enclave, Chobe District, Botswana, and KAZA. Within the Chobe Enclave, individuals and households from each of the five villages engage in decision-making about elephants, from choosing when and where to walk to deciding how to protect fields and gardens. Individuals and households shape collective decisions about elephants through their villages Kgotla meetings. In a Kgotla, community members are not only heard by their village level administrators, but often government departments and NGOs will consult village Kgotlas to speak to the gathered members of the community. In Kgotla meetings, community members can recommend village development projects to be undertaken with CECT funds. If accepted in the Kgotla, the village chief together with the Village Development Committee (VDC) can request funding for the

project from CECT. Individuals engage DWNP for the assessment of crop and property damages and the disbursement of compensation. Enclave residents can also engage directly with NGOs. For example, some residents choose to partner with Elephants Without Borders' Coexistence Program to deploy deterrent devices to prevent damages.

Each village elects two community members to serve on CECT's Board, and each village chief serves as an ex-officio member. This Board is advised by a Technical Advisory Committee (TAC) composed of district level officials from relevant departments including the DWNP. In the allocation of hunting quotas, for example, decision-making within DWNP occurs at the national and district level within the context of international agreements like CITES. DWNP then brings the quota to TAC and CECT.

At the transboundary scale, the KAZA Secretariat plays a facilitating role between the five partner states in issues of transboundary governance; however, KAZA does not have stand-alone decision-making authority. KAZA convenes national-level decision-makers from the respective partner states on issues of elephant management. KAZA can direct funding to CECT as it has done in the past for purchase of vehicles.

In the next section, I situate my research in this study area within a larger body of conservation literature, including intersections with colonialism, governance, elephant management, and a critical institutionalism framework.

LITERATURE REVIEW

Conservation and Colonialism

At the intersection of conservation and development studies, colonialism is a frequent subject of critical scholarship (McMichael, 2016; Neumann, 2003; Robbins, 2012). Understanding the colonial project as the era from the 15th to 20th Centuries, when European nation-states exerted social, political, and economic dominion over disparate cultures across multiple continents (i.e., McMichael, 2016), has drawn criticism for its implication that colonialism was a discrete, not ongoing, phenomenon (Loftus, 2019; Tuck & Yang, 2012). Popularized by Ghanaian President Kwame Nkrumah, neocolonialism refers to the continued political and economic subjugation of post-independence nations by colonial powers (Rogers et al., 2013). Decolonization is the ongoing pursuit of sovereignty for colonized peoples from a former colonial power through the restoration of lands and governance (Tuck & Yang, 2012). Importantly, decolonization "cannot easily be grafted" onto existing social justice frameworks (Tuck & Yang, 2012, p. 3), and not all efforts to incorporate social justice into conservation efforts are inherently decolonial. Explicitly, decolonizing conservation requires the restoration of land and governance to colonized peoples (Domínguez & Luoma, 2020; Krauss, 2021; Mabele et al., 2021; Youdelis et al., 2021).

To decolonize conservation in the Chobe Enclave, it is necessary to understand a series of concepts related to conservation and colonialism in Africa. The Myth of Wild Africa, conceptualized by Adams and McShane (1992), is a Eurocentric worldview of the African continent as an Edenic refuge for wildlife either devoid of people or "threatened" by poachers. Through the coercive separation of people and nature, fortress conservation makes the myth a reality. Behind the creation of exclusionary protected areas is an underlying ideology that people

(or certain social groups) and nature *should* be separated to conserve wildlife and landscapes (Brockington, 2015). Despite participatory trends in protected area management, conservation organizations in the Global North perpetuate this colonial ideal by framing African wildlife and landscapes as a global commons, belonging to all people (i.e., Murphy, 2008). Büscher (2012, p. 31) explicitly reframes this neocolonial narrative and labels Africa's wildlife and landscapes not as a global commons, but as an inverted commons, "a special commons that belongs to the entire globe, but for which only Africans pay the real price in terms of their conservation."

As a legacy of colonialism, African conservation continues to be shaped not only by African people but also by distant political actors (Nelson, 2010). Kamau and Sluyter (2018) disentangle the key material and discursive strands in the colonial production of HEC in Tsavo, Kenya, by advancing oral histories of pre-colonial relations between humans and elephants. From a conservation geopolitics perspective, rural communities and foreign nations adopt the banner of wildlife conservation to advance disparate political agendas (Bersaglio & Cleaver, 2018; Hodgetts et al., 2019). In a study of United States Fish and Wildlife Service International funding, for example, Massé and Margulies (2020, p. 11) found that grants for community-oriented initiatives were dwarfed by funding for combatting the wildlife trade through anti-poaching enforcement:

> This is especially true for interventions focused on charismatic megafauna such as elephants and rhino in Sub-Saharan Africa, where poverty, opportunity for economic advancement, vulnerability, and dangers associated with living with wildlife are often driving forces behind illegal hunting.

By preferentially funding militarized solutions to illegal hunting, the United States and other nations in the Global North constrain how conservation practitioners in Botswana manage HEC. HEC, then, is produced in part through neocolonial conservation geopolitics (i.e, Massé, 2016).

Conservation Governance

Community-based natural resource management (CBNRM), known alternatively as community-based conservation and integrated conservation and development programs, seeks to reconcile the colonial inequities of exclusionary fortress conservation by restoring natural resource governance to marginalized and displaced peoples (Dressler et al., 2010; Nelson, 2010). Though communities could govern a range of protected area categories, CBNRM tends to reflect local governance of areas protected for cultural and ecological value which allow for sustained use of natural resources (Nelson, 2010). CBNRM was conceived to not only improve conservation but also to reduce rural poverty, and it enacts a participatory ideal as a step toward social justice. However, community participation in CBNRM projects ranges from tokenship to citizen control (Arnstein, 2019). In the enactment of CBNRM, donor-driven ideologies and neoliberal logics are often imposed upon rural people (Dressler et al., 2010). In northern Kenya, for example, CBNRM projects dependent primarily upon foreign tourism have been referred to as “Colonialism 2.0” (Bersaglio & Cleaver, 2018, p. 473).

Another frequent critique of CBNRM is elite capture, or the tendency for a powerful minority to disproportionately benefit from programs and deepen community inequities. Conservation and development policies which seek to avert elite capture by bolstering decentralized participation, may inadvertently disenfranchise culturally accepted leaders (Alatas et al., 2013). According to Craney (2020), there are no simple answers when navigating local participation and elite capture. Without interconnected systems of governance, CBNRM programs are constrained in their ability to address landscape scale political and ecological issues.

In contrast to CBNRM, transboundary conservation broadens conservation efforts to the landscape level and often encompasses a mosaic of protected area categories. Transboundary conservation is the cooperative management of ecological systems across international boundaries (Vasilijević et al., 2015). At a larger spatial scale, transboundary conservation facilitates the management of wildlife migration, dispersal, and gene flow across political borders (Mason et al., 2020).

However, reconciling landscape connectivity, land-use planning, and human-wildlife conflict present governance challenges, which are exacerbated when coordinating across jurisdictions (Linell et al., 2019; Mason et al., 2020; Schoon, 2013). According to the IUCN (Dudley, 2008), transboundary management is a form of shared governance; however, much like CBNRM, participation in shared governance systems varies within and between scales (Arnstein, 2019). Without explicit recognition of *who* governs, transboundary conservation remains vulnerable to elite capture or reduction to a paper park – a protected area only in policy but not in practice.

In southern Africa, both community-based and transboundary governance have strengths to overcome the colonial legacy of fortress conservation; however, interactions within and between local, national, and international levels constrain these paradigms (Berkes, 2007). Beyond "conservation from above" and "conservation from below" (Brosius & Russell, 2003), institutional scholars conceptualize governance as nested across these hierarchical levels (Kashwan & Holahan, 2014; Marshall, 2007; Wyborn & Bixler, 2013). Polycentric government is a structure of nested governance based on increased local level participation in which state power is devolved and decentralized within and between levels (Wyborn & Bixler, 2013).

Nested governance is useful for understanding the relative positions of different conservation organizations and their comparative advantages in different aspects of governance (Cash & Moser, 2000). Building upon scale-dependent comparative advantage, organizations in "scale-bridging roles" work across spatial scales and are conceived to be uniquely positioned to connect organizations within and between local, national, and international levels (Guerrero et al., 2015). For the governance of HEC, it is crucial to elevate local-level perspectives of HEC to achieve more inclusive elephant conservation (Cassidy & Salerno, 2020). Collaboration presents an opportunity to not only integrate governance between community-based and transboundary protected areas, but also to bridge the gap in implementation (Dubois et al., 2020; Wyborn & Bixler, 2013).

Elephant Conservation in Botswana

European colonialism extracted wealth from southern Africa through the commodification of wildlife, land, and people. As a result of unregulated market hunting to supply an intercontinental trade in ivory, elephant populations plummeted across the continent. By the 1890s, "probably less than a few hundred" African savannah elephants remained in Botswana (Cumming & Jones, 2005). However, over the next century, the population recovered to approximately 55,000 elephants in the 1990s and in recent decades the population has further increased to an estimated 130,000 (Adams et al., 2017). The population increase from hundreds to over one hundred thousand elephants in northern Botswana has created complexities both for people living with elephants as well as the conservation practitioners.

In no uncertain terms, Cumming and Jones (2005, p. 3) assert, "By any reckoning the recovery of elephants in southern Africa over the last century represents an outstanding

conservation success". However, maintaining a viable elephant population presents concomitant challenges for the region. Without migration or dispersal, high elephant density can have negative effects on habitat including the reduction of canopy cover, which has cascading effects on other species (Republic of Botswana, 2021). Further, the simultaneous changes in human livelihoods and land use patterns over the past century have produced novel geographies of encounter between humans and elephants (Massé, 2016). Changes in the socio-ecological landscape have created new spaces where species meet (Margulies & Karanth, 2018a).

In Botswana, peoples who have lived on the landscape for generations without large elephant populations are increasingly sharing that landscape with dense elephant herds. The relative population density of elephants in Botswana compared to other KAZA range states has likely resulted from a combination of ecological (i.e., abundant freshwater resources) and social factors (i.e., protective elephant policies) (Adams et al., 2017). The direct impacts of HEC include damages to crops and other properties as well as human injury and death (Blackie, 2019; Drake et al., 2021), while the indirect impacts include restricted mobility, fear of attack, and disruption of livelihoods (Mayberry et al., 2017; Sampson et al., 2021). Critically, the impacts of elephants on people in the Chobe Enclave – and in KAZA more broadly – have not been preserved from some previous era but produced through specific historical decisions (Gupta, 2013; Margulies & Karanth, 2018; Massé, 2016). Importantly, this narrative is more complex than the idea that more people plus more elephants equals more HEC.

Elephant Hunting and Photo-Tourism

HEC is only one kind of encounter. A largely arid country, Botswana's tourism sector is based around wildlife and occurs mainly in the north and northeast of the country where most of

the nation's wildlife is concentrated around major river systems. The tourism sector, dominated by foreign-owned companies and investors (Mbaiwa, 2017), draws a number of people with disparate views of elephants to northern Botswana. International tourists range from those seeking luxury accommodations, to backpackers, to trophy hunters (Joseph E. Mbaiwa, 2017). Tourism also draws citizens from elsewhere in Botswana – especially population centers along the southern border – to the Chobe District (Garvin, 2017). Critically, people and elephants sharing space in northern Botswana have disparate encounters ranging from once-in-a-lifetime tourism experiences for some to HEC for others.

For communities sharing a landscape with elephants, political economic factors influence tolerance of HEC (Garvin, 2017; Joseph E. Mbaiwa, 2017, 2018). Accordingly, Botswana's wildlife policy seeks to devolve wildlife decision making authority to local communities living with wildlife so that communities can derive economic benefits from elephant conservation (Republic of Botswana, 2021). According to Botswana's Wildlife Policy of 2013, wildlife is held in public trust; however, communities can incorporate Community Trusts to receive user rights from the state for land and resources (Republic of Botswana, 2013). Communities may utilize these user rights themselves or sublet to tourism companies for either consumptive (i.e., hunting) or non-consumptive (i.e. photo-tourism) use. If communities opt to engage in consumptive utilization of wildlife (whether through local subsistence hunting or international trophy hunting), the Botswana Department of Wildlife and National Parks allocates hunting quotas (Republic of Botswana, 2021). However, Botswana's system of user rights has its challenges. According to Garvin's (2017) study of perceptions, one Botswana citizen felt, "If we had the rights, not the user rights, but the rights ... We will feel ownership (p. 12)".

The Republic of Botswana (2021, p. 21) asserts that, "The controlled hunting programme is an important mechanism for safeguarding and generating revenue … in lands where human-wildlife conflict is high." The Convention on International Trade of Endangered Species (CITES) decision to down-list Botswana's elephants to Appendix II was contingent upon the deposition of all sales of ivory stock into a Conservation Trust Fund (CTF) which finances both elephant conservation and community projects (Republic of Botswana, 2021). Botswana's Department of Wildlife and National Parks manages the CTF process and the access of funds for projects. According to the Botswana Elephant Management Plan (BEMP) (Republic of Botswana, 2021), 70% of CTF funds have financed general elephant conservation and 30% have gone to community projects. Accordingly, national and international elephant policy decisions impact communities economically.

Hunting by both citizens of Botswana and international hunters was suspended in January 2014 by former President Ian Khama. The hunting moratorium, as it is known, received praise from western conservationists; President Khama was invited to serve on the board of directors of Conservation International (Hitchcock et al., 2020). However, the concurrent and controversial "shoot to kill" anti-poaching strategy received mixed reviews from human rights and conservation advocates alike (i.e., Duffy et al., 2016; G. Mogomotsi, 2017).

Community trusts in northern Botswana experienced large declines in income as a result of the hunting moratorium (Joseph E. Mbaiwa, 2018). This was true for the Chobe Enclave Conservation Trust in the Chobe District, whose, "main revenue stream for CBNRM came from the trophy hunting industry, which was abruptly halted during the hunting ban" (Garvin, 2017, p. 14). This was exacerbated in areas where photographic tourism potential was marginal (Republic

of Botswana, 2021). As a result, the moratorium affected communities differently depending on their suitability for photo tourism. Previous research has demonstrated that the reduction in economic benefits from tourism resulted in more negative attitudes toward elephants (Blackie, 2019; Joseph E. Mbaiwa, 2018).

The hunting moratorium was a key issue in Botswana's recent presidential election. Following the election of President Mokgweetsi Masisi and a series of community consultations, the moratorium (as well as the shoot on sight policy) was lifted in 2019, citing the prevalence of HEC and associated livelihood impacts. According to Philda Kereng, the Minister of Environment, Natural Resources Conservation and Tourism:

> It was clear from these consultations that communities who live side-by-side with elephants and whose livelihoods are most affected by human-elephant conflict wished to have a greater say in the management of elephants (Republic of Botswana, 2021, p. 6).

Hunting by both Botswana citizens and international actors has since resumed. Botswana expects the reversal of the hunting moratorium, "to increase community tolerance for elephant through employment, cash and other in-kind benefits" (Republic of Botswana, 2021, p.17). However, as a result of the COVID-19 pandemic and the corresponding travel restrictions, both consumptive and non-consumptive tourism have declined.

Following Masisi's election, but prior to the lifting of the hunting moratorium, Botswana engaged with other KAZA partner states in the formulation of a Strategic Planning Framework for the Conservation and Management of Elephants (Nyambe, 2019). KAZA partner states convened in Botswana for the Kasane Elephant Summit. Government officials from Botswana, Namibia, Zambia, and Zimbabwe convened to discuss transboundary elephant management, further endorsed the KAZA Framework, and agreed to several related recommendations.

Elephant Conservation Policy

In the Strategic Planning Framework for the Conservation and Management of Elephants (Framework) (Nyambe, 2019), KAZA partner states agreed to develop "an interconnected network of safe habitat… across KAZA" in order to promote the migration and dispersal of elephants from areas of high population density to areas of low population density within the Transboundary Conservation Area. At the landscape level, the Secretariat asserts that HEC may have a "push" effect on elephant movements, while low-elephant density habitat in Angola and Zambia may have a "pull" effect (Nyambe, 2019). The KAZA Framework (2019) lays out a vision for "KAZA's elephants… [to be] conserved to the benefit of people and nature within a diverse and productive landscape" and stating the following strategic objectives:

1. Facilitate the development of an integrated land use planning process to secure long-term ecosystem integrity and connectivity of KAZA's elephant population
2. Maintain and manage KAZA's elephants as one contiguous population
3. Promote and support co-existence of humans and elephants for ecological, social and economic benefits
4. Reduce the illegal killing and trade in elephants and elephant products
5. Establish a high-level decision-making process on which to build the planning framework for conserving KAZA's elephants (Nyambe, 2019, p. 2-4)

Broadly, these objectives call for transboundary coordination in the short and long term, and the plan outlines a five-year review.

While there is overlap throughout, Objective 3 of the Framework relates directly to HEC, referring to HEC as a "recurring theme" across KAZA as well as emphasizing the necessity of communities benefitting from elephants because they are a "first line of defense" against the illegal wildlife trade (Nyambe, 2019, p. 3). In the short term, they assert a need for promoting "alternative livelihoods" and sharing best practices for HEC mitigation as well as monitoring,

adaptive management, sustainable use, and capacity building (ibid, p. 6-7). In the medium term, the plan seeks to:

> Strengthen and expand organisational development support to community-based conservation structures e.g. transboundary natural resource management community forums (Nyambe, 2019, p. 7).

The broader Framework encompasses the national elephant policies of its partner countries. The objectives of this Framework, for example, are paralleled in the recent Botswana Elephant Management Plan (BEMP) (Republic of Botswana, 2021).

The BEMP builds from the Botswana Wildlife Policy of 2013 which established the national governance structure for wildlife conservation and utilization. These national policies are constrained by multi-lateral agreements such as CITES, the Southern African Development Council (SADC), various United Nations Conventions, as well as the above KAZA Framework.

In the BEMP, Botswana self-identifies the challenge of balancing elephant conservation, broader habitat and biodiversity conservation, and rural livelihoods. Accordingly, the Republic of Botswana (2021, p. 34) presents a vision:

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

This vision is supported by the following, Key Components: Protection and Law Enforcement; Human-Elephant Conflict Management; Management of Habitats and Connectivity; Social and Economic Framework; Conservation Capacity; Coordination and Collaboration (ibid., p. 32). The BEMP's Vision and Key Components align with the Objectives outlined in the KAZA Strategic Planning Framework (Nyambe, 2019).

Given the complex nature of elephant conservation and rural development, the above key components intersect with one another and are not fully discrete. Regarding the governance of HEC, for example, the braided components of 1. Human-Elephant Conflict Management; 2. Social and Economic Framework; and 3. Coordination and Collaboration are particularly interwoven. Given Botswana's role translating policy to practice, the BEMP presents Strategic Objectives, Outcomes, Performance Indicators, Means of Verification, and those with the Responsibility for implementation. An abridged version of this action plan with the three particularly relevant key components is presented in *Table 1*.

As evident in *Table 1*, the BEMP outlines Strategic Objectives which seek to reduce HEC, enhance rural livelihoods, and collaborate with national and international stakeholders. At the level of Outcomes, the BEMP suggests participatory mechanisms which increase communities' tolerance for living with elephants and scale internationally. These are echoed in the Key Performance Indicators: reduction of HEC, benefits to communities, and the appointment of a National Elephant Coordinator, as well as nested national and regional elephant conservation committees. At the intersection of these Performance Indicators, Botswana has an opportunity to restore HEC governance to people in the Chobe Enclave. Importantly, DWNP is primarily responsible for translating this action plan into practice.

Table 1. Botswana Elephant Management and Action Plan Abridged (Republic of Botswana, 2021)

Key Components	**Human-Elephant Conflict Management and Reduction**	**Social and Economic Framework**	**Coordination & Collaboration**
Strategic Objectives	An enabling environment for options to reduce or, where possible, prevent human-elephant conflict (HEC)	Implement strategies to enhance the contribution of elephant to rural livelihoods and national development.	Ensure effective coordination and collaboration with national and international stakeholders

Outcomes	Options for increasing tolerance for co-existence with elephants implemented and tolerance for living with elephants increased	Participatory mechanisms improved, incentives for living with elephants increased and the distribution of financial benefits from elephants improved at local and national levels	Implement mechanisms to achieve optimal coordination at national and international level to assess progress in adaptive elephant population management
Key Performance Indicator	Reduction of HEC to less than 50 incidents per year by 2026.	Benefits to communities and contribution to national development increased and HEC reduced	National elephant coordinator appointed and national and regional elephant conservation committees with appropriate stakeholder participation appointed and information dissemination programme in place.
Means of Verification	Monitoring & database of numbers of incidents & outcome of interventions.	Report on amounts and distribution of revenues from consumptive & non-consumptive utilisation of elephants	Reports & minutes
Responsibility	DWNP	DWNP; private tourism companies; NGOs; Community-based Organizations	DWNP

Critical Institutionalism

Human-elephant conflict research and policy can be enriched by the study of institutions. Institutions defy definition and are a source of debate (Hodgson, 2015). For the purpose of this research, institutions are defined as the tangible and intangible manifestations (organizations and belief systems) of integrated formal and informal rules (law, policy, social norms) that govern human relationships with one another and the social, material, and spiritual worlds around them (Cleaver & De Koning, 2015; Hall et al., 2014). Critical institutionalism analyzes institutional arrangements in the broader contexts of political ecology and political economy and explores to what degree community-based projects have been successful in promoting social justice in the management of natural resources (Cleaver & De Koning, 2015).

Cleaver (2012) synthesized critical institutionalism from a body of work critiquing what she termed "mainstream institutionalism" and its homogenous portrayal of communities, avoidance of politics, and socially inadequate analyses (Hall et al., 2014). As a result, critical institutional analyses explicitly examine human agency, social complexity, and power relations through the lens of social justice (Cleaver & De Koning, 2015). Through interrogation of human agency, social complexity, and power, critical institutionalism can promote inclusive governance of natural resources. Consequently, critical institutionalists ask: What are the complex and unequal relations around natural resources management within and between the local, national and international levels (Hall et al., 2014)? Here, I expand upon 1) Agency; 2) Social Complexity; and 3) Power.

Agency

Critical approaches to institutions counter the rational choice assumptions dominant in institutional analyses. According to Cleaver (2012, p. 117), the rational choice model is more concerned with the choices that people make "rather than their ability to make them". Agency is both "the potential and actual ability of individuals and institutions to affect the circumstances that structure their thought and action" ("Agency", Rogers et al., 2013). Given that institutions are operationalized by human action, understanding agency is vital in critical institutional analyses.

Rational actors are conceived to be self-interested and self-optimizing, bounded by their capacity to access and process information and acting in response to external rules (Cleaver, 2012). In the absence of these rules, so-called rational actors then maximize their use of resources. However, human actions are shaped by social, economic, emotional, and moral understandings of the "acceptable way of doing things" (Cleaver, 2012, p. 34). Critically, these rationales and worldviews are not static, but change through creative action.

Beyond the rational choice model, critical institutionalists understand human agency in institutional change to be a process of *bricolage* and the actors themselves as *bricoleurs* (Cleaver, 2012). Institutional bricolage is a process through which individuals consciously and unconsciously reshape institutional arrangements drawing on whatever resources are readily available (Cleaver & De Koning, 2015). As a process, institutional bricolage is a sort of do-it-yourself project through which people craft rules, norms, organizations, and belief systems and imbue them with meaning (Cleaver, 2012). Through bricolage, new and old rules and norms weave together to produce hybrid organizations and belief systems (Bersaglio & Cleaver, 2018).

Despite creative action, bricoleurs are socially and materially constrained. Citing Levi-Strauss (1962), Bersaglio and Cleaver (2018) write, "A bricoleur might make a lampshade out of an umbrella stand but the same umbrella stand cannot be made into a space shuttle (p. 476)." Beyond the physical limitations of converting an umbrella into a space shuttle, societal pressure discouraging abnormal behavior – an expression of power – could also limit this action. Understanding institutional change as a process of bricolage is useful for understanding how who governs influences conservation outcomes (Hall et al., 2014). Though non-human actors such as elephants have agency in their own right (Evans & Adams, 2018), for the purpose of this study, agency will primarily be understood as the ability of human individuals and groups to engage in creative action.

Social Complexity

Individual agency is enabled and constrained by the complex nature of society. The structure of society and individual identities are recursively mediated by social attributes such as race, gender, class, caste, ethnicity, religion, sexuality, age, and familial status (Whaley, 2018). Because socially embedded individuals and groups operationalize institutions, their respective attributes generate socially complex institutional arrangements. Relevant social attributes may include race, gender, class, ethnicity, and nationality (Garekae et al., 2020; Gore & Kahler, 2012; Lepetu et al., 2008).

Social groups are often conceptualized as communities; however, a predominant critique of "community-based" approaches to conservation is the assumption that communities can be delineated as discrete, homogenous groups with shared norms (Agrawal & Gibson, 1999; Hall et

al., 2014). These critiques are long-standing. In 1999, Agrawal and Gibson (p. 629) suggested a more critical approach to understanding communities:

> [Community] must be examined in the context of development and conservation by focusing on the multiple interests and actors within communities, on how these actors influence decision-making, and on the internal and external institutions that shape the decision-making process. A focus on institutions rather than 'community' is likely to be more fruitful for those interested in community-based natural resource management.

Critical institutionalism follows this line of thinking by explicitly investigating social complexity (Cleaver & De Koning, 2015).

Consequently, complexity characterizes the arrangement of institutions within and between levels of governance. Critical institutionalists conceptualize the boundaries of local, national, and international levels of governance as not discrete, but "fuzzy" because organizations often do not fit neatly in one level or another (Cleaver & De Koning, 2015). In the messy middle – the meso-level interfaces between institutions – bricoleurs may consciously and unconsciously smooth discrepancies between local and international politics (Cleaver & De Koning, 2015). Beyond homogenous communities, a critical institutional approach is useful for examining how organizations navigate between local and international level conservation politics.

Power

Power can be conceptualized as the ability to not only act, but to direct the action of others, is exercised by both individuals and institutions, and is expressed through action and discourse (Rogers et al., 2013). Whaley (2018) reminds us that institutions tend to reflect socially embedded power relations, and that attempts to impose new institutions are not "undertaken upon a 'blank slate' (p. 139)". According to Hall and colleagues (2014), mainstream

institutionalism fails to "interrogate structures of power upon which practices and outcomes are constructed (p. 76)." This avoidance of politics is countered in critical institutionalism through the explicit examination of power relations.

If institutions are understood as things people do rather than objects in their own right, then human interactions within and between institutions are produced by complex social attributes. Social complexity enables and constrains human agency through the inequitable distribution of power (Cleaver, 2012). In this way, the complex, power-laden social identities of people shape power relations within and between institutions and their subsequent outcomes. Power relations, then, limit the participation of some people in natural resource management and in turn produce the inequitable access and use of natural resources (Cleaver & De Koning, 2015). Though power relations are often intangible, the workings of power become visible through human interactions. Therefore, critical institutionalists understand power to be expressed and legitimized through actions and discourses.

In the Chobe Enclave, power is held differentially between community, state, and non-governmental actors. These power relations are in part reinforced by different social attributes such as race, gender, class, ethnicity, and nationality (Whaley, 2018). Collectively, social attributes and the power relations they produce differentially enable and constrain the agency of individuals and groups to take creative action in the governance of HEC. Because analyses of power are value-laden, this research expresses a normative commitment to restore HEC governance to people in the Chobe Enclave. In the next section, I connect critical institutionalism as a conceptual framework to data collection and analysis.

METHODS

Research Design

Hesse-Biber and Leavy (2011) present qualitative methods as well suited to understand, "the subjective meanings that individuals give to their social worlds (p. 33)". Critical approaches further embrace this subjectivity (Cleaver & De Koning, 2015; Hesse-Biber and Leavy, 2011). This research employed a critical institutional approach and conducted in-depth, semi-structured interviews with Enclave residents and conservation practitioners to explore how institutional arrangements shaped human-elephant conflict governance. These interviews built knowledge from the experiences and perspectives of participants (Creswell, 2009), and – given my status as a cultural outsider – facilitated the expression of different ways of knowing (Denzin et al., 2008). This research was conducted with permission from Botswana's Ministry of Environment, Natural Resource Conservation, and Tourism, as well as University of Montana's Institutional Review Board.

Study Sample

Sampling is the process of selecting observations from a population, and the sampling frame delineates a subsection of that population from which to sample (Creswell, 2009). For the purpose of this study, the sample includes residents of the Chobe Enclave (Enclave Residents) and practitioners working for Government and non-governmental conservation organizations (Conservation Practitioners). This study employed a nonprobability, purposive sampling procedure where initial respondents were explicitly chosen by the researcher to address the goal of the study and further identified through chain referral (Hesse-Biber & Leavy, 2011). I conducted 26 interviews with 34 participants, and I have listed interview participants in *Table 2*.

22 of 26 interviews were conducted with individual respondents. 4 of 26 interviews were conducted with small groups of interview participants (numbering from 2 to 4 people per group) at the request of participants.

The delineation of Enclave residents and conservation practitioners was chosen due to demographic differences. Importantly, neither Enclave residents nor conservation practitioners are homogenous groups, rather they demonstrate complex social attributes within their delineations.

Conservation practitioners were characterized not only by their profession, but by their advanced formal education from academic institutions both within and beyond Botswana. Generally, conservation practitioners, whether DWNP, KAZA, or EWB, had moved to Chobe District from elsewhere. DWNP officers were all Botswana citizens who had moved to the area from elsewhere in the country. Some interview participants from KAZA and EWB identified as citizens of Botswana, while others identified nationalities from other KAZA partner states and beyond. For conservation practitioners who identified as citizens of Botswana, the primary languages spoken were English and Setswana; international respondents spoke languages from their respective nations, i.e., English, Lozi, etc. Of those conservation practitioners who were citizens of Botswana, only one identified as originating from the Chobe Enclave. Practitioners ranged in age from approximately 30 to 60 years old.

Enclave residents were characterized, as the name suggests, by their primary residence in the Chobe Enclave. Of 24 Enclave residents that participated in the study, I spoke with Enclave residents from each of the five villages of Mabele (4), Kavimba (5), Kachikau (3), Parakarungu (5), and Satau (7). While most of chiefs, headmen, and Village Development Committee members were also farmers either presently or in past years, I use “farmers” to distinguish those

not currently in village leadership positions (*Table 2*). Enclave residents that participated in interviews ranged in age from approximately 30 to 80 years old. 18 of 24 interview participants from the Enclave identified as baSubiya, while the remainder identified as baTawana, baSarwa, and ethnicities from elsewhere in the country. Enclave Residents generally held less formal education than conservation practitioners. In contrast most residents had a life-long attachment to the Enclave, some of whom shared experiences dating to before Botswana's 1966 Independence. Across both Enclave residents and conservation practitioners, interview participants were predominantly men (28 of 34).

Data Collection

Data was collected through semi-structured, in-depth interviews. Interviews occurred in May and June of 2022. Separate interview guides for Chobe Enclave residents and conservation practitioners are provided in *Appendix I* and *II* respectively. The guides are primarily informed by critical institutionalism (i.e., Bersaglio & Cleaver, 2018; Cleaver, 2012; Cleaver & De Koning, 2015; Hall et al., 2014) as well as HEC literature (i.e., Gupta, 2013; Margulies & Karanth, 2018; Massé, 2016; Redmore, 2020), and further enriched by recent developments in national and international elephant policy (i.e., Nyambe, 2019; Republic of Botswana, 2021). Interview questions focused on participants personal experience with elephants, eliciting self-definitions of HEC, their perspectives on HEC reduction, the relationship between Enclave residents and conservation practitioners, the impact of national and international elephant decisions, and the changes they would like to see in HEC management and reduction.

The interview guide acted as a roadmap, ensuring that the study's research questions were addressed during interviews; however, the semi-structured format provided flexibility during the interview for both the researcher and the respondent (Hesse-Biber & Leavy, 2011).

Given the cultural differences between myself as a researcher and interview participants, semi-structured interviews also allowed for the emergence of themes that were not present in the literature and prepared interview guide (Denzin et al., 2008). Emergent themes directed further theoretical sampling (Creswell, 2009).

With the consent of the participant, interviews were audio recorded. Though English is an official language of Botswana and spoken by conservation practitioners, English is not spoken universally by Enclave residents, particularly older people. My American accent and COVID mask created further language barriers. When necessary, I employed a local translator to enable data collection for 6 of 24 Enclave residents. 1 of 6 only spoke Subiya. 5 of 6 preferred to speak in Subiya to ask clarifying questions and responded to interview questions in both Subiya and English. The translator was compensated according to a standard payment rate outlined by the Okavango Research Institute.

Data Analysis

Interviews were transcribed using Rev.com and proofed to ensure accuracy. Using NVivo qualitative data processing software, I analyzed the major themes from the transcripts and categorized segments with predetermined codes from both my conceptual framework as well as those that emerged from the interviews themselves (Creswell, 2009). Codes were compared across interviews and analyzed for similarities and differences between Enclave residents and conservation practitioners. A coding scheme emerged from the data informed by relevant policy documents and critical HEC research.

Table 2. Interview participants

Study Sample	Description	Participants
Conservation Practitioners	Department of Wildlife and National Parks	6
	Kavango Zambezi Secretariat	1
	Elephants Without Borders	3
Enclave Residents	Chiefs	5
	Headmen	7
	Village Development Committee	4
	Farmers	8
Total		34

RESULTS

In this results section, I first relate the direct and indirect impacts of human-elephant conflict experienced by Enclave residents. Then, I present how HEC is understood differently by conservation practitioners and Enclave residents. Finally, I relate how conservation practitioners and Enclave residents aim to reduce HEC. In each section, I employ a critical institutional approach to be explicit about themes of agency, social complexity, and power.

Human-Elephant Impacts

Enclave residents and conservation practitioners shared complex interactions between humans and elephants. Sampson and colleagues (2021) present the direct impacts of HEC as crop and property damage as well as injury and loss of life and the indirect impacts of HEC as fear of attack, restricted mobility, and disruption of livelihoods. In this section, Enclave residents relate their personal experiences with the direct and indirect impacts of elephants.

Enclave Residents

Direct Impacts

Elephants' seasonal movements influence their impacts on people's fields and villages the Chobe Enclave. Residents of the Enclave reported seasonal movements of elephants from the forest to the floodplain as the animals seek food, water, and shelter. For example, a farmer from a village near the river shared:

> The numbers of elephants, they do change. The change is, there are times when elephants are not too much through the villages because there is water up there in the forest and in pans [watering holes]. At that time we don't experience more animals here, but the moment those pans dry up, now they start coming. Because they know the big source of water is the river… Just like now [June], it's winter and it's the dry season.

For another farmer living nearer to the forest, seasonality of elephant movements was experienced differently:

> There are plenty of elephants because during this season which is coming, hot season, August, September, October, there'll be plenty at my place there. Yes. During the day, they're just here because they're under these acacia trees [for shade] and they need feed as well from these trees.

For people living in the Enclave, the direct impacts of elephants in their fields and villages were frequently viewed negatively. These direct impacts include damage to field crops, fruit trees, water infrastructure, and fencing. For example, one Chief shared an interaction:

> What I have experienced concerning elephants, maybe I will just say… destroying field crops. I think those are experiences that I can talk about, because one other morning, just here along the riverbank, when we reached that side with my father, we just found that they destroyed the fence, enter into the field, and it destroyed almost a half of a hectare, which means there were many in there… But for the field, it was very disappointing. Remember the hard work of plowing, and after some times when you are about to harvest, then an animal gets in and destroys everything. It's very painful.

Similarly, an Enclave farmer shared, “In 2018 I had planted some bananas and then they were at the fruiting stage. I think there were about 10 of them. They were at the fruiting stage and then elephant just came and whoop, wiped out everything”.

However, it is critical to note that communities in the Chobe Enclave are complex and Enclave residents do not all experience elephants in the same way. While discussing HEC primarily evoked negative impacts of elephants on people, some Enclave residents also shared positive impacts. For example, one farmer shared, “Myself I don't have a problem with elephants because when it dumps it brings manure, it can break this tree when [it] needs food there. I get firewood from there…” Another farmer expressed their experience with elephants as relatively neutral. When asked if elephants get into their fields, they responded, “Yeah, sometimes, it's only that all of the times I'm there. So when they come, they feel that here there's people, then there's dogs. Then they just pass by.”

In addition to field crops and fruit trees, Enclave residents shared experiences with elephants damaging water infrastructure. Here, one resident shares both the direct impact of elephants as well as a potential solution:

> Then the other incident is that one of destroying these water points. Normally when we dig, we dig a hole like this, it's a well, it's an open one. Then in that case, they [elephants] come there for water, then others end up falling inside. And for it to come up, to come out of that, it's a problem… Then the well was destroyed. That is our challenge. But this time around, we had decided to drill just using a pipe, then we close this thing, and then the one pipe will come out and connect it to the generator. And that way, they cannot do anything here, because they cannot see the water inside. That is the one remedy we tried to improvise.

For Enclave residents, their ability to exert agency and "improvise" remedies to address impacts with elephants is materially constrained. For example, fences constructed to exclude elephants have varying success. Here, it is critical to reiterate that the impacts of elephants occur not only in fields but also within villages:

> Where fences, we don't even see anything. You can go down... [an] example is the Junior Secondary [Middle] School. They use the wall with metals to protect the children, take a big wall around the school. Everything is down. Because of elephants.

Beyond damage to crops and other properties, human injury and mortality are another direct impact of elephants on people in the Chobe Enclave. One respondent shared their personal experience:

> My husband has been attacked by wild animals twice. At first, it was a lion. He survived it. Secondly, it was an elephant. He survived it. He remained with the scars of those deadly animals… And the painful part of it is, sometimes when you look at some people, yes, my husband was injured, was attacked, he had that trauma for some time, but he can walk. I thank God because he can walk, though he's still bearing those bad scars, but he can walk.

Indirect Impacts

Enclave residents understood these direct impacts with elephants to constrain their agency, creating indirect impacts of their own. Not all people have personal experience with

injury or death caused by elephants, but many Enclave residents perceived proximity of elephants and other wildlife to their homes and fields as negatively impacting their safety and restricting their mobility. One VDC shared:

> Elephants, they bring big problems in the community… When it comes this season [dry season], our children from there come to school here. It's hard for them to come and attend school. They end up having one to three months without coming at school, that's because of elephants.

Direct impacts such as human injury and crop damage have indirect impacts on peoples' freedom of movement and ability to make a living. A farmer shared:

> So elephant and people are always come across each other more special this time when we are going for taking grasses. June, July to August, September, people of this area that are taking grasses for making their houses and some are selling for their living. So it is when the elephant that come across those people… the elephant attacked them and they end up injuring a person.

The potential of a negative encounter with elephants has led some to avoid harvesting traditional foods in the forest, as this VDC shared, "We were having many fruits, which we were eating here from the forest, but now we can't get even one… but now nothing completely because of these animals [elephants]."

For Enclave residents with agrarian livelihoods, the impacts of elephants have led some to seek other ways of making a living. One chief shared:

> [The ways we make a living], they have changed, because we grew up plowing. Plowing. So that because of the elephants, our living has changed. We are no longer plowing as before. Then we have to resort to other means of survival... that we used to do in the past, like fishing. And then if you recall, fishing these days is restricted… So the lifestyle…of my people, have really changed compared to before. Now we have to spend money to buy food, to eat. But in the past, we were using our hands to plow, to plant, and then we eat.

This Chief reflected on how elephants have impacted the way Enclave residents make a living, and how people have attempted to exert their agency by returning to fishing as a primary

livelihood. However, their ability to make a living through fishing as they had in the past has been socially constrained by fishing regulations.

Elephant crop and property damage also indirectly constrains Enclave residents' ability to implement village development projects. One VDC member shared how elephants constrained their agency:

> We don't want any animal conflicts in the village because they destroy many projects. Even though you have a project and you want to do something, as we youth, we have many plans to do some. You want to do something but you fail because of animals. Yes. So they must be managed, these elephants… We were having a project of a garden. And then the project failed because elephants come and destroy… For now, we are just sitting doing nothing.

Other Wildlife Impacts

The direct and indirect impacts of elephants on Enclave residents do not exist in isolation. Enclave residents experience impacts from other wildlife as well as elephants, to the extent that some interview participants questioned why the focus of this research was elephant specific. For example, a headman stated, "There are certain animals also who destroy often, like elephants, and buffaloes. You see, buffaloes are the same as the elephants." Here, it is important to note the framing of HEC fails to capture the greater interactions between Enclave residents and other wildlife. This was frequently evident when a question about "human-elephant conflict" would receive a response citing "human-wildlife conflict". For example, when asked about interactions with elephants, one respondent shared an experience of a buffalo killing a relative.

While the direct impacts of carnivores differ in their depredation of livestock rather than crops, they have similar indirect impacts on livelihoods and freedom of movement:

> Beside elephant, we have got some of animals like lions. Lions used to kill animals. Cattles. We need the government maybe to help people when they have kraal. If there is anything or something which can chase those animal from killing cattles from their kraals.

While smaller wildlife such as duikers, porcupines, wild pigs, etc. also create direct impact to crops, they weren't perceived to pose the same potential for human injury as elephants. Despite the impacts of other animals, a headman explained how elephants were of particular interest to conservation practitioners:

> The Government shouldn't look only to the elephant, because there are a lot of animals which are causing a problem. Conflict with the people baboons, monkey. Those small things… Even the hyena, like he was saying. That's a problem. The buffalo are dangerous. The lion, the leopard. There are a lot of animal which are the problem here. So the government tend to look the elephant only, as it's the only one…So the government should look [at] all those.

Conservation Practitioners

Direct Impacts

Regardless of their current position, many DWNP officers responded to HEC in previous roles during their careers. One DWNP officer shared:

> I've seen how they [elephants] damage people's properties. There were times when they'll be there in a village causing havoc. We'd be called at night. We have to go drive them out of the village. And then at times we had to, at some point whereby life was really threatened, we had to put some down. So I've really worked, I've really interacted with elephants.

Another DWNP officer spoke to their experience responding to human and elephant injury and death:

> I've attended several instances whereby [elephants] had destroyed people's property, whereby [elephants] had killed people. Obviously, that gets to you. When a person is dead, it really gets to you. But then again, you kill the elephant. The elephant doesn't know what it has done is wrong. I think those are the interactions that I've had, seeing the damage, seeing the deaths on both sides.

Another DWNP officer spoke to personal experience with a very literal "impact" with an elephant in their previous post in Ngamiland:

> The one that comes to mind is when the elephant attacked us in our vehicle… Initially, when the charge started, we just took it that, "Ah, no, it's just a mock charge", until it was too late, and it hit our car in front and damaged it while we were inside there. Fortunately,

> it had left a young one and just attacked us, hit the vehicle, lifted the front end up off the ground and then released and then went back to the thickets.

A DWNP officer living in Park housing near the Chobe Enclave, shared their experience with an elephant damaging water infrastructure:

> Right now, they're just destroying our pipes… where I am staying is just next to the river. But [the elephant] doesn't utilize the water in the river. It prefers the tap one, water from the tap… So it broke one of the taps here … So you can see that I tried to tie the tap here with this wire. It came and just took off the wire... And in the morning we find that water just flowing as it is here. So I'm also in conflict with elephants, right?

This respondent from DWNP had exerted agency in their attempt to remedy the problem by tying the waterpoint with wire, but like Enclave residents, their ability to act was constrained materially (i.e. the wire) and socially (i.e. what is permitted in the Park).

Similarly, another conservation practitioner shared their experience with elephants damaging fences in their yard, "Around a year ago at my house in Kasane, an elephant, a baby elephant with the mother destroyed my fence, walked through my yard, just across…"

Indirect Impacts

These personal experiences with elephants also produced indirect impacts on interview participants. One DWNP employee shared an experience of restricted mobility when elephants are drawn to fruit trees near their housing:

> Right in my backyard, like I was telling you, if I forget to take my clothes from the line..... But you just can't take that risk, you know, they [elephants] have no boundaries, they know no fences, walls, the same. Yeah. So. I have a Marula tree in my yard, they come there every night to eat the fruits. And you can imagine if I have an emergency… You can't just walk out and start your vehicle when they are around. So I know as much as the farmers know, that life with elephants is not your everyday cup of tea.

Here, this respondent voiced the "risk" of encountering elephants limiting their freedom of movement. Critically, this DWNP officer also expressed a sense of a shared experience with farmers, e.g. "life with elephants".

Most conservation practitioners in the Chobe District moved from locations where elephants were not prevalent. One DWNP officer shared:

> Before coming here, I was based… in the southern part of Botswana, whereby most of the animals tend not [to be as] dangerous as compared to those which are found around Chobe or in the northern part of Botswana.

Accordingly, many conservation practitioners understanding of elephants came through their formal education prior to moving to Chobe. Another DWNP officer shared:

> I am from [the south] where there are no elephants. So when I was transferred to an area that is infested with elephants, you know, I was a bit scared... But actually, going to school assisted me because I could understand the behavior of these elephants, so it was not that scary when I was transferred to areas infested with elephants.

Here, the respondent shares how upon transferring to Chobe, their education increased their agency. Specifically, their prior knowledge of elephant behavior translated to a reduction of fear, e.g., “not that scary”.

One conservation practitioner who grew up in the Enclave shared their experience with elephants:

> I grew up here. So I don't even remember the first time I saw an elephant or my first elephant, because I just grew up seeing them... Yeah. They were there, were around me. So it has always been part of me. The experience is this difference of values, you’re living with elephants around you, and coming from a farming family is a different level of experience. Because, the conflict with the farming with agriculture and agriculture side is something that I grew up seeing with my father. I spent most of my childhood days – even now I'm still doing that – spending nights out on the farm. Trying to keep the elephants out of the farms is something I grew up doing. And yeah, I've seen elephants being shot from that conflict, dying, and destroying crops. And I've seen people being attacked by elephants around me. I know people who died from elephants. So it's different. And when you grow up, then go to a different level where now the tourism, that understanding the tourism and the benefits of elephants. So I've seen... I know... I have family members who work on tourism because of these elephants. So, it's another experience also what I see on my perspective on elephants. So yeah. It's just being around them and different experiences.

Here, this respondent shares their personal experiences with the indirect impacts of elephants on livelihoods – both positive (tourism) and negative (agriculture).

Understanding Human-Elephant Conflict

Conservation Practitioners

Conservation practitioners' personal experiences with the impacts of elephants shape their self-definitions of what HEC is and why it occurs. Generally, conservation practitioners understood HEC to be the negative outcome of competition between people and elephants for limited land and water, which was exacerbated by increasing human and elephant populations. In this section, I present the voices of conservation practitioners as they relate their perceptions on the meaning and causes of HEC.

When asked what HEC meant to them, conservation practitioners often cited the negative outcomes of interactions between people and elephants. For example, one EWB respondent, understood HEC to be, "a negative outcome of human and elephant interaction, being it on their properties provided damage or people being affected or something." One practitioner shared how recent changes in scientific literature shaped their understanding of HEC, "Even the idea of conflict now, you can't really use it in scientific papers. It's got the wrong connotations. That's why we have to use 'interaction'."

Often conservation practitioners understood negative interactions to be caused by humans and elephants "encroaching" into one-another's territory. A DWNP officer shared:

> Human-elephant conflict, I would say it's an undesirable situation that transpires or when the interaction between people and elephants occurs, mainly occurs whereby, I would say in two ways. One, the elephants would encroach into communities looking for resources, such as water... In the process, they end up damaging a property or even killing people… The other way around would be when people, as they expand, they encroach into elephant territory, and that interaction would lead to damage or even death to both parties. Obviously, that would leave an unpalatable lasting impression, either in people or in elephants. That ultimately, would create hatred especially by people towards animals, whereby whenever they see an elephant, they see now it's a destructive animal.

This respondent related the impacts of HEC to be both direct – property damage and human death – as well as indirect – hatred toward elephants. A respondent from KAZA shared a similar understanding of HEC:

> It's poorly managed or unmanaged interaction between an individual community with a group of, or an individual elephant often resulting in worst case scenarios, fatalities of either and or damage of infrastructure or property and also crops. And also something that we tend to overlook, sometimes it's just an elephant being present at a particular time, because people are not ready to have that experience, they interpret that experience as an invasion, by an elephant or group of elephants. There are many instances where elephants are probably just within the vicinity, walking through and no crop damage, but they'll have walked through an area and it is interpreted as conflict…

Here, the respondent echoes the direct impacts of human fatality and crop and property damage. Importantly, they also share that communities can perceive elephants' presence as an "invasion" in the absence of crop damage.

Conservation practitioners further shared that negative interactions between people and elephants were produced by competition over limited land and water resources. A DWNP officer summarized this understanding of HEC, "that is the conflict that is there between humans and animals, because they are fighting for space. They're competing for space." Another DWNP officer connected this competition to the location of settlements between elephants' wet season forage and dry season water resources:

> Human-elephant conflicts. That is the interaction of elephants and people… why are we interacting with elephants? Obviously, there is the issue of space. For example, here in Chobe [District], the main source of water is the river. And then you find out that the settlements are between the grazing areas and the source of water in the main river… human-elephant conflict, this is where it arises.

Critically, many conservation practitioners understood HEC to be inevitable. For some, this inevitability was understood to be the result of the location of Chobe settlements near the river, as one DWNP officer shared, "there's no how we can stay without the conflict it should

always be there because we are where they [elephants] have to go in search of water". Another conservation practitioner shared this understanding of HEC:

> It occurs inevitably because of coexistence. We're talking of a shared landscape with people and wildlife, including elephants live side by side. It occurs also because of incompatible land uses. And lastly, but not the least, it occurs in some instances, particularly in the case of Botswana and Zimbabwe, because of overpopulation of elephants, and resulting in many more incidences compared to those areas that have smaller populations.

Here, this practitioner understood HEC to be inevitable in spaces where people and elephants share a landscape. Further, this was understood to be exacerbated by elephant "overpopulation".

This narrative of humans and elephants competing for limited land and water resources frames how conservation authorities seek to reduce HEC. One DWNP officer shared what this meant to them:

> Land is not expanding. It's a resource by the way, which as humans we want to utilize. It is the same resource that elephants and other species want to utilize. And our, uh, settlements, expansion, our activities in this land are definitely going to affect the welfare of the wildlife. So if I, were God [chuckles] I would increase the land, so that as people expand into these lands, you know, enough is still there for, for wildlife to utilize. So basically I'm saying, if you were to constrict humans from expanding their activities into the wildlife areas that would create the ideal for sustainable conservation. Because, ah, the rate of human expansion, my friend, is threatening the well-being of wildlife everywhere, not only in Botswana. That is why there is this field, which is attracting a lot of attention, called conservation.

When those in power understand HEC as the inevitable conflict between humans and elephants, conservation interventions are focused on technical solutions rather than the underlying social causes of HEC. However, Enclave residents shared a more complex narrative.

Enclave Residents

Enclave residents also understood increasing human and elephant populations to create competition between people and elephants. For example, HEC was understood by one chief as, "When elephants and people share the same habitat, often competing for the same resources".

Subsequently, this respondent understood the cause of HEC to be the, “increase in population for both animals and humans.” Notably, this chief links the increase in people and elephants not only to competition for resources, but also to the trend of his people abandoning their agrarian livelihoods:

> Elephants now have increased, and even people have also increased, and we are competing for the same resources. I may say that. Then in that case, the increase of elephant reduces the number of field to be plowed… Because most of the people now have given up, more especially along this area, Kavimba, compared to… other areas. There are a few … when it comes to plowing season, because of the increase of elephants that destroys their crops, and that is the impact that they have.

Again, this chief shares how the increase in elephants around Enclave fields and villages limits his people’s ability to conduct agrarian livelihoods.

Accordingly, given the impacts of elephants on their fields, some Enclave farmers agreed that conflict between people and elephants was inevitable, for example:

> Human-elephant conflict, it's a very dangerous thing because when animals are very dangerous, there's no how we can live together in the same place. And because as for now human-elephant conflict, like the Government is saying, that we should get used to wild animals such as elephants. It's impossible, because an elephant can kill you or it can do whatever it does to you. So that really shows there is no relationship in-between.

While there was alignment here between Enclave residents and conservation practitioners in recognizing competition between people and elephants for land and water, interviewees from the Enclave shared that the impacts of elephants on their livelihoods were produced by policy decisions made by people in power. For example:

> To myself, conflicts are there because elephants they move looking for green pastures, they're free on Earth. So the conflicts mostly, it can be brought by us, humans. Because, our leaders… they're the one who can organize these other things not to have conflicts.

Here, this farmer asserts that “our leaders” have the power to act in reducing this conflict, and continued to share, “But when they want to control it, they will control it. Myself I don't have a problem with elephants…”

Enclave residents felt that now they have don't have the ability to move potentially dangerous wildlife like elephants out of the village. A chief shared, "I don't like animals to stay in the village. Because I am not the government, if I'm the government I can just move it out... If they're there, we must run. Myself, I can't run…" Importantly, this respondent feels that the Government has this power to direct the movement of elephants.

Residents recognized the role of national policies in their experience with elephants. Here a farmer spoke to the uneven nature of HEC in the country:

> We are human beings. When we talk of government, we are talking of people who have authority over the entire nation and the disbursement of funds and other things…Right now we are in an area where a lot of wildlife is there, but people who are in, I would say in [the South], they don't have experience of what we have here. And if the law is enacted and it covers the whole country and it's just a blanket thing, it becomes unfair…

Critically, Enclave residents shared their understanding HEC, while inclusive of competition between people and elephants for land and water, was caused by historic conservation decisions. Accordingly, Enclave residents' agency to reduce HEC on their own has been limited by policies made by those in power. Historic conservation decisions have produced novel geographies of encounter in which Enclave residents live in closer proximity to wildlife then under previous institutional arrangements. Enclave residents further related how HEC in the Chobe Enclave has been produced through the 1) Displacement from Chobe National Park, 2) Restriction of Community Hunting, and 3) Marginalization of Traditional Knowledge.

Displacement from Chobe National Park

For Enclave residents, their interactions with elephants are intimately connected to Chobe National Park, which envelops the Enclave, and a legacy of displacement from those lands. Here, displacement encompasses both the physical removal and socioeconomic exclusion from a protected area. One Enclave resident shared:

> In 1966 in Serondela, there were certain village in there [Chobe National Park]. By then, the Government changed that village into a Park and then people just bleed everywhere, all over the country.

Displacement from Chobe National Park is connected to people in the Chobe Enclave's ongoing relationship with the Government and their management of elephants and other wildlife. In response to why people left the villages, a farmer in the Enclave shared this perspective:

> The Government decided to remove them, the villages, from Ihaha and Serondela, where they used to stay. He said he is now changing it into National Park, without even compensating those who are staying there. This is the arrogance of the Government, without even considering people who were staying there.

Though many recall their peoples' displacement from the villages, understandings of the power relations that produced that movement varied. One chief shared the process of displacement as akin to consultation, "No, it wasn't by a force, but it was, like men are being consultation… Consultation, I would say. Now the Government wants to put up this area, and the National Park. Now people will be required to move out of it. Yeah, just by consultation." A second chief described the experience of displacement as a "request" from the Government, "They were requested by the Government saying this area now is a National Park… They were not having any stress by that time. They just agreed to the request by the Government. Then they went this side. They came here…" A third Chief shared displacement as "forced" by the creation of the National Park, "They were forced. It was forced by the creation of the Park. Yes. In order to allow the establishment of their Park, yes."

The displacement of peoples from the land designated as Chobe National Park has produced a view among current Enclave residents that the National Park is a place for wildlife, not a place for people to live or conduct their livelihoods. One chief shared, "So in a National Park, human beings are not supposed to be living there. 'We have to push you somewhere where there's no National Park'." Another farmer shared that their father had a shop in Serondela.

When asked why people left, they responded, “I think it's just because they had to give way to animals…” Further, one resident felt that despite people’s traditional livelihood activities being prohibited in the Park, animals roam freely between:

> From Ngoma to Kasane, that area, you know, the Government doesn't allow anybody to walk, get firewood, cut grass. The firewood in the National Park, the grasses and leaves and trees are meant for animals. They [animals] leave those. They come to us.

While traditional livelihoods have been excluded from the Park, Enclave residents recognized that tourism has been proposed as an alternative. However, this too was tied to displacement. One respondent shared:

> My father had a plot in Serondela. Now, just last year, we heard that the Government have decided to cut Serondela into some pieces for tourism. Then we said, "No, if you are cutting pieces of Serondela for tourism, it is better you give those pieces to us, those who are [were] staying in Serondela, and we can rent it out to those who are interested in tourism because the plot belongs to us…

Importantly, prior to the establishment of the Park, Enclave residents recalled their ancestors living and working all along the Chobe Riverfront. Enclave residents named the locations of Serondela, Ihaha, Nanyanga, Kabulabula, and Simwanza specifically, though many more locations likely exist. In the years preceding the establishment of the Park, Serondela was a site of timber industry development. A farmer shared, “They were processing timber there. I think even a small rail there is still there.” At the time of the formation of the National Park, respondents remembered that people were already living in the present-day Enclave. Following their peoples’ displacement from the Park, one chief shared:

> Some of them, they went to Namibia, because during that time there was no border here, then we were led by one chief. After they created a border here, then we decided to have a chief that side and the chief this side. But our people were living down there at Serondela, and the Kabulabula. That's along the riverbank.

Speaking to the relationship of people on both sides of the present-day border, one headman shared, “Because by then, there were no boundaries. You could even walk from here to Namibia without entering any border.”

Today, Serondela is a common rest area and turn around point for tourism operators in the Park, as well as a site of future lodge development. Speaking to the relationship between people in the Enclave and the Park today, one headman shared, “No one is working there… Those who are working there, maybe they just came during the day, then they go back to Kasane.” While these responses are not an exhaustive history of the formation of Chobe National Park, Enclave residents linked their displacement from the Park to their present-day experiences with elephants.

In the memory of Enclave residents, prior to the formation of the Park elephants were not viewed as close to their fields and villages as in the present-day. Reflecting on the proximity of elephants to Serondela prior to the creation of the Park, one chief shared:

> There were no elephants that side... If they were there, there were very few, because they used to plow there. They used to plow. And that's why I'm saying that elephants, by that time, they were very far from people, very far in the bush. So they were scarce.

Similarly, a headman elated the increased proximity with elephants to the establishment of the Park:

> By that time [before the Park], I think the animal was not so much like today. After the Government introduce the Park is when the elephant and other animals come to be more and more and more. But in those days, there were no... There were few animals there.

Enclave residents cited freedom of movement as a measurement of elephant and other wildlife’s proximity to human settlements. Prior to the Park, this was demonstrated by the ability to walk from the present-day Enclave along the Chobe River to Serondela, Kasane, and beyond. One Enclave resident shared, “No, there were not that much elephant because we used to walk from here [Parakarungu] to Serondela. Just working there.” Similarly, another Enclave resident

shared, “we used to walk on foot from here [Kavimba] to Mabele up to Kasane.” One respondent remembered walking all the way to the crossing at Kazungula:

> By that time, I was young. But when I was still schooling there, my father was working in Zimbabwe. By then, it was called Southern Rhodesia. After holidays, we were footing from Kavimba down up to Kazungula, crossing to Zambia. Then we take a train to Zimbabwe. There were no elephants…

Enclave residents related their experience witnessing changing elephant populations and distribution during their lifetimes. This farmer shares how age relates to residents’ different lived experiences with elephants:

> When I was young, it was very hard to see an elephant. We used to walk… to school in Kavimba. But now we can't because you'll find elephants everywhere... [In the past] When you find a footstep of an elephant, you have seen an elephant. You will call all your neighbors to come and see just the footprint. You'll be happy that you have seen an elephant. But now, my daughter who is two years old, she has seen elephants more than her years. Yes. Because now they are everywhere.

For older residents, sightings of elephant footprints were uncommon for much of their lives, but this has changed in recent years. Elder Enclave residents contrasted past experiences when footprints were rare to the increased presence of elephants in the present day. One elder chief shared his experience in as a young man in the 1950s:

> Mind, I remember in the early '50s, in 1955, I was staying this side [Kavimba]… If you could see a spoor [track] of an elephant, oh, it was wonderful. Yeah. You would take maybe 30 minutes gazing, looking. What kind of this? Something like as if a dish was put there. Yes, meaning that it was not usual to see an elephant, in short… But nowadays, a lot of interactions with elephants. You can't move at night…

Another chief spoke to his experience the following decade, “During 1960s, we're not having such elephants. They used to come, but you can see a track of an elephant, once, maybe after two months… Not so many like right now.” Interviewees spoke to the scarcity of elephant footprints near Enclave settlements through the 1970s:

> Myself, where I started to see footprints of an elephant, it was '70s when I was grown. By that time, we were going to Kasane. Our lift was a tractor for Forestry Department. Then

> the driver stopped and they said, "Come and see the footprints." By that time, we didn't know the elephant facially. Only footprints.

Collectively, Enclave residents asserted that from their lived experiences in 1950s through the 1970s, elephants were not as prevalent around their fields and villages as they are today. Here, this chief speaks to the change that occurred in the 1980s:

> 1970s to 1980s, up to around 1986 there, maybe. That's when things were starting to change. We used to hunt these animals. Our parents used to hunt them. But for them to go there, they have to travel a long distance from the village, riding on donkeys, following them in the forest. That's where they were found. We used to plow here... we harvested a lot of crops during that time… But this time around you cannot see that, because now the animals have come closer to the people… Elephants, buffaloes, lions, whatever, they were very far from us.

Restriction of Community Hunting

In addition to the formation of Chobe National Park, the increase in elephant proximity to fields and villages was understood by some interviewees to be coincident with Botswana's first elephant hunting moratorium which banned both local and international trophy hunting during the 1980s and 1990s. One farmer shared:

> You see these things, they started when this hunting quota was stopped, and the [Chobe Enclave Conservation] Trust started in 1994, it's where changes came 1987, 88, 89, [before] we were the people who were taking maize from all this area. It was a breadbasket of Botswana. The whole Botswana were depending on this area…

Under previous arrangements, interview participants asserted that when people could exercise their agency, they were proactive in keeping elephants out of their fields and villages. Another Enclave resident shared, "This changed after this hunting was closed. Before, as we have said, the elephant knows that if I get into the field, I'm going to be killed…"

One headman spoke to how community hunting rights operated under previous institutional arrangements:

> So the moment the hunting, when it stopped because it stems from the Government. It stems from the leaders. The first leader was ruling this country was allowing people to...

> People were allowed to kill some animals. They got the Government to buy, then they kill at a limited number. You see, then at the end of the day, they changed their leader, the President. Then just from that time, it started some conflict between people and the elephants… Because of those people, [we] don't have rights.

Here, this respondent asserted that the cessation of community hunting produced conflict between people and elephants.

One chief shared the how he understood the 1980s cessation of hunting related to the growth in tourism: "The first hunting was stopped because the elephant, now they just opened the tourism. Yeah. They said no hunting because we want tourism."

Following displacement from Chobe National Park and the illegalization of community hunting, Enclave residents' agency, their ability to act in ways they see fit to keep elephant away from their fields and villages, has been severely marginalized. This is reflected in how Enclave residents understand HEC and how it should be reduced. For example, one farmer shared:

> During those years, '60s, '70s, even '80s, when there was this community hunting, elephants mostly were not a problem because they were hunted by community members. … they know that they're not going to be hunted. I'll say, partially, the Enclave community has accepted to stay with elephants. Because now, to we farmers, they're a problem because we can't harvest…they'll come and destruct our fields. That's where the conflict starts. I want to protect my field. Government wants to protect the elephants. NGOs want to protect the elephants. But not regarding the overpopulation of elephants. Because if they control their birth and if they control their number, then there won't be this conflict. That is the cry of the community.

Another farmer shared how in the past, people actively managed elephants through their hunting practices:

> Now, the Government should learn from us on how our ancestors conserved these animals. They used to kill male animals, old animals and they've got seasons, they had season of hunting. Now, there's no hunting at all.

Importantly, this respondent asserts that those who manage elephants today should learn from Enclave residents' Traditional Knowledge.

Marginalization of Traditional Knowledge

Given the recursive relationship between human-elephant impacts and the institutional arrangements that produce them, Enclave residents have shared increasing conflict with elephants as a result of policy decisions, including the formation of Chobe National Park and the suspension of community hunting, that have disempowered Enclave residents and marginalized their ability to act in reducing the frequency and magnitude of human-elephant impacts. An elder chief reflected on how historically people had the knowledge and agency to keep elephants away from their fields and villages:

> In our… tradition, we have got these traditional doctors. They used to know what kind of trees could scare those animals. If it is put there, whether it is put there burning or is just put in something there, there's no animal that could come. But as you can see, that's why now we have this kind of ICH, Intangible Cultural Heritage, which is just after this culture, which is getting extinct. Yeah. Because there are some cultures that you cannot handle. Knowledge you cannot see, either and you can neither handle it. Now, if I know something, that knowledge, that at the time I die, I die with my knowledge. And now without having passed it to you, then you'll just be left. So our grandfathers, they knew how to scare this animal through using these natural resources, trees and so different kinds… So I don't know whether we are unfortunate because people have gone with their knowledge, how they used to do it. Because even these rifles, they were not there. They used to have some trees, which they could mix it with poison. That's why we had some poison arrows and so forth. But nowadays there's no one who can tell you or show you how to do that.

Importantly, this chief reflects on the history of his people and how in an era before rifles, ethnobotanical practices (e.g. "poison arrows") were employed to deter elephants. This elder reflects on the disruption of inter-generational knowledge transmission, and interestingly employs the framing of Intangible Cultural Heritage, a UNESCO designation. This elder further shared that Traditional Knowledge has been subverted since the colonial era:

> No, they're not encouraged. That's one point because until, you know in English there's this word, ‘witch doctor’. Now when this, I don't know what is, whether is civilization or what, when it came, then these African traditional doctors were looked at now as being witches. So with that, now people started shunning them… They had to do away with them. So doing away with them and those who had that knowledge also they had to abandon those kind, because they couldn't live among people shunning them. Yeah. That's the problem… then they live apart from elephants, like lions, and they used some trap to have there some traps, which could trap some lions, all those were stopped. Because you couldn't go in conflict with what the Government wants.

For Enclave residents living today, some of the Traditional Knowledge of their peoples has been occluded.

However, some traditional practices are still employed. For example, a farmer spoke to the use of traditional plants to repel red-billed quelea, a species of colony foraging weaver bird:

> They would mix their herbs and do whatever they wanted to do. They knew that when they controlled quelea, it's like they used some herbs that they knew. They would mix them. And then they knew that, when I do this like this, and then this quelea would not come and trouble …

A farmer shared how the conservation and management policies for elephants are more restrictive:

> When they tell us, they say, it has never been like that when they used to control the animals then, but now they are roaming everywhere because it's like, people are not allowed to control them the way they did. They are saying they used to control these animals in such a way that they knew when the mating season of animals is, and they wouldn't touch the animals. They knew when they were nursing, they wouldn't touch animals because they knew they had to multiply. But when it was time for, they knew the young ones are grown up. The elder, the mothers and fathers are there. Then they would not allow them to come near where human beings are. They used the way of either shooting or scaring them. But since the Government said, ‘You don't kill animals. You don't do this. You don't do that to animals’, animals are now controlling the lives of people.

This elder farmer reflected on why Traditional Knowledge was no longer widely practiced:

> My thinking is, we adopt some things from somewhere, as people. As people know, I think getting educated and mixing with other people, interacting and doing all that, we tend to adopt different cultures and then probably forget our culture, somehow.

Speaking about medicinal plants, this farmer shared how Traditional Knowledge no longer being openly practiced:

> If you look at, I would say, most of Botswana, if they find me somewhere, maybe I would find a herb that I know. And then I dig and go and use it. They would look at me like, "What? Why is she doing this?" Yet, we tend to forget that a lot of medication that we take from hospitals… they are from the herbs, it's only that they are processed…We used to drink [traditional herbs] as tea, when we are still young. Our grandparents were giving us those, drinking as tea, not as medication for anything but as tea. Yet, they knew when we took those, they have an impact in our bodies. They helped in a way. But nowadays I cannot take those and use them. At the end of the day, I'll be told, you'll damage your kidneys. You do this and that to your body and all the like. Yet I grew up using those things. Yes. I'm not saying using, taking medication from hospitals and pharmacies is bad. It's not bad. It's good. Because it's something that has gone through some processes, some steps, some stages. So, it can be used at a reasonable dose that has been realized or whatever. Yes.

When asked if people are still practicing this Traditional Knowledge, this respondent spoke to the present-day stigma surrounding traditional practices, "I think they are. But they cannot come out and say."

While some traditional practices for deterring elephants are no longer openly employed, other methods are still in use. One headmen commented on how they understood their ancestors kept elephants out of the village prior to the acquisition of rifles:

> They were just using... let me say because there were not so much, they were using guns to shoot them to send them out. Or sometimes they were hitting the drums up to now. That is the way that they were using. Killing them and shooting them, that was the way…They were using those dogs. Dogs were barking at night. When the dog is barking, the animal would run away.

Another headman shared, "In those years, when you put the fire, the animal also will run away. And they didn't come near the fire. But these days, even if you put the fire, they came…" These respondents share that before the introduction of rifles, dogs, fire, and drums were all employed to deter elephants from fields and villages. One younger farmer shared her experience deterring elephants from her field: "when it [the elephant] came around, I started beating the drums and

using the drums for chasing them away. Then it was just like coming where we are beating the drum. Then it ended up going." These traditional methods are more easily improvised by rural people given the material scarcity and implementation costs of solar electric fencing.

Respondents have shared the importance of being able to keep elephants away from fields and villages. One chief shared, "We are not really after killing this animal, but what we want is for them to be far from [us] so that we also reap what we sow." While Traditional Knowledge for deterring elephants has been marginalized, Enclave residents asserted that these traditional practices could be revived, "So let us be able to practice this, revive this and practice it, see if it can work as it used to."

Reducing Human-Elephant Conflict

Conservation practitioners are working to reduce HEC, and current conservation interventions target the reduction of both the direct and indirect impacts of HEC. HEC reduction strategies variously work to reduce crop and property damage, the disruption of livelihoods, and the fear of attack. Below, I present how 1) New Technologies; 2) Elephant Dispersal; 3) Community-Based Organizations; 4) Compensation; and 5) Education are implemented by in the Enclave by conservation practitioners. After presenting the voices of conservation practitioners, in each subsection I present the voices of Enclave Residents in response.

New Technologies

Conservation Practitioners

Solar-electric fencing was a commonly identified technology to reduce the direct impacts of HEC on crops and property. One DWNP officer shared:

> We have some farmers there who have adopted some protections. They use electricity. They've adopted that, some use just two strings in their farms. We've got some who, for years have not experienced any damage to their property, their crops.

Importantly, Enclave residents ability to implement solar fencing is materially constrained. The above respondent continued, "one reason the conflict there is that majority of them don't have the means to protect their crops for example, against elephants." Accordingly, conservation practitioners assist Enclave residents in the implementation of these technologies. One EWB respondent spoke to the efficacy of one solar technology:

> Often the most popular mitigation that we have is the solar powered electric rope, which produces a nice high voltage, high enough to scare an elephant, but not to hurt anybody. It's adaptable, so you put it up at when they've got crops growing and then you take it down when the crops are done. If they've got veggie gardens, they'll have them up all year round. Then the idea is that it gets charged through the system through the day, so it's off through the day and then you switch it on at nighttime. We've had huge, huge success with it. When farmers have used it correctly, we haven't really had an elephant in, to be honest.

This practitioner spoke to the adaptability of a solar-electric rope, enabling farmers to exert agency and improvise applications for both field crops and vegetable gardens.

While electric fencing was frequently recommended by conservation practitioners, the scale of that fencing varied. Some conservation practitioners recommended fencing individual farms, some recommended cluster fencing groups of farms, and some recommended fencing the entire Enclave. For example, while one DWNP officer shared, "I think if the farms can be clustered and be electrified, those people can harvest, have the bumper harvest from the fields.", another DWNP officer felt that:

> There could be a physical barrier that actually separates, I'd say, human settlements with the area demarcated for conservation. In this case, probably a fence, an electrified fence. So that animals will not be crossing over to human settlements today to vandalize their properties, because that on its own will actually reduce the conflict.

Currently, the boundary between the Enclave and the Park is unfenced, another DWNP officer shared:

> The proximity of their villages to … Chobe National Park itself, it actually exacerbates the situation... Let me just say Protected Areas in Botswana, they are not fenced…So basically now there's free movement [of wildlife] in and out of the Protected Area.

Importantly, one respondent shared how social complexities within households and communities within the Enclave influence the scale of implementing fencing technologies:

> So to get people where households fundamentally don't like each other or won't work together, try and push them together to do something like a cluster farm or a cluster fence. It's not going to work… I think ultimately its human relationships that's what we're dealing with…we need to know people, we need to listen to the family dramas sometimes to build the trust that can create change.

Beyond fencing, conservation practitioners shared other mitigation technologies to reduce the direct impacts of HEC. Here, an EWB participant shared applications of solar strobe lights, alarms, and deterrent spray:

> They're very good for very specific types of farming, small fields that are just subsistence crops, so they just pop up for the dry land, the rain season, then come away, so the lights come away. We don't keep them up all the time. It's thinking about habituation rates, keying them up to the people and also for elephants. We're always trying to be sort of two steps ahead. We also have alarms and alarms are often used in combination. Some farmers will have all three mitigations, depends on how often elephants come visit them. We know very clearly, you can see very clearly if it's a field that has a lot of elephant action around it, or if it really doesn't. Then we have a spray as well, but we are always thinking up different ways that we can set this equipment up.

A DWNP officer spoke to the use of bees to deter elephants from fields, “[We] tried to share with the communities here in Chobe, we do our best to ensure that all the community members understand the potential of the methods. Like the beekeeping. The use of bees to scare elephants.

While new technologies are often introduced, they aren't always adopted by local people. Speaking to the use of chili peppers to deter elephants, one conservation practitioner shared:

> If you go around and ask people do you have chillies, you find that there's not even one single farmer who took any initiative of maybe plowing the chilli and providing it to other community members. But my feeling is that if at all we could have people who are productive who could try to maybe utilize, yeah, the knowledge. That could help, you know, reduction of issues of human-wildlife conflict.

Here, the respondent connected the reduction of HEC to the failure to adopt a new technology, (i.e., chili peppers). Conservation practitioners often felt that Enclave residents must do more to reduce HEC, as this respondent shared:

> I think what the communities need to do more is just to ensure that they prevent destruction before it occurs…some of the damages… if communities could have done more to prevent it could have not occurred. Like … overseeing their fields at night or maybe… [or] to put on scaring [deterrent] devices on their fields. I think that could be something that definitely could benefit the communities…

However, other conservation practitioners shared different points of view, for example, one respondent shared that, "success comes from buy-in and the constant consultation or the continuous consultation and check-ins that we do… [farmers] have to want it for it to be effective." Similarly, another conservation practitioner shared:

> You can have the best mitigation in the world…if you haven't come to that decision together with the farmer, as I said, the best thing in the world, if the farmer doesn't want it or believe in it, then it's not going to work. They've got to have that buy-in.

Enclave Residents

Much like those in power, Enclave residents agreed that solar fencing could reduce the direct impacts of elephants on their fields and villages. In addition to fencing, respondents from the Enclave spoke to the use of other technologies, like chilli peppers and beehive fences, but found these less favorable.

Like conservation practitioners, Enclave residents shared varying points of view on the scale of fencing. Some felt that the Enclave should be separated from Chobe National Park by fencing the Enclave perimeter, as this headman shared:

> We have our Chobe National Park. It's about 11,000 square kilometers. It's a huge, huge, huge piece of country, or piece of land. So let them [elephants and lions] stay there or to divide the animal from people, or the people from the animal. Maybe you can put something, maybe corridor, fence, whatever, so that people cannot enter that side, elephant cannot enter this side. I think that way can be better.

Here, the respondent viewed the Park as place for elephants, not for people. Accordingly, some Enclave residents expressed a sense of anger that a fence has not yet been built, as this farmer shared:

> They tried, tried, and tried but they have failed. We were thinking that if the Government will put electric fence up there, so that the animals will stay that side and people this side. But, I guess they're tired of saying one thing, every year, every time.

Some respondents from the Enclave also spoke to the importance integrating corridors into fence construction. For example, one VDC shared:

> The Government should hear our voices that we need a fence. We don't say the fence should not have corridors. No, it should have corridors where animals should cross. Not in the village. Not in the village. There should be some points where animals should cross… They are in search of water and food.

Again, this respondent shared an interest in the wellbeing of elephants and other animals but was careful to clarify that they are kept out of the village. Others spoke to the importance of cluster-fencing, as this chief shared:

> If the Government has money to assist the farmers, electric fencing is much, much helpful if they can come up with a project, which is called cluster fencing, because our fields are not far from each other. So maybe, in that way, the community could benefit something…That is my plea to them. Cluster fencing. It's much, much, much, much better.

Importantly, fencing in clusters and at the household scale doesn't necessarily change residents' freedom of movement beyond those fences. Residents also had questions about the potential implementation of fencing. One farmer asked:

> If there is going to be an electric fence, how is it going to be placed and wildlife corridors, how many are they going to be? And how are they going to separate the wildlife from people? ... And how are people also going to move?

Beyond the scale of fencing, Enclave residents shared who they felt was responsible for fencing projects. Primarily, residents felt this was the responsibility of Government. Others felt that CECT should fund cluster fencing. Some felt that NGOs, given their access to external funding, should partner with CECT:

> An electric fence, which the government is saying can't work…if this NGO was to work hand in hand with CECT, they could have done or maybe come up with a bigger project. Which was going to mitigate this problem. Because NGOs can source moneys from somewhere

One farmer who had worked with EWB suggested felt they should be involved:

> Elephant Without Borders can extend their program at least to can put that wire because, for the village, per village and leave some corridors. When it shocks, they can find the route to the river.

Importantly, a neighboring farmer who hadn't worked with EWB was skeptical of their motivations, and NGOs more broadly:

> What surprises me is this Elephant Without Border thing, it's only headed by white guys... You see a black guy next to a white guy, this black guy is a laborer who's always putting sign boards, not an officer... I believe they are organized. They are getting money from overseas country… You know how these rich guys in all these countries, when you say, "I am taking care of the people. I am taking care of the animals," they will give you money… Then the question is why can't we have a supervisor or a black person, who will be running the Elephant Without Border thing. It's always whites… When this one goes, the next one will come. I don't know. Maybe it's the way things should be done, but according to me, I believe they should teach us how to take care of our elephants.

Here this farmer commented on the social complexity of race and the power dynamics in conservation NGOs given the history of colonization in the area. The role of race was not only

limited to EWB, but also WildCRU an organization that works to reduce human-predator conflict in the Enclave. This respondent shared a desire to learn from conservation NGOs in the short term, but also move beyond a dependency upon NGOs in the future. Critically, this presentation of race obscures nuances between white foreigners and white citizens and obscures the ethnic diversity between Batswana, Basubiya, Basarwa etc. Still, this response illustrates the unequal power in the form of access to knowledge and finance held by NGOs.

Elephant Dispersal

Conservation Practitioners

Conservation practitioners also spoke to the role of elephant dispersal to neighboring KAZA partner states as a method of reducing elephant population density in the Enclave. Given that HEC was understood as resulting from the competition between people and elephants for land and water, decreasing elephant population density through dispersal was subsequently understood to be a method for reducing HEC. A DWNP officer shared:

> Because we've got a lot of elephants here and the main issue is the human-wildlife conflict, because it's like they're confined into this space. So, the movement of these animals into other areas would now reduce the incidents because the elephants they have dispersed. And the concentrated numbers that we have would have, some populations would have moved out…

Another DWNP officers concurred, sharing that if elephants have, "a wide area where they can forage, that is going to lessen the human-wildlife conflict on our side." Similarly, another DWNP officer related how elephant dispersal and the subsequent reduction of HEC connects to KAZA:

> The number of elephants were a bit high, and human-elephant conflict was high. You know, that is why the Kavango-Zambezi Transfrontier Area was formed. This was to encourage, what? To encourage movement of animals. So that they do not concentrate within one area.

Accordingly, researchers from DWNP in partnership with KAZA have identified Wildlife Dispersal Areas. One DWNP officer shared how they use data from collared elephants to monitor movements in these Dispersal Areas:

> So we have elephants movement that is between the partner states. We know where they cross, we know their paths, we know their times so that alone goes to show how we are cooperating in the conservation and management of these iconic species… One of the WDA, Wildlife Dispersal Areas, which was sponsored is occurring in the Chobe Enclave. We collared [elephants] there, which we are still monitoring. It goes into Namibia and comes back…

Commenting on facilitating elephant dispersal through landscape connectivity, this respondent continued:

> [Dispersal] that is what we desire as conservationists to facilitate connectivity between landscapes…That is why we don't have fences, between the States, to basically facilitate connectivity. Connectivity not only between Protected Areas, but connectivity between Protected Areas and areas that are not protected. That is why we want animals to be able to come out of the Chobe National Park through the Buffer Zone into communal areas and into a different country. The only problem which is unfortunate is when these animals starts to cause havoc, in destroying properties, and killing other things like livestock belonging to communities. But for the sake of connectivity in the conservation terms - connectivity of the landscapes - it's very important that animals are allowed to go into other countries.

Importantly, this response spoke to removing physical barriers to achieve large landscape conservation outcomes.

A KAZA respondent spoke to the removal of physical barriers as well as the creation of benefits for communities:

> I would like to see more and more resources going towards building stewardship. I'd like to see more benefits being channeled to targeted communities and the strengthening of land use planning processes and addressing the longstanding issue of encumbrances, particularly that physical infrastructure that could stand in the way of movement of elephants.

Speaking to how communities are consulted in the identification of corridors for dispersal, one DWNP officer shared:

> There's no direct involvement of engaging them except that some of them historically, they would know a bit about the corridors historically because they've been living with the animals. But for us as Wildlife, I can't remember a point whereby we engage each other in a formal way in determining the corridors.

The role of community knowledge in the historic movements of elephants. Importantly, conservation interventions to facilitate dispersal are intimately linked to determining where elephants have found pathways in the past. Accordingly, some DWNP officers shared the importance of "Indigenous Knowledge". For example, another DWNP respondent shared:

> The Indigenous Knowledge is also of paramount importance because, you know, these are the people who lived here a long time ago… Obviously, taking that and then researching whether is that a true corridor that's the process that is done to find out the corridors of these animals...There isn't any papers published to say this was done from Indigenous Knowledge, but most of the researchers, obviously, they do engage the local people. Because, no, these are the guys who have got a knowledge of what animals were doing before there were lots of developments. So we do consider that. Because it is very important and then what happens is that if you are to maybe check if that is true. Obviously, to do a bit of research to see if that area is actually being used by elephants as a corridor, yeah. So Indigenous Knowledge plus research to check whether it is indeed true the area is being used by elephants is important.

Importantly, the process of verifying to "check if that is true" is power-laden as is conducting research without citing local people and their knowledge. Despite these power dynamics, this response shares that "Indigenous Knowledge" has been integrated into some aspects of elephant conservation and management.

Similarly, another DWNP officer shared how place names were useful for confirming elephants' historic range:

> I think from 2013, we started to experience some elephants going as far as towards Gabarone. Way in the past there's never been… they have never been there. But history shows that, it's the route. They used to come there. Even the names of some villages, suggest that the area used to have some elephants in the past.

Enclave Residents

Some in the Enclave agreed that encouraging elephant dispersal would reduce HEC by reducing the population density. One respondent shared their view of elephants moving into neighboring countries:

> We can't say this elephant must stay here, because elephants want to move all around. It eats a lot of things and a lot of... it want to move freely. So we can't say we have our elephant, Namibia have their elephant, Zimbabwe have their elephant.

However, one farmer felt that HEC should be resolved locally before encouraging elephants to disperse into other countries:

> They are human beings as well. The same way the animals, the elephants are troubling us here. They'll do the same with them. The only thing that we have to do is to find ways together, find ways of controlling these conflicts.

In contrast, another farmer shared this perspective on dispersal in the KAZA landscape:

> You will find that, Namibia, Zambia, Angola, are now benefiting from it. And as they're benefiting from it, they are becoming more selfish. Because our elephants, our buffaloes, during dry season, they cross, they go. Some will come back, some will not come back. Then they are making funds out of our animals… Even the communities now, they are benefiting directly from them, compared to us.

Similarly, a chief expanded on the economic concerns of elephant dispersal, "because tourism really depends on this big game. If they disperse and move into another country, then we will be losing money there."

Not all Enclave residents felt this way about dispersal. Some asserted that elephants should move freely, "It's okay just because you cannot control an animal. Yes. It's looking for food. Yeah. But if it's not troubling, we are not killing them. It's just okay…" Similarly, another respondent shared, "The only idea that I have is that the very same elephant that are in Botswana, they belong to Zambia and Zimbabwe and Namibia, because they can go there and come back."

Community-Based Organizations

Conservation Practitioners

Community-Based Organizations (CBOs) like the Chobe Enclave Conservation Trust (CECT) have been adopted to reduce the indirect impacts of elephants on livelihoods. CBOs aim to create benefits for people living with elephants by deriving economic value from wildlife, including elephants, and directing that value to affected communities. These economic benefits are derived from trophy hunting and photographic tourism. Speaking to the role of trophy hunting in CBOs, one DWNP officer shared:

> So, what I see happening is that the only consolation to the community is that, although these elephants are affecting us negatively, at least we are getting something out of them…

Here, this officer shared that the economic benefits derived from trophy hunting are directed to communities as a "consolation" for the impacts on their livelihoods. This respondent shared that photographic tourism played a similar role:

> It's a form of consolation to the communities that we are getting something out of these animals in terms of... like for instance in Chobe Enclave, they have partnerships with lodges like the Ngoma Lodge whereby members of the communities are employed and there's an annual fee that is paid… They're able to get something out of the animals.

Importantly, this response suggests that the economic benefits directed to communities through CECT include not only revenue for development, but also employment.

Trophy hunting and photographic tourism were not seen as generating comparable revenue for CBOs. Here, a DWNP officer shares their view that in communal areas, trophy hunting directs more income to the CBOs like CECT than photographic tourism:

> Photographic tourism can never be comparable to trophy hunting… even in the eyes of the communities… They know, as CBOs, that the revenues that come in more is coming from hunting and very little is coming from photography.

CBOs like CECT are administered by DWNP in tandem with the Technical Advisory Committee (TAC) composed of representatives from across regional Government. Here, a DWNP officer shares how the Department administers CBOs:

> [DWNP engages] the community in conservation and incentivizing them by awarding wildlife quotas, whereby they can utilize those wildlife quotas by way of bringing in safari operators who then get in clients to come and hunt animals. And then in turn, bring money into those Trust. The money will be used for different purposes. First of all, there's employment creation. Then secondly, there would be some community development. The other thing would be the leasing out of what we call Wildlife Management Areas, whereby Community-Based Organizations are able to operate, in most cases with Joint Venture operators, they're able to operate eco-tourism activities, whereby they bring money in by way of tourists. There is a lot of employment creation in there. Basically, these are the two most important things that I would say I'm engaged with, or we, as a Department are contributing. Because ultimately, the idea is to conserve, including the iconic species such as elephants.

While some conservation practitioners felt that trophy hunting could reduce the direct impacts of HEC, others felt that the elephants that are preferred by trophy hunters are, in the words of one DWNP officer, "Not necessarily the same elephants." Additionally, trophy hunting does not occur in all areas of the Chobe Enclave. Some areas have been zoned for hunting tourism and others have been zoned for photographic tourism, as another DWNP officer shared, "Photographic and hunting, you know, they are not complimenting one another… [in the Chobe Enclave] they managed to separate it, so that they do not come into conflict." Accordingly, trophy hunting is constrained to certain areas in the Enclave.

One DWNP officer spoke to the process of determining elephant hunting quotas:

> We undertake wildlife surveys. Normally, we do that through aerial surveys… [that give] us a picture regarding the populations of our wildlife that we have. From there, we are able to determine the numbers that we can award or allocate to Community-Based Organizations. Of course, with regard to species such as elephants, we get a quota from CITES, they restrict us onto the number of elephants that can be hunted in one particular year. But the basis obviously, is on the aerial wildlife surveys that we conduct.

While researchers at DWNP have the power to set elephant hunting quotas, their agency is constrained by international conservation policies like CITES. Even if CBOs wanted to hunt more elephants, this officer shared, "we would not go beyond the CITES quota". Within the context of CITES, hunting was not seen as a method for significantly reducing the elephant population, however the quota sold were understood to create benefits for CBOs. After the quota is allocated, DWNP together with the TAC engage the CBO Board. In the Enclave, each of the five villages elects two members to serve on the Board for CECT, and village chiefs are ex-officio, non-voting members. After receiving the quota from DWNP, TAC, and the CBO subsequently present the quota to community members at a Kgotla meeting. Here, DWNP and the TAC mediate the relationship between Joint Venture Partners (JVPs) and CBOs. After an arrangement has been established with a JVP, then DWNP further implements a system of licensing. One DWNP officer explained:

> Let's say the quota has been allocated to CECT. CECT has to be in some sort of an agreement with a safari company…[The safari company] will buy the quota from CECT and then sell it abroad. So now the [safari company] will be bringing that clients here to hunt such quota, to hunt those animals. Now these clients, they come to our office to buy the permit. The money goes into the coffers of the DWNP, for the license, but there's some money that is charged to hunt the actual animal. That one goes into the [safari company] coffers. But mind you, [the safari company] has already bought the quota from CECT.

The revenue that CECT receives from the sale of the quota is subsequently utilized by communities in the Enclave through the Village Development Committees (VDC) to fund local projects. A DWNP officer explained:

> So the role of VDCs and the CBOs and the [community], the Kgosi - the chief - is to identify those projects, per village and the priorities for each village. And then at the planning time when they are still together they sit together and decide [which village] this year would get a thing.

Importantly, these projects are implemented village by village in the Enclave through their respective VDCs. Examples of community development projects funded by CECT include an abattoir for processing cattle, a milling station, a brick molding station, community general stores, and tractors which can be hired by farmers to plow their fields.

Economic benefits like CBOs create conditions where people in the Enclave can exert agency to fund community developments, but their ability to act is constrained by the availability of trophy hunting and photographic tourism revenue held by the Trust. Accordingly, following the trophy hunting moratorium from 2014-2019 and the subsequent restriction of travel due to COVID-19, the economic benefits provided through the CBO were significantly reduced. One DWNP officer shared:

> [COVID] It did impact on it because hunting this side was affected. It could have started in 2020, 2020. And it didn't because of the, those restrictions, you know, and the 2020 hunting quota was only utilized last year in 2021. Yeah. Which means somehow people, those who wanted to, who won the animals and wanted to hunt, they could not do so because of the, the, the restrictions.

Because these benefits from living with elephants are tied to international tourism, COVID-19 had a significant impact on CBO revenue and employment. Another DWNP officer shared:

> COVID 19 stopped - almost stopped everything, including tourism. Trophy hunting itself is mostly foreigner investors or, you know, those rich people who come in to buy our quotas…We are just beginning to pick up the pieces now [2022] and hopefully things will get back to, to normal once the whole thing is over.

As a result, conservation practitioners recognized a need for CBOs to "diversify" to reduce their reliance on foreign tourism. One DWNP officer shared:

> There was a need for them to diversify the economy. If tourists are not coming down here to see those animals or the hunters they don't come down to hunt them. At least they would have something to generate money from.

DWNP further trains Community Escort Guides. One officer shared:

> The Escort Guides. Those are the guys from the Community Based Organizations that are responsible for patrolling the area to make sure they attain their conservation objective. We do train them on aspect to look out for. When they're out there, they should be able to see if there's enough forage for animals. They should see to it that if there are snares, like wire snares. So some people, they practice poaching. If they find those snares, they should just remove them. If there are any cases of poaching, alleged cases they should report to us. So that's what they do. We do train the Escort Guides on behalf of the CBOs, but they're the employees of the CBOs.

However, Escort Guide employment has also been affected by the pandemic. An officer shared, "I should point out that since COVID, a lot of things have not been put back into place, so. Mostly because of lack of funds. A lot of budgets have been cut..."

This DWNP officer shared the power-laden nature of engaging communities through this process of consultation:

> First of all, we go and meet with the key people of the village, being the village leadership before going to the CBO representatives, being the Board themselves. And then we present whatever that will be. If it's a new development, we tell them about that. So, as to have their ownership of what we are coming up with. Then during the next meeting, which will now be the meeting between now us being TAC and the CBO. So we already have won, I'd say the favor of the leadership. So now they will also help us to make their own people appreciate what we are coming up with. That is how we do it.

In this way, DWNP can exert its power to "encourage" communities to conduct prescribed economic practices.

Enclave Residents

CECT is positioned as a CBO to create benefits for people in the Enclave in order to reduce the indirect impacts of elephants on livelihoods. While some Enclave residents felt positively about CECT, as one chief shared, "This Trust is the best in the country. This one. The best in the country", others felt negatively, like this farmer, "Really the community's benefiting nothing."

One chief explained the how CECT was formed to create benefits from wildlife to reduce the impacts on livelihoods:

> When we kept on complaining about this human-wildlife conflict, the Government decided to create other means that maybe people will benefit from these animals, like having the CBNRM, if I call it well. Which as a result, we end up forming the Trust, you have heard about CECT, so that people might benefit from. Then we learned that now tourism is not only for the animals, but they are also looking at the welfare of the people within that locality where animals are disturbing or destroying their crops or whatever.

However, one farmer asserted, “At first, we were the ones who controlled that money… now Government is inside completely.”

Enclave residents commented on the complex arrangements at various levels of CBO administration from Village Developments to the Board, to DWNP and the TAC. At the village level, some critiques were related to which projects individual villages have funded in the past. A chief shared:

> It has been a long time since CECT ... it almost 27 to 30 years, the existence of CECT… But what can we say, the villagers, the community have done within the village during that period? Nothing that we can show. That's why I came with this idea of saying, no, let's do something. And that we will say, "This is the money that we get from CECT. People should benefit from that."

Accordingly, this respondent asserted that CECT funds should be directed to generating revenue, further sharing, “So we have to start thinking along those lines to find a project that can generate funds.” However, farmers spoke to constraints in receiving funding from CECT:

> They have to look for those people who want to start business and those who have small business so that they can pick them up. Yeah. Because if they do that, they can create employment to us. For example, like I, I have a farm. If they do booster me, I will employ other youth so that they can find employment… Then we can feed even more than what I'm doing individually… Because what we are realizing is that all of the money it comes to the community. So the community are the one who are authorizing the money. Yes. So it's very difficult for the community to authorize money for someone who is starting a business because they will say, why?... Because if it's for the community, they cannot just do it easy because they'll say it's individual.

This farmer shared a common sentiment that they could not apply for funding from the Trust as an individual or business; rather, Enclave residents felt that the Trust could only fund a project like fencing as a "community project". However, it was not clear whether this was a constraint due to CECT policy, or a practical constraint in the process of gathering community support.

Elsewhere in the decision-making process, another farmer spoke to the relationship between TAC and the Board:

> [TAC] Those people are the worst people. Yeah. I don't know whether they've got shares in CECT. Because the people now controlling the Board. Yeah. Everybody say, "No, no, no, no. Not this way, no, do this. Do this, do this, do this," without consulting the community…No consultation to the people, the community.

Many of the critiques of CECT related to the process of Government consultation. Critically, one farmer summarized the situation, **"**I think CECT is a real factor our Government is not listening to us, because they say, 'You are benefiting from conservation.'" Speaking to his experience with DWNP consulting the community through kgotla meetings, one chief shared:

> When the Wildlife officers came here to address some of the issues, the tension between the community members and the officers there, you have to stand up as a chief to cool down your people. "Guys, no, this is not the way to solve things. Let us talk politely so that one can hear what you're saying. But if you express yourself in an angry manner, there won't listen. We are both human beings. So, let's try to respect one another." That's when you'll see that. But even you have addressed them like that, you will see that others completely, they are not happy. And even you, as the chief, you know are not happy down there, but you have to control the temper of your people. So that alone will tell you that DWNP is not servicing the people. So that is the case.

This chief desired improved communication in the consultation process:

> The most important thing is communication. Even if you are failing, and you are communicating, it's much better. And when you are failing, and you are not communicating, the people will think that you are belittling them. You don't see them as humans, you see them as somebody else there. So give them respect, you will see things will be the right thing… I think if they [DWNP] listen to the people, and do as the people are requesting, even though they cannot do it to hundred percent, then it'll be much better.

This chief expanded that this wasn't the case with other Government services, like electricity, suggesting that the context of displacement from Chobe National Park may create particular conflicts between Enclave residents and conservation practitioners:

> Right now, we knew there were no electricity. They communicated. Even if you are doing your things, you know that from this time to this time, there won't be any power, and the power will resume after this. You see? You see what I mean? So you don't have a problem with somebody doing that. But the power is from Namibia. The other power, that side, is from Zambia. But the elephants are here, they are our elephants. They are our lions and whatever. Let's find means of controlling them.

Some Enclave residents contrasted their experience with consultation and CBO administration to neighboring Namibian Conservancies. Importantly, many of these respondents had relatives in Conservancies on the other side of the river. One farmer shared:

> Salambala I think is better than CECT. I think it's better than CECT because it's community-based! This, here in Botswana, you say community-based! You just use that word, but when you go deeper, you see that, no, community doesn't have a hand…You realize that the community's not having any power of saying anything in anything.

Here, a farmer interrogates the discourse of "community-based" in a comparison of CECT and Salambala, and related that in the Enclave, "the community's not having any power".

One chief who had traveled with DWNP officials on a previous knowledge exchange with Namibian Conservancies shared:

> We learned a lot. The most important thing that we found was that the Conservancy took all the responsibility, especially concerning this elephant conflict. Unlike here where the responsibility was upon government. That said, it is the Conservancy… who does sit down and then work out some compensation because they know their communities' problems and suffering and needs and interest… And the Escort Guides that side are permanently hired, not here where they are just for the time being when the quota is around.

However, the chief continued to share that after that visit, "There's no change because our Government is not easy to bend."

Compensation

Conservation Practitioners

Compensation is a program implemented by the Government of Botswana to pay for the direct impacts of certain wildlife species on crops, livestock, and other properties to reduce the indirect impacts on livelihoods. Subsequently, people in the Enclave can receive compensation for the impacts of elephants on their homes, fields, and villages. Compensation is administered in by DWNP in partnership with other Government departments. One DWNP officer shared:

> We go to the field to do some assessment on the damage and then we, if it is crops, we work together with the Department of Crops from the Ministry of Agriculture. We bring them to do a thorough assessment, an informed assessment because as we are not, experts in, you know, quantifying the damage for crops so they do. If it's about fences, we take our people from the Department of Facility Management, they come and assess the damage on the fences. If it's about property we go to the hardwares to get the quotation for the scene, whatever it is, and then we compensate accordingly, according to the compensation rates that have been passed by Parliament.

Importantly, compensation rates are determined through national level decision-making and DWNP officers in the Chobe District ability alter compensation rates requires external approval.

When DWNP receives calls about damages from Enclave residents, they often respond from their Forward Operation Base (FOB) in the village of Kachikau. Positioned at the end of the paved road, officers travels from the FOB to respond to calls in the adjacent villages. However, the travel time from Kachikau to other areas the Enclave can amount to over an hour. Accordingly, if a call comes in from a farmer in Parakarungu about an elephant in a field, DWNP may not arrive in time to repel the elephant. Similarly, while DWNP officers are in Parakarungu, if they receive a subsequent call from Mabele, the speed of response would be slower. In this way, the ability of those stationed at the FOB in Kachikau to respond, "when calls come in for help" is constrained by the number of staff and vehicles available.

The ability of DWNP employees to convey compensation services has its challenges. Given that those working for DWNP in the Chobe District come from elsewhere in Botswana, many do not speak the regional languages in Chobe. One officer shared:

> Sometimes there's difficulties in terms of communication barrier language. Yeah, because some of them, they can't speak Setswana fluently, and they speak Sesubiya. That kind of break down normally happens when you are supposed to take notes, you feel you have taken the right way. Where probably when you went home, you didn't hear him properly.

This difference in language between conservation practitioners and Enclave residents poses challenges for the equitable distribution of compensation benefits. However, this respondent continued, “We have some DWNP officers who come from the Enclave… They speak the same language.”

In some instances, DWNP funds Enclave residents to act as Special Wildlife Scouts. One officer shared, “So they will be taking incidents and reports from concerned farmers on problem animals, they will be reporting any information about possible poaching, illegal fishing…And then we will be taking the proper steps following those reports.” Another officer expanded on the role of Wildlife Scouts, “where there are some animals that are causing havoc, that are not I'd say dangerous, like the baboons, they themselves can just go out and chase them away.” Wildlife Scouts are community members that have been authorized to respond to Problem Animal calls, and assess compensation; however, the extent of this program following the COVID 19 pandemic wasn’t clear from interviews.

Importantly, the process of compensation requires quantifying the direct impacts of elephants. Analysis of compensation data can suggest “trends on the extent of damage caused by elephants”, as one DWNP officer shared:

> We have a lot of data in terms of interactions between people and elephants, in so far as a human-wildlife conflict is concerned. Because as a Department, at any given point in time, like right now in Chobe Enclave, [and other parts of Chobe District] at given point, we have officers on the ground conducting patrols, proactive patrols, reactive patrols. They gather data of incidents of damage. So, we've got a lot of that data in here and we are even able to analyze it and get a change of damage. We are in a position to be able to say, the extent of conflict or the extent of damage... we are even able to monitor the trends on the extent of damage caused by elephants.

However, the act of quantifying the direct impacts of elephants on crops and properties has its own challenges. One conservation practitioner spoke to the challenges of compensation as a tool for monitoring trends, "I think everyone's realizing really why it's not a solution. It's not sustainable... effectively people are paid to complain about elephants, but other animals not so much." Subsequently, another conservation practitioner shared, "There's no need to report [damage from other species] because they're not going to be paid for it. End up blaming an elephant or want an animal that should get compensated for. And then the Government then doesn't have the data for those other species."

Given the challenges, DWNP officers shared their desired changes to improve compensation as a strategy. Many spoke to the need for communities to adopt practices for preventing direct wildlife impacts before they received compensation, "We would first have to see that you made all reasonable efforts to protect your livestock or your produce, then that is when we compensate. Right now, we just compensate." Another respondent spoke to the potential of devolving compensation from DWNP to CBOs like CECT:

> I think the changes that I would like to see maybe in areas where there are Trusts. I think now they need to take responsibility of addressing issues of human-wildlife conflict, even coming up to the idea of even compensating. Because right now the Government does compensation for all the destructions for human-wildlife conflict. And my feeling is that if that role could be transferred to the Community Trust [CBO] more so they could, maybe the community could do more to, to try to address issues of human-wildlife conflict. Maybe they could start maybe protecting doing more to protect their property than they are doing know. I think maybe the fact that it is the role of the Government now everybody, they're not doing that much.

Another DWNP officer agreed recognizing that transferring compensation to an organization like CECT may be "controversial". Interestingly, the respondent connected their recommendation for changes in compensation to Namibian Conservancies:

> This one is a bit controversial, but I'm just to say that the issue of compensation, not specifically to elephants, but to wildlife in general…Our neighbors here are very, very strict. They've got this thing they call Conservancies. We call them Trusts here. Conservancies are the ones now that compensate… I just want us to look at the issue of compensation. Yeah. Because we are losing a lot of money, and apart from money, people don't want to be responsible to take care of their property.

Enclave Residents

Enclave residents spoke to the process of compensation, sharing concerns about the speed of assessment as well as the amount compensated. In the following responses, the exact response time and compensation amounts may or may not be precise. However, they are illustrative of the social dynamics between Enclave residents and those administering compensation. For some, the process of compensation was straightforward, as one farmer shared, "I have fields there, then I plow, then the elephants came in, destroy my food. So I contact the Wildlife, they come, they measure what the elephants destroyed, then they compensate me… [They arrive in] two to three days." For others, language was a barrier, as this VDC shared, "My grandfather is a farmer, want to contact the Wildlife Office. Some, they come here to the kgotla, they tell the Kgosi. The Kgosi will call the Wildlife Officer." Here, elder farmers sought translators in the village to contact DWNP.

However, another farmer asserted that responses were not always prompt. Importantly, because compensation requires assessment, response times were linked to farmers ability to replant:

> They came after one month. What damage would they see? They didn't see anything. We had to replant that whole section. When you show them all the left that, but the thing has

> already recovered…. Are we supposed to leave the field like that until when they come and see? … Will the rains wait for them?

For some residents in Kachikau in the same village as the FOB, response times were a concern, one farmer shared, “Even though they're close, it takes a long time. Sometimes they take three to four days.” Respondents felt response time could be improved with more vehicles, “The only problem is they use one vehicle. So, they're not enough. So maybe if each village could have a vehicle, Wildlife, maybe that will work for us.” Many Enclave residents also felt that Government should not only compensate damage, but also do more to deter elephants away from fields. One farmer shared, “I would like to see those who are given the mandate of taking care of animals, really they should show us that they are taking care of animals.”

Residents also expressed concerns about the amount of compensation. One chief shared that Government compensated the death of a relative, “If one has been killed by an elephant, even though life cannot be compensated, but there's a certain amount that the Government give to the bereaved family.” However, respondents desired a higher compensation rate for a death in the family. One headman shared, “When an elephant would kill somebody, Government should do something soluble, not just to compensate at 70,000 Pula [~5,000 USD] for the death of a person. They should do much more than this. Yeah. At least 2 million [~15,000 USD] to the relatives of the deceased.”

A chief shared how compensation shaped the relationship between community members and DWNP:

> Reporting and delay coming to assist. The relationship is there, but it's not good. They are not giving to their utmost level of satisfying the community. In that case, you cannot have a good relationship, because if they were attending to them in full, then the relationship I think will be much better… We have a camp [FOB] there in Kachikau, but when you report, they will say they don't have a vehicle. They will say we are attending to another report. …

Accordingly, respondents in the Enclave connected compensation to conflict. For example, one f:

> That's why you find that there's always a conflict between Government, elephants and the community… Even if you are a conservationist, somewhere, somehow, you will start to hate animals. Yeah. Because they destroy your field, you get nothing… And then what will you use 200 Pula [compensation] for? That's where the community and the Government had a conflict over an elephant…

Critically, this farmer asserts that the conflict, while about elephants, is between the community and the Government. Another farmer shared their perspective that their concerns about compensation were unanswered by Government because of their ethnicity:

> We are tired of talking at them…"your bosses should talk to their Ministry that, no, we need more vehicles, more people to help the farmers." I don't know, they just say "this is the BaSubiya or what... I come from [the South] where there's no elephant. Let them destroy their crops." Like, jealous inside you see? They're not here to help people, they're here to destroy.

Given this conflict over compensation, some Enclave residents felt that CECT should administer compensation. However, others voiced concerns that if CECT administered compensation it would take away from village development. One farmer explained:

> Wildlife must compensate the farmers. Just because that money for CECT helps us in other projects inside the village. So if we do that CECT is the one that is compensating the farmers…we won't benefit more money at CECT… So Government should compensate the farmers.

Still, another farmer shared, "Both. Because CECT has to take a lead on that and then the DWNP takes over because that is Government." Under this arrangement, CECT would conduct the assessment and the Government would fund the compensation. One farmer spoke to the potential of local people administering compensation:

> If it becomes local knowledge, local people, within the Department of Wildlife, handling these human-wildlife conflicts, it will really be better for us. Though I know, they're saying that maybe people conniving to rip off the Government. No, we are not conniving… Whoever tries to rip the Government, there are laws in the country...you pay the price for committing a crime.

This farmer asserted conservation practitioners are concerned with preventing Enclave Practitioners from "conniving" to defraud compensation programs.

Education

Conservation Practitioners

Conservation practitioners asserted the need for education to reduce the indirect impacts of elephants, like fear of attack and restricted mobility by teaching Enclave residents to better understand elephant behavior. Education was also a deciding factor in hiring practices.

An EWB respondent linked understanding elephant behavior to reducing the impacts of elephants, "We are pushing more on education, to educate people about living with these elephants, how to avoid or to minimize the negativity that comes with that. I think it's all about understanding them…" Education about elephants was often framed in a discourse of coexistence as illustrated by this response from a DWNP officer, "What are we trying to do to manage them? What we are doing is to encourage first of all education to teach people how to coexist with elephants." Accordingly, another DWNP officer shared how they work with communities, "We engage each other in a kgotla meeting to say, 'How best can we help each other in terms of getting into coexistence with the elephants that are in our area?'"

However, "getting into coexistence" has its challenges. One DWNP officer shared the relationship between "coexistence" and the direct impacts of elephants, e.g. "destruction":

> There is a lot of conflict…even though they've been living with elephants for quite a long time, but they are not used to that kind of life. Yes, they do accept the coexistence, but the fact is that the destruction is too much.

The unequal power between conservation practitioners and Enclave residents has produced some framings of education as changing Enclave residents' perceptions of HEC to align with those in power. For example, one DWNP officer shared:

> You know, changes that I would like to see. There is a change of attitude then… let me say the earth, it's not growing. Human-population is growing. We can see populations being in terms of wildlife, they're growing. There's competition between, you know, as the population grows, the human population grows everyone wants to see himself as a farmer. So if we want to see ourselves owning a bit of cattle and you want to see yourself having a bit of land. So changing of attitudes to say, okay, let us know that earth is not growing. So we have to coexist with what is available. We just have to learn to say okay the elephants are there. We just have to learn how to live with them. Because we don't want future generations, having wiped out the whole population then they will blame us. No. Let us change the attitudes and then we accommodate what is on the earth. And if we can just learn how to protect our properties. We can all live peacefully. Yes.

Here the narrative of competition between people and wildlife as the result of limited land and growing populations was connected to creating a "change of attitude" to "coexist".

Education was also linked to employment. Speaking to how DWNP hires the peoples of the Enclave, one officer shared:

> We have those who are BaTswana, we have those who are BaSubiya. So they are, they are employed equally. And in fact when we do employment, there's no question in relation to that type. Yeah. What matters is education. Yeah. You have the right qualifications. Yes. And you are MoTswana [a citizen], if the post is for Botswana. Yes. You will be employed regardless of whether you are from South or you are from here. Yeah. What determines employment will be the qualifications.

Here, qualifications were understood as formal education.

Given the disparity in formal education between Enclave residents and conservation practitioners, DWNP officers spoke to the representation of Enclave peoples in the Department. One officer shared:

> I can't say it's good representation. Because our democracy dictates that opportunities are equal for everyone... Government is very strict everyone is given equal opportunity. But the same Government again has theorized about what you are raising. There could be under-representation… So there is what we've called affirmative action in Government whereby we say okay even if we know someone does not qualify, why don't we take them on board, develop them so that they can qualify enough to even progress through the ranks…. And it's not only for Wildlife, the whole Government is doing that. It's a deliberate policy by Government to ensure that in all of these so-called marginalized tribes, certain people will be picked time and again…

However, these equal opportunities for employment do not necessarily amount to equitable employment. Another DWNP officer shared:

> We have quite a number of people from the community. Whenever there's a vacant post, we do advertise. People, they apply and then they compete for the post. It's not like, okay, fine, we will be saying, we will give a priority to the Enclave community. It's just open to all Batswana [citizens of Botswana]. They also get employed. Also, at times we need people who can do some, I'd say not so serious work, cleaning the camp here. The casual laborers. So mostly those are the people that we consider first because they are close to this area.

Enclave Residents

Residents of the Enclave also shared their view on education as a method to reduce HEC. Enclave residents requested education from conservation practitioners and asserted that those practitioners should also learn from their Traditional Knowledge. Residents also spoke to the value of education in increasing opportunities for employment.

One chief shared how the understanding of coexistence advanced by conservation practitioners wasn't like past times:

> The Botswana Government actually is encouraging people to live with the animal or coexistence, if you like. Yes, it's encouraged here by our country… coexistence is that we should live with the animals, with the elephants, side by side. That is, if we saw them in our villages, we shouldn't disturb them, we should always hide, because they will finally go. Yes. But at night it's dangerous… We do differ in thinking. Some we say, we took it as the right thing, and some they took it as a wrong thing… In those old days, they were not even coming down to there, they were far, far, far in the land. You could only come across an elephant track.

Another chief contrasted economic benefits derived from wildlife with human safety, reflecting on why education about "living together" can be "difficult" to accept:

> We know that these animals generate income and that through that income, they lift the economy. While at the same time they bring a lot of destructions. And also to a certain extent, lives are being lost… if someone has had some destructions to his field… or has lost a loved one in life and it's through this elephant, even if you try to bring that kind of education to her so that he or she can accept living together it's a bit difficult.

Beyond question of "coexistence", this chief reflected on how understanding elephant behavior could increase the safety of Enclave residents. Here, the chief described a workshop held by EWB:

> And they also come with some plans, not only with the electricity, but they try to address and make some workshop, try to educate people about the behavior of animals, like elephant, especially for herd boys. And also we the farmers more, especially at night when we are moving. So how we should behave and how they behave. So that kind of education, I think it is very good.

Similarly, one VDC requested that NGOs bring more education to people in the Enclave not only about elephant behavior but also elephant corridors:

> The KAZA people, even those who are Elephant Without Borders, they really need to push harder to bring education to people, more especially on these elephant corridors. Because when you go to the field this side, you might find that all of our fields are along the corridors. This way, people are concerned about the damages from the elephants. That's the problem… Living with an elephant doesn't mean you put it in the house. You should know the behavior of that an animal. How it lives… Because if you plow your field, you fence your field nicely with electric fence, they are not going to trouble you. They are going to identify that this person doesn't mean any trouble.

When asked where this Enclave resident primarily learned about animals, this respondent shared:

> I watch it daily. That channel. I know everything, just through watching. I know can even read the behavior of the animal. Because I can live with a snake in the house. And I can never kill it … National Geographic. It's a good channel, isn't it?

Here, education (via National Geographic) changed the way this respondent understood HEC.

Enclave residents also asserted that conservation organizations should learn from them. Given the colonial marginalization of Traditional Knowledge, for some Enclave residents education was also understood as the revitalization of Traditional Knowledge. One farmer shared:

> I think the Government has to allow people to practice the traditional way of controlling animals, just as they were doing [in the past]… So, I think what should happen is the Government should allow people to try to control the animals and push them away from where they are, the way they used to do. But then monitoring, still monitoring how it is done, to avoid situations where human beings will now kind of devour everything that is

there. There should be serious monitoring to see if people are not now destroying the nature.

Traditional Knowledge was also asserted as a method for reducing HEC. This farmer continued:

> So I think if that worked for them, why can't they use it? … My thinking is, if there are people who still can remember and who know what was happening then, why can't they use that? Why can't they just come together with Government to say, no, this is what we know. And it worked for us. So let us be able to practice this, revive this and practice it, see if it can work as it used to. I think that would work. And that would not give problems to animals, problems to people, and even probably bother Government much because then the Government would know that they are together in this fight. They are working together. And if it's bearing fruits, yes.

This farmer further recommended establishing a cultural school to teach, among other things,

“the way animals are controlled”:

> Really, why can't we advise CECT to have a cultural school? I just said, a cultural school. And I asked myself, when I talk of cultural school, what is it that will be entailed in this school?.. And I said, there are many people who know the culture here. They know culture is, embraces a lot of things. It can be medicinally; it can be the way people live. It can be food stuffs. It can be how people dress and all the like. And then if we are to say yes, here in Chobe, we want to come up with their cultural school that will help people get back to how they used, their grans used to live and do things. I think that would be much, much better. There are a lot of other elderly people who are still alive, who can provide that information to say, if we do this, you want to do this? This is how you do it. You can do 1, 2, 3, and you would have done it. So even this, I think this cultural school, if it's put in place, even the way the animals are controlled, that's where it'll feature. Because they will say, no, we used to control these animals in this manner. We used to control our plants degradation in this manner. So gradually people will come in.

DISCUSSION

HEC governance is mediated by institutional arrangements. As a school of thought, Critical Institutionalism understands institutional arrangements to be animated by people with complex social attributes which produce power relations between groups that elevate the agency of some and marginalize the agency of others (Cleaver, 2012). Institutions are tangible and intangible manifestations (organizations and belief systems) of formal and informal rules (law, policy, social norms) that govern human relationships with one another and the social, material, and spiritual worlds around them (Cleaver & De Koning, 2015; Hall et al., 2014). This research applies a Critical Institutional approach to examine how institutional arrangements shape the governance of HEC in the Chobe Enclave of Botswana. While conservation practitioners are working to reduce the impacts of elephants on Enclave residents, conflict emerges over the implementation of HEC reduction strategies. The following sections discuss: 1) Human-Elephant Impacts; 2) Producing HEC; 3) HEC Reduction; and 4) the Restoration of Governance to Enclave Residents.

Human-Elephant Impacts

Both Enclave residents and conservation practitioners shared their experiences with negative impacts of human-elephant interactions, though not all impacts of elephants are negative. For example, some people use elephant dung for manure and harvest firewood from branches felled by elephants (Redmore, 2020). However, reducing negative impacts of HEC is the focus of conservation policies. Sampson and colleagues (2021) present the direct impacts of HEC as crop and property damage as well as injury and loss of life. These direct impacts are visible, material, and subsequently more easily quantified. As a result, direct impacts are the target of conservation interventions such as the Botswana Elephant Management and Action

Plan's (2021) expressed goal of "Reduction of HEC to less than 50 incidents per year by 2026 (p. 38)". Enclave residents and conservation practitioners largely agreed on the direct, tangible impacts of elephants on crops and property as well as human injury and death. Importantly, conservation practitioners in Kasane also personally experience some of the direct impacts of elephants themselves. However, there was a discrepancy between how Enclave residents and conservation practitioners felt about the causes of these direct impacts. Where Enclave farmers often spoke to the impact of elephants on their crops, conservation practitioners felt that crop damage was often attributable to other wildlife as well as farmer's inadequate protection of fields.

Indirect impacts of elephants have been called "invisible" and "immaterial", and are more difficult to quantify (Mayberry et al., 2017; Sampson et al., 2021). Indirect impacts are less tangible than direct impacts, including the fear of attack, freedom of movement, and the disruption of livelihoods. Given the difficulty of quantifying the indirect impacts of elephants, they are less legible to conservation decision-makers, and therefore more difficult targets for conservation interventions. Importantly, how people interpret the indirect impacts of elephants and create meaning is complex; there are, as Redmore writes, a "diversity of human responses to elephants (2021, p. 7)". Interview results suggest a gap between Enclave residents and conservation practitioners in their perceptions of the likelihood of elephant attacks, where residents generally felt the likelihood of human-injury was higher than practitioners. Mayberry and colleagues (2017) have written about the "disparity between the actual and perceived likelihood of attacks occurring. While they may not mirror reality, these perceptions represent the lived experiences of participants and offer glimpses into their decision-making (p. 287)." Enclave residents and conservation practitioners shared a recognition of the impacts of elephants

on livelihoods; however, that did not always equate to the same recommended reduction strategies. Further, while conservation practitioners and Enclave residents both shared personal experiences of restricted freedom of movement as an impact of living alongside elephants, respondents diverged in how this affected their ability to practice their livelihoods. While HEC studies have demonstrated how agrarian livelihoods are impacted by elephants (i.e., Gupta, 2011; Mayberry et al., 2017; Redmore, 2020), few have examined how elephants impact the lives and livelihoods of conservation practitioners (i.e., (Thekaekara et al., 2021).

Whether discussing conflict or impacts, the framing of "human-elephant" is often imposed. Importantly, other wildlife species have impacts; for example, large herbivores, like buffalo, have similar direct and indirect impacts on people in the Enclave as elephants. Smaller species like wild pigs and porcupine also have direct impacts on crops and indirect impacts on livelihoods, though these do not pose the same risk to human safety. Additionally, large carnivores, like lions, have impacts of their own on people and livestock (Cushman et al., 2018; Dunnink et al., 2020). While other wildlife species impact people in the Enclave, elephants are the focal topic of specific national and international policies, (e.g., Botswana Elephant Management and Action Plan and the KAZA Strategic Planning Framework for the Conservation and Management of Elephants).

The frequency and magnitude of the impacts of elephants experienced by Enclave residents are mediated by their ability to exert agency to reduce these impacts. While today Enclave residents' agency has been constrained by the creation of Chobe National Park, the restriction of customary hunting, and the marginalization of Traditional Knowledge, in previous eras their ancestors had the power to exercise their agency and keep elephants and other wildlife

away from their fields and villages. If conservation practitioners want to reduce the negative impacts of elephants today, they first must address the underlying historical sources of conflict.

Producing Human-Elephant Conflict

While some impacts of elephants may be inevitable, this study asserts that conflict is produced. In a synthesis of conservation policy, Gupta (2013) writes**,** "current struggles over resources in the northern wildlife areas of Botswana were not inevitable, but rather are the product of specific historical decisions regarding policies over land use (p. 46)". While human-elephant impacts have existed since time immemorial, social conflict has been produced through the past centuries of colonial extraction and subsequent conservation and development policies (ibid.).

Prior to the colonial extraction of ivory, elephants were more numerous in Botswana than they are today (Vandewalle & Alexander, 2014). Vandewalle and Alexander (2014) note that while African peoples hunted elephants prior to the arrival of Europeans, colonial era extraction of ivory in the 19th century decimated elephant populations in what is now northern Botswana. By the end of that century, the population was "probably less than a few hundred" (Cumming & Jones, 2005). Subsequently, Gupta (2013, p. 47) describes this as an "era of exploitation", prior to which, "customary law had regulated and restricted the taking of numbers of wild animals" (p. 47). Over the 20th century, the colonial and post-Independence conservation policies increased the elephant population to approximately 55,000 elephants in the 1990s, and in recent decades the population has further increased to an estimated 130,000 (Adams et al., 2017). Today, rural people in northern Botswana live in what Redmore has termed the, "Era of elephants" in which life is "shaped by the ever-present possibility of encounters between humans and elephants

(2020, p. 5)". The dramatic decrease and subsequent increase in elephant populations in Botswana across the 19th and 20th centuries to the present were accompanied by dramatic changes in who governed elephants.

However, historic conservation policies disempowered local people. Gupta (2013, p. 50) describes how British colonial institutional arrangements supplanted customary laws, "By 1934 the administration had assumed the power to issue through the chiefs any order thought desirable for the protection and preservation of game." Contestations against these policies are longstanding. Gupta (2013, p. 51) presents a letter from a Basubiya chief to the colonial administrators, contesting the creation of Chobe Game Reserve and subsequent hunting restrictions:

> In a letter to the Commanding Officer in Kasane in 1932, Chief Konkwena of Munga [near Kavimba] voiced his objection to Resident Commissioner Charles Rey's plans to create the Chobe Game Reserve (on the Chobe Crown lands) and prohibit hunting in the area… [writing] 'Morena, I your servant say that we have heard our law of guns and we are sad...We your people have been accustomed to carry guns wherever one wishes to go, we will not be able to walk with only hands...Lions this time in winter and we shall be finished, we shall be killed by lions...'

Here, the Chief cited how the creation of Chobe Game Reserve and the restriction of hunting would restrict people's freedom of movement. Here, the species of concern was lions, as elephants were practically extirpated at the time. Despite these contestations, Chobe Game Reserve was designated in 1960 and further designated as a National Park in 1967 following Botswana's Independence the previous year (Vandewalle & Alexander, 2014).

Enclave residents experiences with elephants today are intimately connected to Chobe National Park and a legacy of displacement from those lands - both their physical removal and socio-economic exclusion (Massé, 2016). Prior to the establishment of the Park, some Enclave residents recalled their ancestors living and working along the Chobe Riverfront, including

Serondela, Ihaha, Nanyanga, Kabulabula, and Simwanza. Enclave residents shared that when the Park was created, their people were displaced to settlements beyond Park boundaries, including existing villages in the Chobe Enclave. Ongoing displacement from Chobe National Park has produced a view that the Park is a place for wildlife and not a place for people. Enclave residents shared that the park not only restricts hunting and fishing, but also restricts their ability to walk, to collect firewood, to harvest grasses for building materials, and to collect traditional medicines.

Enclave residents shared that elephants had been far from their settlements in the past, and elder residents spoke to their previous freedom of movement along the riverfront. Enclave residents' view of increasing elephant proximity to fields and villages coincided with Botswana's first elephant hunting ban from 1983 to 1994 (Vandewalle & Alexander, 2014), and subsequent 1989 CITES Appendix I listing of ivory and elephant parts. Enclave residents shared personal experiences of how elephants had not been a source of conflict until elephant proximity increased following the 1980s hunting ban.

Elder Enclave residents related their experience witnessing changing elephant populations and distribution during their lifetimes, sharing how in their youth sightings of elephants were exceedingly rare – that seeing the footprint of an elephant meant they had practically seen an elephant. While older residents' experiences with elephants are relatively recent; for younger people in the Enclave, elephants have been omnipresent. These results echo Redmore's study in the Okavango Delta (2020), in which elders study participants also reported only seeing footprints in their youth, speaking to a commonality of experience across northern Botswana.

As elephant proximity increased in the late 20th century, people began to experience the direct and indirect impacts of elephants near their fields and villages for the first time in over 100

years. Enclave residents shared that in the past Traditional Knowledge holders engaged in ethnobotanical practices to deter wildlife from human settlements. However, Enclave residents also shared that during the colonial era, practitioners of Traditional Knowledge were labeled as "witch-doctors" and their traditional practices of reducing human-wildlife impacts were ostracized. Fairhead and Leach, (1996) demonstrate how colonial conservation marginalizes Traditional Knowledge and produce a "misreading" of African landscapes. As a result, for Enclave residents living today, their ability to exert agency and engage in Traditional Knowledge and practices to reduce HEC has been marginalized.

In contrast to Enclave residents, conservation practitioners often understood HEC to be the inevitable result of competition between increasing human and elephant populations for limited land and water. In the case of Chobe Enclave, HEC was further seen as inevitable given the location of settlements between elephants' wet season forage and dry season water resources. In their review of causal explanations of HEC in Sri Lanka, Köpke et al. (2021) point to the over-reliance on population-based causality as, "based mainly on the position that human beings and nature cannot live harmoniously side-by-side (p. 9)," further writing that this narrative is, "too one dimensional (p. 11)."

Importantly, the focus on population-driven competition between people and elephants as the root cause of HEC has been embedded in national and transboundary conservation policy. For example, the KAZA Strategic Planning Framework states, "The growing conflict between people and elephants (HEC) is a recurring theme throughout the KAZA landscape…This conflict was felt to reflect not only the growing human population but also the expanding elephant range in some countries (p. 3)." However, the focus on competition between people and elephants

limits how conservation practitioners seek to reduce HEC, with a recurrent narrative that humans should be prevented from encroaching into wildlife areas. Critically, this narrative justifies fortress conservation – the separation of people and nature (Brockington, 2015). While both human and elephant population growth and density contribute to human-elephant conflict, the over-emphasis on numbers as driving HEC obscures the underlying social conflicts.

Critically, the impacts of elephants experienced by residents of the Chobe Enclave today are not a return to pre-colonial arrangements, nor are they the inevitable result of growing human and elephant populations. Rather, Enclave residents assert that the increased proximity of elephants to their fields and villages as well as residents' constrained agency in to reduce those impacts are the result of historical decisions which have displaced them from Chobe National Park, restricted their customary hunting rights, and marginalized their knowledge.

The ability of both Enclave residents and conservation practitioners to exert agency and take action in elephant management decisions is constrained by a broader conservation geopolitics in which power is wielded in the Global North to dictate conservation outcomes in the Global South (Hodgetts et al., 2019). In discussions of elephant conservation, the voices of proponents and opponents from the Global North often drown out the voices of people living alongside elephants, prompting Cassidy and Salerno (2020) to call for a more inclusive elephant conservation, and this critique has been longstanding.

During the trophy-hunting moratorium, Blackie and Sowa (2019, p. 4) asserted that Botswana was, "in a conflicting position in which meeting the dictates of global community put it against the belief and wishes of its local populace." After the moratorium was lifted, Mbaiwa and Hambira (2021) asked, "Can the subaltern speak?," defining subaltern as, "social groups excluded and displaced from the socio-economic institutions of society to deny their political

voices (p. 110)". The authors conclude that, "if wildlife conservation is to be achieved in Botswana, the subaltern should speak… and be respected in the decision-making process about wildlife utilisation (ibid., p.122)." Paradoxically, the same infatuation with elephants which prompts the market demand for tourism from the Global North also positions elephants as an inverted commons, "a special commons that belongs to the entire globe, but for which only Africans pay the real price (Büscher, 2012, p. 31)."

Some of these external influences have been internalized. Following Independence, Gupta (2013) has outlined how the Botswana's conservation policy has been influenced by the "discursive power of contemporary Western-derived theories of resource management (p.56)," including Garrett Hardin's since discredited Tragedy of the Commons. Embedded in national policy, these Western discourses are not only imposed from the outside, but also perpetuated from within the nation.

Human-Elephant Conflict Reduction

When conservation practitioners understand HEC as the intrinsic conflict between humans and elephants, HEC reduction is focused on technical solutions (e.g. fences and chilli peppers) rather than the underlying institutional arrangements that produce conflict. Redpath and colleagues write:

> Technical solutions such as tripwires or community-based guarding or chilli deterrents to minimize damage from elephants may be successful. However, because conflicts are fundamentally between people, technical solutions are unlikely to focus on the underlying problem unless both parties support their use (2015, p. 223).

Accordingly, dominant conservation interventions to reduce HEC have been promoting the adoption of novel technologies for deterring elephants, facilitating elephant dispersal, Community-Based Organizations (CBOs), compensation, and education. While these methods of

reducing the direct and indirect impacts of elephants have value, they do not fully address the underlying conflict between people.

New Technologies

HEC reduction technologies include solar-electric fences, strobe lights, alarms, deterrent sprays, chilli peppers, bees, etc. These technologies have varying costs as well as efficacies. Enclave residents recognize the value of solar-electric fencing to exclude elephants, but their ability to implement that technology on their own is constrained by the material, financial, and technical capacities to locate, purchase, implement, and maintain solar technologies (Fernando, 2020; Kamdar et al., 2022). Because of these constraints, Enclave residents' ability to take creative action to improvise solar technologies is less than their ability to improvise solutions from local materials. As Bersaglio and Cleaver (2018) write about the nature of agency, you can, "make a lampshade out of an umbrella stand but the same umbrella stand cannot be made into a space shuttle (p. 476)." Because Enclave residents' abilities to implement these new HEC reduction technologies is constrained, they partner with conservation practitioners.

However, conflicts arise in the implementation of these technologies. Some conservation practitioners shared that one of the reasons that HEC occurred was because Enclave residents had failed to adequately adopt new technologies. While conservation practitioners spoke to the value of numerous technologies to reduce the direct impacts of elephants on crops and other properties, Enclave residents asserted that electric fences specifically could increase their freedom of movement and allow people to walk at night. However, there were conflicting views between Enclave residents and conservation practitioners over both the scale of fencing and who should pay for it. The scale of fencing ranged from individual farms, to clustered groups of

farms, to villages, to the Enclave perimeter. Critically, Osipova et al. (2018) write that fencing can reduce HEC locally but shift problems elsewhere.

Both Enclave residents and Conservation practitioners spoke to the potential of solar-electric technology to reduce HEC. Importantly, previous attempts at solar-electric fencing have had mixed results. Some cluster fencing projects in the Enclave has been unsuccessful, while other household scale projects have succeeded. Likely, the efficacy of fencing relies not only on its initial implementation, but also the ability of Enclave residents to maintain these technologies. Farmers also felt that they could not apply for funding from CECT as a household to fence their fields, sharing that CECT money was for community projects. It wasn't clear whether this was CECT policy or a practical constraint in the decision-making process. Some Enclave residents felt this was the responsibility of government, given their displacement from the Chobe National Park.

Elephant Dispersal

Facilitating elephant dispersal to neighboring KAZA partner states is another proposed method for reducing HEC. Given that many conservation practitioners understood HEC to result from the competition between people and elephants for land and water, decreasing elephant population density through dispersal was seen as a method of reducing this competition. Conservation interventions to facilitate elephant dispersal could potentially reduce the population density of elephants in northern Botswana. However, it is unclear if a lower population density will reduce the impacts of elephants experienced by Enclave farmers, given that, "only a small proportion of elephants are involved but property losses can be costly and can severely impact rural livelihoods (Republic of Botswana, 2021, p. 15)".

For conservation practitioners, facilitating elephant dispersal includes the removal of physical barriers to achieve landscape connectivity between protected areas through community areas like the Chobe Enclave. This included the removal of fences between KAZA partner states. Here, conservation practitioners desire for connectivity and facilitating elephant dispersal may conflict with Enclave residents desire for fencing to reduce HEC. Enclave residents further recognized that people in neighboring countries would also experience HEC, suggesting that HEC should be resolved locally before encouraging elephants to disperse into other countries. In their review of HEC reduction strategies, Shaffer et al. state that strategies, including moving elephants, "transfer the problems of human-elephant conflict from one place to another (2021, p. 8)." Strategies to derive economic benefits through the commodification of elephants may also create conflicts with conservation objectives to facilitate elephant dispersal (Nattrass, 2021), as some Enclave residents felt that elephants should not disperse, because then they would be "losing money".

Community-Based Organizations

In Botswana, CBOs operationalize CBNRM to create benefits for people living with wildlife by deriving economic value through trophy hunting and photographic tourism and directing that value to affected communities (Stone, 2015; Stone & Stone, 2020). In the Enclave, the CBO is the Chobe Enclave Conservation Trust (CECT) which was founded in 1994. It derives most of its revenue through the sale of elephant hunting quotas which are set by DWNP and regulated by CITES. CECT dollars are utilized by Village Development Committees (VDCs) to fund community projects local development, and Joint Venture Partnerships with tourism operators create employment opportunities. CECT can also hire CECT is administered by a

Board comprised of Enclave Residents and overseen by DWNP as part of a Technical Advisory Committee (TAC) composed of representatives from across regional Government. CECT has the potential to fund HEC reduction strategies, though their ability to fund projects has been constrained by the recent 2014 to 2019 hunting moratorium and subsequent COVID-19 travel restrictions which drastically reduced trophy hunting tourism revenue (Joseph E. Mbaiwa, 2018). Concisely, the system of creating economic benefits from elephants through CBOs is complicated (i.e., Mulale, 2005).

CBOs are deeply power-laden, complex arrangements with interaction within and between local, national, and international scales of decision-making. While CECT enables Enclave residents through access to funding for community developments, that revenue is constrained by the supply of international tourism as well as the determination of hunting quotas, which are set by DWNP and further constrained by CITES. The power-laden process of government consultation in CBO administration was a source of conflict for Enclave residents who often expressed anger when discussing DWNP and CECT. While conservation practitioners have the power to shape the actions of both people and elephants in the Enclave, that power is not absolute, and their agency is constrained by national and international policies as well as access to funding. Despite the constraints that conservation practitioners face, the process of CBO administration produces conflict. Stone, (2015) has written about the complexities of community empowerment through Community-Based Tourism:

> members of the CECT board, VDCs and people working in the tourism establishment felt economically, politically, psychologically and socially empowered. Yet, farmers felt disempowered as they feel [they are] not benefitting sufficiently from tourism. Therefore, [Community-Based Tourism] varyingly empowers communities (p. 97).

Importantly, some Enclave residents felt that because of CBOs, their voices were no longer heard by conservation practitioners simultaneously enabling and constraining their agency.

Compensation

Compensation is a program implemented by the Government of Botswana to pay for impacts of certain wildlife species on crops, livestock, and other properties (Republic of Botswana, 2021). Compensation has also been expanded to cover human injury and fatality. The process of compensation requires assessment by government officials from DWNP as well as other Departments. Compensation rates are determined through national level decision-making. DWNP officers primarily respond to Enclave residents' calls for compensation passement from a base in Kachikau, though their ability to respond is constrained by the number staff and vehicles. Enclave residents spoke to the process of compensation, sharing concerns about the speed of assessment as well as the amount compensated. Many Enclave residents felt that increased staffing and vehicles of DWNP's satellite base in Kachikau could increase response time.

Quantifying the direct impacts of elephants on crops and properties has its own challenges. The Botswana Elephant Management and Action Plan states, "Almost half of human-wildlife conflicts are attributable to elephants (Republic of Botswana, 2021, 16)". However, one practitioner noted that, "people are paid to complain about elephants, but other animals not so much". The BEMP further states that:

> Cases of reported conflicts between humans and wildlife increased significantly after 2014. This may be a reflection of a reduced tolerance for wildlife following the hunting moratorium, or a response to the increased rate of compensation for damages for farmer's infrastructure due to wildlife (BEMP p.16).

At the KAZA level, "The link between the level of compensation offered and the amount of conflict reported," was also discussed (Nyambe, 2019, p. 3).

Compensation also manifested conflict between Enclave residents and conservation practitioners. Enclave residents felt that compensation rates where not high enough to recover the costs of crop and property damage. Some conservation practitioners felt that Enclave residents were receiving compensation for HEC without taking the appropriate measures to prevent conflict, like implementing new technologies. Accordingly, some practitioners suggested that CECT should administer compensation. Enclave residents, however, expressed concerns that if CECT administered compensation, that would take away from revenue for other community development projects. While Enclave residents generally felt that CECT could assess compensation, they clarified that the Government should still fund it. However, Shaffer et al write, "economic compensation for the damage incurred does not address the underlying root causes of the conflict, and thus do not appear to be a viable or sustainable solution (2019, p. 6)". Accordingly, devolution of compensation authority alone would not meaningfully enable Enclave residents.

Education

Both Enclave residents and conservation practitioners viewed education as a method to reduce HEC. Specifically, spreading knowledge about elephant behavior was seen as a method of increasing safety and reducing people's fear of attack to achieve coexistence. Many conservation practitioners believed that education could empower Enclave residents, given that practitioners themselves shared how their own education backgrounds shaped their understanding of elephant behavior and how to live alongside elephants. Enclave residents spoke to the importance of education, requesting to learn more from conservation practitioners about elephant behavior and corridors. However, education is also power-laden, and conservation practitioners often

described education as changing Enclave residents' understandings of HEC to align with their own. Specifically, this included the understanding that HEC is the inevitable result of increasing human and elephant populations. Importantly, this assumes that conservation practitioners, many of whom understood HEC to be the inevitable competition between people and elephants, are correct.

Relatedly, conservation practitioners and Enclave residents held different views of coexistence. Consequently, Enclave residents asserted that conservation practitioners should also learn from the knowledge of their ancestors. Definitions of "Indigenous" in the African context are complicated, (Oxfam, 2018). Given this context, I have used "traditional" to describe the knowledge and practices of Enclave residents because Enclave residents used the word "traditional". Importantly, DWNP officers' discussion of "Indigenous Knowledge" suggests that this framing is legible to conservation practitioners. Framings of "Ecological Knowledge" whether "Indigenous", "Traditional", or "Local" attempt to mirror Western separations of material, social, and spiritual knowledges (i.e., Buchholtz et al., 2020; Cassidy et al., 2014; Moore, 2009; Sitati & Ipara, 2012). These knowledges are inclusive not only of ecology, but also customary laws and systems of governance, mediated by complex belief systems. Importantly, different cultures have different histories in the Chobe region (Gumbo et al., 2021; D. M. Shamukuni, 1972). Thekaekara and colleagues link culture and human-elephant coexistence and are careful to note:

> Broad overly simplistic assumptions about tolerance by reducing it merely to ideas of ethnicity or indigeneity will be problematic since it is unable to capture changes in attitudes over time and difference in individuals' behaviors toward elephants. (2021, p. 15).

Restoration of Human-Elephant Conflict Governance

Beyond the impacts of elephants, there is conflict between people, including the process of reducing those impacts associated with HEC (Redpath et al., 2015). To resolve this conflict requires decolonizing conservation – the restoration of land and governance to colonized peoples (Tuck & Yang, 2012). Importantly, HEC has not been preserved from the pre-colonial era; rather, conflict has been produced through novel institutional arrangements (Gupta, 2013; Massé, 2016). Present-day HEC in the Chobe Enclave is the result of previous historical decisions coinciding with the colonial decimation of elephants and subjugation of traditional systems of governance that managed and reduced the negative impacts of elephants in the past. Today, Enclave residents and conservation practitioners hold different understandings of the causes of HEC. While conservation practitioners are working to reduce the impacts of elephants on Enclave residents, conflict arises in the implementation of HEC reduction strategies.

Conflicts between Enclave residents and conservation practitioners emanate from ongoing power-relations which have displaced residents from Chobe National Park, restricted their customary hunting rights, and marginalized their Traditional Knowledge. Here, there is an opportunity to reduce HEC, by moving from institutional arrangements which are at best *community-based* to those which are explicitly *community-governed*. These opportunities include: 1) Increasing Representation; 2) Changing Consultation, and 3.) Revitalizing Traditional Knowledge. While these measures alone are not inherently decolonial (Tuck & Yang, 2012), they are a step on the path to decolonizing conservation in the Chobe Enclave (Mabele et al., 2021).

Increasing Representation

Increasing Enclave residents' representation in employment in DWNP and conservation NGOs is an initial step to restoring HEC governance. Currently, most conservation practitioners

working in the Chobe District originate from either elsewhere in the country, or internationally. This poses language barriers with older Enclave residents, many of whom do not speak the national languages of English or Setswana. While conservation practitioners have created employment opportunities for Enclave residents, these were often entry-level positions, and not positions with the power to change HEC policies. Recognizing the limitations of Government to balance equity and equality in hiring practices, there is an opportunity for NGOs to fill this gap in Enclave resident representation. However, this may require changing understandings of who is qualified to make decisions about elephants and HEC reduction.

In the context of ongoing displacement, conservation practitioners should move beyond entry-level employment of people from the Enclave and be explicit about reconciling disparities in language, ethnicity, and education. Cassidy and Salerno (2020, p. 2) call for, "inclusive discussion of elephant conservation policy by scientists in the academic community, to acknowledge state and local agency and implications of management." To achieve this inclusive discussion, conservation practitioners must work to ensure that they explicitly hire peoples who have been displaced by conservation policies into decision-making positions.

Changing Consultation

The process of consultation by conservation practitioners has also been an ongoing source of conflict for Enclave residents (Blackie, 2019). Despite a recurrent narrative of "community-based", Enclave residents did not feel heard in the process of consultation. Accordingly, Enclave residents spoke to the potential of working together to reduce HEC. Cross-scale collaboration could integrate governance between community-based and transboundary conservation (Dubois et al., 2020; Wyborn & Bixler, 2013); however, those who engage in collaboration must be explicit about social justice. To meaningfully respond to conflict, requires

changing the process. While conservation practitioners currently engage in a process of consultation, that process was a source of conflict for Enclave residents. Here, there is opportunity to transition from consultation to a system of Free, Prior, and Informed Consent (FPIC) (UN FAO, 2016). FPIC requires that communities be:

> informed about projects that may affect their land, resource and other rights in a timely manner, free of coercion and manipulation, and have the opportunity to approve or reject a project prior to the commencement of all activities. In the African context, recognizing the unique histories of colonialism and post-colonialism across the continent, FPIC is increasingly interpreted as a *standard* for affected local communities who do not fit the international law definitions of rights holding indigenous entities (Oxfam, 2018, p. 9).

Critically, "there is a significance difference between consultation (*the right to be heard*) and consent (*the right to say no*) (Oxfam, 2018, p. 11)." In a comparative analysis of CBNRM in Ghana and Zambia, Adeyanju and colleagues write that FPIC could, "enhance community participation through inclusive decision-making that does not cause negative impacts on more vulnerable members and discourages elite capture of benefits (2021, p. 286)." However*, Mabele and colleagues (2021, p. 1)* describe FPIC as a "step in the right direction", but warn that, "consent can be coerced" concluding, "FPIC is not a decolonial, straightforward tool for guaranteeing and strengthening local democratic participation when designing and implementing conservation projects."

Revitalizing Traditional Knowledge

Despite the colonial marginalization of Traditional Knowledge, certain practices have persisted into the present. For example, describing the baSubiya people across the river in Namibia, Mbukusu (2019) describes these people's knowledge of flood management along the Chobe River, "They show a high degree of preparedness and have few recorded fatalities…[people] know when a flood is coming, to what extent it will disrupt their lives (and

bring them peace), and how they deal with it and not fear it (p. 246).” In contrast to the Chobe River, however, elephants have not been omnipresent through recent history. The concurrent marginalization of knowledge and decimation of elephants during the colonial era necessitates the revitalization of Traditional Knowledge about elephants.

While today Enclave residents’ agency has been marginalized, in previous eras their ancestors had the ability to reduce human-elephants impacts on their own. Here, there is an opportunity to move beyond understandings of HEC as inevitable. Through knowledge revitalization, Enclave residents could engage in traditional practices to reduce the impacts of elephants. Here, there is a potential for establishing one or more cultural schools in the Chobe Enclave to revitalize Traditional Knowledge. Liebenberg et al. (2021) note, “There is a Eurocentric perception that indigenous knowledge is static and exists out of time or experience (p. 7).” Critically, Traditional Knowledge systems are not static, but ever evolving, and can incorporate new technologies. Accordingly, knowledge revitalization and implementation of solar technologies to mitigate HEC could occur hand-in-hand. For example, Meighan, (2022) describes “TEK-nology” as the integration of Traditional Ecological Knowledge (TEK) and technology.

CONCLUSION

Summary

Governing human-elephant conflict is the process of decision-making about elephant conservation and management which is mediated by institutional arrangements at local, national, and international levels. Critical Institutionalism understands institutional arrangements to be animated by people with complex social attributes which produce power relations between groups that elevate the agency of some and marginalize the agency of others (Cleaver, 2012). This research investigated how institutional arrangements shape HEC governance in the Chobe Enclave. I conducted interviews with conservation practitioners and Enclave Residents.

This study has found that Enclave residents not only experience the direct and indirect impacts of HEC, but they also experience conflict with conservation practitioners in the implementation of strategies to reduce those impacts. This conflict between people emanates from the colonial era when the extraction of ivory decimated elephant populations, and subsequent conservation policies to remedy that decimation displaced local people from Chobe National Park, restricted their customary hunting rights, and marginalized their Traditional Knowledge. As a result, Enclave resident's ability to exert agency and improvise solutions to reduce the impacts of elephants has been constrained. Further, Enclave residents feel that conservation practitioners have the power to reduce these negative impacts. However, social complexities between these residents and practitioners cause some in the Enclave to feel that they are being intentionally ignored by those in power.

Here, conservation practitioners have an opportunity to reduce HEC by restoring governance to people in the Chobe Enclave by increasing their representation in decision-making roles, changing the process of consultation, and revitalizing Traditional Knowledge. Ultimately,

decolonizing conservation – to make right the colonial legacy of fortress conservation – requires the restoration of both land *and* governance, and future research is necessary to identify opportunities for the restoration of both customary hunting rights and land tenure to those displaced from Chobe National Park.

Recommendations

Through the application of a critical institutional approach this research has produced recommendations to reduce HEC by resolving conflict between Enclave residents and conservation practitioners. Likely, practitioners will not have the capacity to adopt many of these recommendations in the short-term. This research recommends increasing representation, changing consultation, and revitalizing Traditional Knowledge. Here, I present recommendations for the 1.) Chobe Enclave; 2.) Chobe District; 3.) Botswana; and 4.) KAZA.

Chobe Enclave

- Devolve patrol and compensation assessment duties to CECT's Community Escort Guides and extend employment to be year-round
- Develop culturally specific coexistence programs at local primary and secondary schools

Chobe District

- Increase employment of Enclave residents in decision-making roles in DWNP and conservation NGOs
- Convene Traditional Knowledge holders to inform coexistence programs

Botswana

- Devolve compensation assessment authority to CBOs

- Assess opportunities to adopt FPIC to reduce conflict between DWNP and Enclave residents
- Integrate Traditional Knowledge into future iterations of the Elephant Management and Action Plan

KAZA

- Facilitate knowledge exchange about Traditional Knowledge between CECT and neighboring Namibian Conservancies
- Further facilitate exchange about HWC compensation

Limitations

Methodologically, this qualitative study seeks in-depth understanding from a small sample size. Though quantitative methods could broaden the scope, the depth of knowledge produced from interviews would be lost. Through the framework of Critical Institutionalism, I have applied a social justice lens throughout my data collection and analysis (Cleaver & De Koning, 2015). Ultimately, making power, agency, and social complexity both legible and palatable to decision-makers is an enduring limitation of a Critical Institutional approach (Hall et al., 2014). While I have presented the impacts of elephants as discussed by Enclave residents and conservation practitioners, I did not utilize quantitative HEC data.

Fundamentally, this work is limited by the absence of enduring relationships between myself as a researcher, people in the Chobe Enclave, and the conservation practitioners that work to support them. Given the limitations of funding coupled with the logistics of a Master's program and a global pandemic, I was unable to conduct long-term participatory research. Notably, this work was a snapshot in a time of potentially heightened conflict between Enclave

residents and conservation practitioners not only because of the 2014-2019 hunting moratorium, but also the subsequent COVID-19 pandemic. This was evidenced by a court case filed by a group of farmers from the Enclave against CECT which was dismissed by a court in Maun shortly before this data collection. Given this heightened sensitivity, I was unable to speak with members of CECT at the time of data collection.

While I have drawn upon the work of others in my discussion of displacement, this research did not deeply interrogate historical accounts of people, elephants, and Chobe National Park. Similarly, I did not deeply study the Traditional Knowledge of people in the Chobe Enclave. Further, while I discuss decolonization, this research was limited to an examination of governance, but only cursorily discussed the restoration of land. In all of these things, further research is necessary. Ultimately, my positionality as an outsider to both Enclave residents and conservation practitioners, limits not only my perspective but also the potential impact of this work to achieve its recommendations.

Future Research

This research has scratched the surface on the implications of displacement from Chobe National Park on present-day HEC governance. Future research is needed to better understand historic land tenure in present-day Chobe National Park, particularly regarding recently proposed tourism developments. Because decolonization requires the restoration of both governance *and* land, research should assess opportunities for restoring land tenure to displaced peoples. One research direction could consider the transition of Chobe National Park (partially or entirely) into an Indigenous and Community Conserved Area (Artelle et al., 2019). Additionally, examining

the relationship between the Land Board and DWNP regarding conflicts between plot allocation and wildlife dispersal corridors is also needed.

Given the marginalization of Traditional Knowledge, future research should examine local ethnobotanical deterrents for elephants and other wildlife. Additional research is necessary to better understand the interplay between customary law and Traditional Ecological Knowledge which is particularly relevant to present-day land use planning. Future research should also examine the relationship between how current fisheries policies have impacted customary fishing, and the subsequent turn toward agrarian livelihoods which may or may not be more prone to HWC.

Contributions

This research has been a novel application of Critical Institutionalism to the study of human-wildlife conflict (Bersaglio & Cleaver, 2018; Cleaver, 2012; Whaley, 2018). By bridging institutional literature and human-elephant conflict this work addresses a call for "vertical integration" of governance (Hoare, 2015). This research also addresses Cassidy and Salerno's call for more inclusive elephant conservation (Cassidy & Salerno, 2020), and further contributes to the integration of HEC governance between local, national, and international scales (Guerrero et al., 2015; Wyborn & Bixler, 2013) to bridge the gap in implementation (Dubois et al., 2020). However, the greatest contribution of this research has been to provide a platform for people in the Chobe Enclave to make their voices heard in HEC governance.

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APPENDIX I: Interview Guide – Enclave Residents

Introduction and Background

- Could you tell me your name and a little bit about yourself?
    - Could you tell me more about your community/village?
    - What languages do you speak?
    - Are you a citizen of Botswana? If not, what nation?
- I'd like to know more about your personal experience with elephants. Can you describe a recent or memorable interaction that you've had with elephants?
- I'd like to learn more about the history of conservation and development in the area, could you tell me about how the interactions between people and elephants have changed over time?
    - How have the ethnic groups who live in the area changed over time?
    - How have the ways people make a living changed?
    - How have the numbers and movements of elephants changed?

Human-Elephant Conflict Management and Reduction

- What does "human-elephant conflict" mean to you?
    - What is your personal experience with human-elephant conflict?
    - Why do you think human-elephant conflict occurs?
    - Why do you think some villages/communities/ethnic groups experience human-elephant conflict more than others?
- Can you give me an overview of your community's current involvement in elephant management?
    - Does your community participate in the Chobe Enclave Conservation Trust?

    - Does your community participate in determining the locations of elephant corridors in the area?
- How you feel that trophy hunting of elephants impacts human-elephant conflict?
    - Do you feel that revenue from trophy hunting is dispersed equally among communities/villages in the Chobe Enclave?
    - How has the COVID-19 pandemic impacted trophy hunting?
- How do you feel that photographic tourism impacts human-elephant conflict?
    - Do you feel that revenue from photographic tourism is dispersed equally among communities/villages in the Chobe Enclave?
    - How has the COVID-19 pandemic impacted photographic tourism?
- Could you describe the relationship between rural communities and Botswana's Department of Wildlife and National Parks (DWNP) on issues of wildlife management?
    - Are there barriers to communication i.e., language, access to infrastructure, distance from administrative centers?
    - Do members of your community work for DWNP?
- How do you feel your community is impacted by national and international decisions relating to elephants?
    - How do neighboring countries, like Namibia, Zambia, and Zimbabwe influence the movement of elephants in the Enclave?
    - Do you think it would be beneficial for Botswana's elephant population to disperse to neighboring countries?
    - How do you feel your community's ability to collaborate with government officials at national and international levels could be improved?

- Could you describe how the COVID-19 Pandemic has impacted elephant conservation and management in the Chobe Enclave?
- What other changes would you like to see in the management and reduction of human-elephant conflict?

Wrap up

- Can you think of anyone else I should talk to about human-elephant conflict?
- Is there anything else that you would like to share before we conclude our conversation?
- Would you like to receive the results of this study?
    - If so, how should I contact you?

APPENDIX II: Interview Guide – Conservation Practitioners

Introduction and Background

- Could you tell me your name and a little bit about yourself?
    - Can you tell me about your role in elephant conservation and management?
    - Do you work with communities, at the national level, or internationally?
    - How did you become involved in your organization?
    - What languages do you speak?
    - What is your ethnicity?
    - Are you a citizen of Botswana? If not, what nation?
- I'd like to know more about your personal experience with elephants. Can you describe a recent or memorable interaction that you've had with elephants?

Human-Elephant Conflict Management and Reduction

- What does "human-elephant conflict" mean to you?
    - What is your personal experience with human-elephant conflict?
    - Why do you think human-elephant conflict occurs?
    - Why do you think some villages/communities/ethnic groups experience human-elephant conflict more than others?
- Can you elaborate on how your organization engages with national and international elephant conservation and management?
    - How is your organization involved in setting elephant hunting quotas?
    - How is your organization involved in determining the locations of elephant corridors?

    - Did you participate in the Kasane Elephant Summit which took place in May 2019?
    - Did you participate in the KAZA Strategic Planning Framework for the Conservation and Management of Elephants?
- Can you give me an overview of how your organization engages communities in elephant conservation and management?
    - How are rural communities consulted when setting elephant hunting quotas?
    - How are rural communities, like those in the Chobe Enclave, involved in determining the locations of elephant corridors?
    - Does your organization consult community trusts i.e., the Chobe Enclave Conservation Trust?
- How you feel that trophy hunting of elephants impacts human-elephant conflict?
    - Do you feel that revenue from trophy hunting is dispersed equally among communities/villages in the Chobe Enclave?
    - How has the COVID-19 pandemic impacted trophy hunting?
- How do you feel that photographic tourism impacts human-elephant conflict?
    - Do you feel that revenue from photographic tourism is dispersed equally among communities/villages in the Chobe Enclave?
    - How has the COVID-19 pandemic impacted photographic tourism?
- Could you describe the relationship between the Department of Wildlife and National Parks (DWNP) and communities in the Chobe Enclave on issues of wildlife management?

    - Are there barriers to communication i.e., language, access to infrastructure, distance from administrative centers?
    - Do Chobe Enclave community members work for DWNP?
    - According to a recent census, the people of the Chobe Enclave are predominantly BaSubiya, BaTawana, BaSarwa. Are these different ethnic groups included in elephant conservation and management?
- How do you feel your organization is impacted by international decisions relating to elephants?
    - How do neighboring countries, like Namibia, Zambia, and Zimbabwe influence the movement of elephants in Botswana?
    - Do you think it would be beneficial for Botswana's elephant population to disperse to neighboring countries?
    - How do you feel your organization/agency's ability to collaborate internationally could be improved?
- Could you describe how the COVID-19 Pandemic has impacted elephant conservation and management in the Chobe Enclave?
- What further changes would you like to see in the management and reduction of human-elephant conflict?

Wrap up

- Can you think of anyone else I should talk to about transboundary human-elephant conflict?
- Is there anything else that you would like to share before we conclude our conversation?
- Would you like to receive the results of this study?

- If so, how should I contact you?