Protected Areas, Tourism and Rural Community Livelihoods in Botswana

by

Moren Tibabo Stone

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Graduate Supervisory Committee:

Gyan P. Nyaupane, Chair
Megha Budruk
Brijesh Thapa
Dallen J. Timothy

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ABSTRACT

Firstly, this study uses community asset mapping guided by the Community Capitals Framework (CCF) to explore the linkages between Protected Areas (PAs), tourism and community livelihoods. Secondly, it assesses changes in community needs facilitated by community participation in wildlife-based tourism in a protected area setting. Thirdly and finally, the study assesses whether the introduction of community wildlife-based tourism in a protected area as a sustainable management tool has led to the spiraling up or down of community capitals. The study adopted qualitative research method approach and made use of data collected through community asset mapping supplemented by data from focus group discussions, households, key informants, and secondary data materials that were analyzed and interpreted in light of community capital framework. The Chobe National Park (CNP) and Chobe Enclave Conservation Trust (CECT); a community living adjacent to CNP in Botswana provides the context on which this study's discussion focuses. Results indicate that the accession of Botswana from colonialism through post colonialism era intertwined considerable institutional arrangement changes in the field of protected area governance that reflects evolutionary management styles. Protected areas, tourism and community livelihoods linkages are based on many inter-dependents of community capitals relationships which are dependent on community socio-economic activities. In assessing changes in community needs, the results indicate that participation in wildlife-based tourism has brought both positive and negative changes that have implications on both the status quo for community livelihoods and protected areas, namely; the influence of changes in community capitals dynamics, mechanization and commercialization of agriculture, government funded infrastructural

development, income generation, and the commodification of some of the community capitals. Finally, the increased livelihoods options and diversification dynamics, fragile wildlife-livestock co-existence, heightened human-wildlife conflicts, environmental education and awareness are the emerging themes that explain how the introduction of tourism in a protected area setting affect the spiraling up and down of the community capitals dynamics.

DEDICATION

To my dear parents and family

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TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

Problem statement

The idea to initiate this study did not come from mere abstract curiosity about protected areas, tourism and community livelihoods (though that would obviously have been a worthy impetus), but rather it came from critical observations and available literature which indicates that in most sub Saharan African countries today, communities are engaged with many natural resources based development projects that are intended to sustain conservation and improve their livelihoods. Communities appear to be losing the battle against the loss of wildlife and its habitat, and natural resources seem to be declining, affecting their livelihoods altogether. There has been an endemic outbreak of famine in the region that is linked to the declining state of the environment, as reflected by the systematic deterioration of food security. For example, more than 10 million people are now affected in drought-stricken areas of Djibouti, Ethiopia, Kenya, Somalia and Uganda and the situation is deteriorating (United Nations, 2011).

The environment is to sub Saharan Africa what technology is to the west: the engine that drives the economy (Mordi, 1991). There is no country on the entire African continent that is truly industrialized and each of the 57 independent countries derive much of their economic resources (food, cash crops, livestock, minerals, fuel energy, and hydro-electricity) directly or indirectly from the natural environment (Lee, 2003). Thus, this strong link on natural resources dependence and economy has serious implications on the economic performance of many developing countries, if environmental performance

declines. Regardless of the environmental degradation in the region, and as agued by Chase (2011) each country has its development, environmental and conservation policies that are geared to ameliorate the situation; however, environmental degradation has continued unabated despite endless conservation rhetoric, revealing the inadequacy of present approaches.

Today, natural resources, more especially wildlife in Botswana, like in most sub Saharan countries is dwindling, in both absolute numbers and species diversity (Mordi, 1991). This problem occurs despite the government's efforts in setting aside land for wildlife management. For example, in terms of the country's land-use, 17% of the land has been allocated for national parks and game reserves; these are wildlife protected areas; an additional 22% has been designated as wildlife management areas where some local communities are engaged in tourism and related activities (Department of Tourism, 2010). Essentially, 39% of the country's land surface is used for conservation and tourism developments purposes (Department of Tourism, 2010). Irrespective of this sizeable land allocation to wildlife resources, the national fauna is reported to be diminishing and the figures at which it is declining are worrisome. For example, Chase's (2011) study found that eleven species have declined by 61% since a 1996 survey in Ngamiland district; the location of the world renowned Okavango Delta in Botswana. The ostrich (*Struthio camelus*) numbers were worst off; with a 95% drop, from 11,893 animals to 497, some 90% of wildebeest (*Connochaetes taurinus*) were also wiped out, along with 84% of the population of the antelope tsessebe (*Damaliscus lunatus*), 81% of warthogs (*Phacochoerus aethiopicus*) and kudus (*Tragelaphus Strepsiceros*), and nearly

two-thirds of giraffes (*Giraffa camelopardalis*) (Chase, 2011). Consequently, these figures show that the Okavango Delta ecosystem has suffered "catastrophic" species loss over the past 15 years. It can also be argued that the same diminishing species have made Botswana one of the popular African wildlife-based tourism destinations. For example, at the commemoration of the World Tourism Day in 2011, the minister of Environment, Wildlife and Tourism announced that more than 2 million international tourist visited Botswana in the year 2010 alone, spending BWP 4.7 billion (US$ 587.5 million) in the country (Mmegi, 2011). The tourism sector's contribution to the gross domestic product (GDP) in the same year stood at 3.7 percent with accommodation room and bed occupancy rates at 48.1 percent and 40.7 percent respectively (Mmegi, 2011).

However, the Okavango Delta ecosystem is not the only tourist destination in Africa facing the loss of natural bounty. Pinnock (2011) reports that in the Maasai Mara, Kenya, the numbers of impala (*Aepyceros melampus*), warthog (*Phacochoerus aethiopicus*), giraffe (*Giraffa camelopardalis*) and hartebeest (*Alcelaphus bucelaphus*) have declined by more than 70% over a period of three decades. The causes for the observed declines in sub Saharan Africa are not well understood but postulated to be related to a number of factors including changing perennial rivers flooding regime, habitat fragmentation, drought and erratic rainfall, habitat over-use through anthropogenic pressures, e.g. expansion of livestock, unregulated hunting and poaching, ignorance of the finiteness of wildlife resource, human population and demographic trends (Botswana Press Agency, 2012; Chase, 2011; Mbaiwa, 2011; Moswete, Thapa &

Child, 2012; Salafsky & Wollenberg, 2000; Stricklans-Murnro, Allison & Moore, 2010; Mbaiwa & Stronza, 2010).

In view of this scenario, it is likely that the present wildlife development programs in Botswana may fail unless a change in approach is adopted by the local populace (MacMillan, 2011). Nevertheless, the decline in wildlife resources occurs even when intervention measures have been sought and put in place. One such measure is the introduction of protected areas tourism as a co-management tool. The emergence of the tourism sector and its incorporation in conservation has recently been called for. Thus, tourism has been increasingly fronted as a key instrument for maintaining protected areas globally (Tumusiime & Vedeld, 2012). Integrating tourism and conservation with existing local historical, socio-economic, and institutional landscapes is associated with the promotion of local community participation in resource management. This integrated approach is an appealing concept, and it's often quoted as logic of promoting conservation and rural development is difficult to ignore (Tumusiime & Vedeld, 2012).

Conservationists and development planners believe there are lessons to be learned from the decline of wildlife populations in the sub Saharan Africa region. However, one of the biggest problems in both the Masaai Mara and the Okavango Delta is that research may not use the system thinking approach (Hjorth & Bagheri, 2006), that is, research may not look at how the land around PAs is managed as a system. It is very important that we have a more holistic approach to conservation and development and not see these as isolated islands. We need to think of them as full ecosystems. The Okavango Delta is still one of Africa's great wildlife destinations, but doing nothing will jeopardize that

reputation. The general question that still needs to be answered is how local communities can use PAs to generate socio-economic benefits through the sustainable use of biological diversity? Is fronting protected areas tourism as an intervention measure in conservation and community livelihoods improvement the remedy? There is no dispute that the importance of nature in attracting tourists is significant, and a chance to see wildlife and undisturbed nature is rated as a very important reason for visits to protected areas (IUCN, 2012; Sekhar, 2003).

In many areas tourism may be perceived as a panacea to economic development, particularly areas of natural beauty. However, as argued by (IUCN, 2012) high numbers of tourists in response to tourism products bring along multiple socio-cultural and environmental problems which have implications on sustainable tourism management. Assessing tourism impacts and their linkages to the environment and livelihoods, is directly related to the identification of the most important issues or impacts from the perspective of stakeholders (Miller & Twining-Ward, 2005). In the tourism field, impacts and linkages between the environment, tourism and community livelihoods are commonly measured quantitatively using Likert scales to investigate residents' perceptions of linkages, impacts and attitudes to tourism (Deery, Jago , Fredline & Dwyer, 2005; Strickland-Munro et al, 2010). More qualitative research, more especially dealing with in-depth case studies is another common assessment approach that can yield rich case results that in turn can inform the development of measurable indicators.

However, a number of indicator-based frameworks have been proposed to conceptualize, predict and manage visitor impacts on protected areas tourism, which

includes: Limits of Acceptable Change, Visitor Impact Management, Visitor Activity Management Process, Recreational Opportunity Spectrum, Visitor Carrying Capacity and Visitor Impact Management Model (Newsome, Moore & Dowling, 2002; Salafsky & Wollenberg 2000; Carter, 1994). In terms of understanding links between tourism, conservation and development, some conceptual frameworks have been developed, for example, Budowski (1976) developed a framework to explain the relationship between tourism and conservation which explain three scenarios of relationships: conflict, coexistence, and symbiosis. Salafsky and Wollenberg (2000) developed a conceptual framework, which comprises three scenarios: no linkage, indirect linkage, and direct linkage. Carter (1994) proposed four possible links between environment and development: win/win, win/lose, lose/win and lose/lose. In terms of assessing community tourism empowerment Schevyens (1999) developed an ecotourism empowerment framework, which is composed of four dimensions: social, economic, political, and psychological empowerment. The focus of these frameworks seems to be on the current state of the system without considering complex interactions and interdependencies between resources and stakeholders (Strickland-Munro et al, 2010).

Collectively, tourism researchers imply that the surroundings within which tourism is positioned exist as an isolated environment (Farrell & Twining-Ward, 2005; Russell & Faulkner, 1999). As a result, emerging thinking conceptualizes tourism as a complex system, consisting of multiple interacting components (Farrell & Twining-Ward, 2005; Lacitignola et al., 2007; Strickland-Munro et al, 2010). Therefore, any tourism study conducted without explicit recognition of interacting variables e.g.,

political, social, cultural, physical, economical, historic, and ecological, will reveal an incomplete and possibly confusing picture, as the complex interactions between system components will not be apparent. It is on this background that this research is premised. However, this approach does not strive for a simple answer to solve complex problems (Berkes & Folke, 1998), but tries to build on the work of scholars who have undertaken carefully, well documented and theoretically sound studies on socio-economic systems of tourism and ecosystem (Berkes & Folke, 1998; Budowski 1976; Carter, 1994; Holling, Coulding & Folke, 2003; Salafsky & Wollenberg, 2000).

Characteristically, protected areas tourism has problems which tend to be systems problems, where aspects of behavior are complex and unpredictable and where causes, while at times simple (when finally understood), are always multiple (Ostrom, 2007). Ostrom further asserts that the problems are nonlinear in nature, cross-scale in time and in space, and have an evolutionary character.

This research approach, therefore assesses the justification of tourism being fronted as a key instrument in maintaining protected areas as well as improving local community livelihoods using community capital framework (CCF) as a system approach.

Justification of the study

The purpose of this research is to assess the relationship between protected areas tourism and community livelihoods, specifically assessing the linkages between protected areas tourism and community livelihoods. This assessment is conducted at a community level, that is, the unit of analysis is the community. An assumption is made that protected areas tourism development has the potential to reinforce local community participation

and inclusion by ensuring communities gain more benefits that can translate to more community capitals accumulation. Nonetheless, it can exclude local communities by opening protected areas' resources to outsiders (for example, tour operators and tourists), in the process decreasing community capitals (i.e. loss of financial and political capitals – control of resources). Depending on the direction of resource use, community capitals accumulation or dwindling affects protected areas conservation goals and local community livelihoods status quo and this process may stabilize or destabilize resources use and management. Therefore, an analysis of protected areas tourism management and community livelihoods must include a focus on the ability of local communities to act collectively to balance the management of protected areas and livelihoods.

Using a systems thinking approach can effectively improve our understanding of the linkages between protected areas, tourism and community livelihoods. Thus, this research is premised on the context of system approach. That is, understanding the dynamics among and between community capitals as a direct response or influence by protected areas tourism in relation to community livelihoods can help us yield a better understanding of how protected areas tourism as a "community natural capital" can influence the stocks and flows of other capitals. Communities are not static but changing and growing, as these processes are taking place, their needs may also change redefining their socio-economic needs that affect their relationships with the environment. It is these changes in community needs that may explain their relationship with protected areas.

The overall aim of this study is to assess the dynamics of community capitals and to establish whether community development or change also leads to changes in

community needs. Furthermore the study will establish what implications these changes have on sustainability in the social-ecological system (in the context of protected area tourism and community livelihoods). The aim is to assess in a broad socio-political, cultural and economic context, the opportunities and tensions created on community livelihoods in the pursuit of conservation-based tourism in protected areas.

The specific objectives of the study are as follows:

1. To map community capitals trends in a successional approach so as to determine implications on sustainability.
2. To assess whether changes in community needs have altered the character of protected areas and community livelihoods.
3. To assess whether the introduction of tourism has led to the spiraling up or down of community capitals.

To address research question 1, the research draws much from the community capitals dynamics. The assumption is that every community has assets, no matter how poor the community is. Therefore, community development is dependent on the capability of using available assets. Drawing from connecting the past to present assets helped to understand how community capitals shaped the community. Possible future community aspirations were projected by asset mapping process informed by the community drawings as representing future plans. The community was asked to map their past, present and possible future assets. This objective is addressed in chapter 4.

To address objective 2; a prior assumption was postulated that community's relationship with its environment is shaped by changes in community needs. As

communities assume social mobility, their needs change too, being influenced by either internal or external factors. Community capitals or stocks flow is influenced by changes in community needs. It is the understanding of these community needs changes that can help to understand the relationship between protected areas, tourism and community livelihoods. This objective is addressed in chapter 5.

In addressing research objective 3; an assumption was postulated that tourism as a livelihood option that can be pursued like any other economic endeavor, has the potential to uplift or drop conservation efforts and community's lives. Tourism can determine the flow and direction of community assets. It is the capital stock, flow and direction that determines trade-offs between community capitals as triggered by tourism. The trade-offs scenario can easily result in shocks or vulnerability context to both community lives and protected areas as a system. It is important to understand this vulnerability context in the context of protected area settings and community livelihoods that can help us understand their linkages or relationships. This objective is addressed in chapter 6.

A synthesis of chapter 4, 5 and 6 is underscored as the conclusion in chapter 7. Chapter 7 also presents a summary of research findings, recommendations and future research directions.

Chapter 2

CONCEPTUAL FRAMEWORK

The community capital framework (CCF), developed by Flora (2005) provides a tool for analyzing how communities work. Capital is defined as "a resource or asset that can be used, invested, or exchanged to create new resources" (Flora, Flora & Fey, 2004; p. 1). The CCF consists of seven types of capitals; natural, cultural, human, social, political, financial and built (Emery, Fey & Flora, 2006), as illustrated in Figure 1. The framework offers an approach to assess community and development efforts from a systems perspective by identifying assets in each capital (stock), the types of capital invested (flow), the interaction among the capitals, and the consequential impacts across capitals (Emery et al, 2006). In the context of this research, the CCF is used to understand the flow among the capitals as a result of the interaction between protected area, tourism and community livelihoods and how the impacts of this flow affect the system. Communities are systems that have inflows and outflows, ups and downs, progression and regression (Jacobs, 2007). That is, these capital assets can be wisely invested, combined, and/or exchanged to create more community resources, but at the same time they can also be squandered or accumulated if the community doesn't use them wisely (Emery et al, 2006). If the assets are sustainably used the outcomes are healthy ecosystems, vibrant regional economies, social equity and communities' empowerment (Flora et al, 2004).

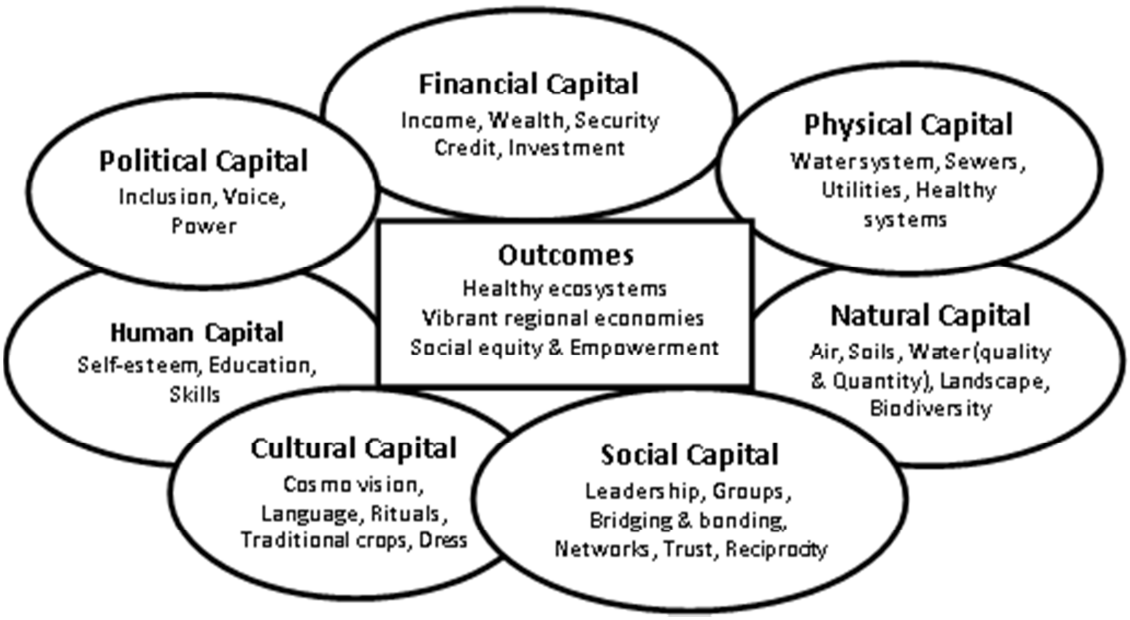


Figure 1. Community Capital Framework (Flora, 2005)

The overviews of the seven types of community capital that can be used to gauge how community resources are used are summarized in Table 1.

Table 1. Summary of Community Capitals

Capitals	Descriptions
Social	This is the networking account. It includes the close bonds between and among family and friends, communities, groups, organizations, networks and trust in the community, the sense of belonging, and bonds between people (Emery et al., 2006). It can influence, as well as be influenced by, the stock and flows of other capitals. By examining the interaction among community capitals, as well as investments from outside in different capitals, we can better understand the critical role of social capital (Flora et al, 2006).
Human	This is the human resource "people" account. It includes leadership capabilities, knowledge, wisdom, information, and skills possessed by the people who live in the community.
Natural	This is the environmental account. It includes the resources that exist in the natural world. Some of which may include but are not limited to; the soil, lakes, natural resources, nature's beauty, rivers, forests, wildlife and local landscape. Communities work with these resources to meet livelihoods needs.
Financial	This is the financial account. It includes the resources related to money and access to funding, wealth, charitable giving, grants.
Physical/built	This is the building and infrastructure account. It includes the following; houses, schools, businesses, clinics, libraries, water systems, electrical grid, communication systems, roads, transportation systems.
Cultural	This is the account for community cultural resources. The way communities view the world. Culture defines the traditional ways of doing and being - habits and attitudes. It includes dances, stories, heritage, food and traditions and also values and connections to the spirit. Cultural capital is also a resource to attract tourism.
Political	This account represents power and community connections to people who have power. Communities draw upon this resource when they unite to solve a controversial issue. Political capital is built by making connections with political and community leaders both inside and outside the community (Emery et al (2006). It reflects access to power, organizations, connection to resources and power brokers (Flora et al., 2004). Political capital also refers to the ability of people to find their own voice and to engage in actions that contribute to the well-being of their community (Aigner, Flora, Hernandez, 2001).

Sources: (Aigner, Flora & Hernandez, 2001.Emery et al., 2006; Flora et al., 2006; Flora et al., 2004).

Many authors agree that social capital directly focuses on the domain of the "community" and is defined as comprising of social interactions, trust and reciprocity needed to facilitate collective outcome (Emery et al., 2006; Flora et al., 2004; Koutra & Edwards, 2012; Putnam, 1993). It includes the close bonds between and among communities, organizations, networks and trust and sense of belonging (Emery et al., 2006). It can influence, as well as be influenced by the stock and flows of other capitals. Human capital includes "the knowledge, skills and competence and other attributes embodied in individuals that are relevant to economic activity" (OECD, 1998, p. 9). Emphasis is on the application of education and training as important elements that significantly assist people from underprivileged backgrounds, particularly those from developing countries, to climb the economic ladder as the accumulation of knowledge and skills increases productivity and earnings (Koutra & Edwards, 2012). However, Bronchi (2003), asserts that it is not always the case that in developing economies there is a good match between the numbers of highly educated individuals emerging from educational and training programs and appropriate employment opportunities. Natural capital refers to resources that exist in the natural world (Fukuyama, 2001), some of which may include but are not limited to; the soil, lakes, natural resources, nature's beauty, rivers, forests, wildlife and local landscape. Communities work with these resources to meet their livelihoods needs. Financial capital refers to the capacity to access funds from banks, created through investments or through micro finance/credit mechanisms, financial linkages, and partnerships (Koutra et al., 2012). It includes the

resources related to money and access to funding, wealth, charitable giving, and grants (Ellis, 2000).

Physical capital comprises man-made assets used in production (Koutra et al., 2012). It includes the infrastructural development that benefits the general community such as houses, schools, businesses, clinics, libraries, water systems, electrical grid, communication systems, roads, transportation systems, water supply and treatment, highways, airports, and more specific sector-related infrastructure (Emery et al., 2006).Cultural capital is related to cultural resources; the way communities view the world (Flora et al., 2006). Culture defines the traditional ways of doing and being - habits and attitudes (Emery et al., 2006). It includes dances, stories, heritage, food, traditions, and values. Political capital represents power, community connections to people who have power and strong voices (Koutra et al., 2012). Communities draw upon this resource when they unite to solve a controversial issue. Political capital is built by making connections with political and community leaders both inside and outside the community (Emery et al., 2006). Trousdale (1999) recommends, ethically strong political and community leaders need to come together to address issues of power, to provide strategic guidance, and to establish local commitment, all complemented by the technical knowledge needed for implementation.

While the capitals seem to be separated into seven discrete categories, each has a connection to other capital types (Flora et al., 2004). In order to survive and prosper in what can often be difficult circumstances, rural communities pursue a ‘‘livelihood strategy’’ that may comprise of a number of different activities such as farming, herding,

off-farm employment, fishing, hunting and gathering (Sherbinin et al, 2008). In order to engage in these activities, communities mobilize the assets at their disposal. An array of livelihood approaches emphasize capabilities of the rural poor, based on the recognition that even the poorest communities hold wealth in at least some of their capitals (Sherbinin et al, 2008). It is the combination of these assets that defines the socio-economics of a community depending on the community's capability to harness available assets. The capability to mobilize these seven forms of capitals defines relationships communities have with their environment. For example, a community that liquidates forest resources (natural capital) in order to finance education (human capital) is substituting natural capital for human capital, which may in turn yield employment opportunities that yield a steady stream of financial capital, which may then be depleted in order to invest in physical assets such as cattle, houses, vehicles.

The capability to mobilize these seven forms of capitals defines relationships communities have with their environment. In view of this assumption, we can therefore, advance that a community, its assets, and the local environment are all ‘‘embedded’’ in these contextual factors. The framework offers an approach to assess community and development efforts from a systems perspective by identifying assets in each capital (stock), the types of capital invested (flow), the interaction among the capitals, and the consequential outcome or impacts across capitals (Emery et al., 2006). In the context of this research, the CCF is used to understand stock and flow among the capitals as a result of the interaction between protected areas, tourism and community livelihoods, and how the impacts of these stock and flow affect the system. Communities are systems that have

inflows and outflows, ups and downs, progression and regression (Jacobs, 2007). These capital assets can be wisely invested, combined, and/or exchanged to create more community resources; at the same time they can also be squandered or accumulated if the community does not use them wisely (Emery et al., 2006). As depicted on Figure 1, if the assets are sustainably used, the outcomes are healthy ecosystems, vibrant regional economies, social equity and communities' empowerment.

Tourism and community empowerment

Given the increased awareness about the importance of host communities and environmental responsibility in tourism, community-based tourism (CBT) has gained popularity in the tourism literature (Baktygulov & Raeva, 2010; Choi & Sirakaya 2005; Hung, Sirakaya & Ingram, 2011) as a strategy for environmental conservation and community development. Cornell University Empowerment Group (1989, p.2) describes empowerment as "an intentional, on-going process centered in the local community, involving mutual respect, critical reflection, caring and group participation, through which people lacking an equal share of valued resources gain greater access to and control over those resources." Empowerment-oriented interventions enhance community participation while they also aim to ameliorate problems, provide opportunities for participants to develop knowledge and skills, and engage professionals as collaborators instead of authoritative experts (Perkins & Zimmerman, 1995).

CBT is promoted for community empowerment purposes, thus in the last two decades the vocabulary of community empowerment (Schyvenes 1999; Tosun, 2001; Tuson, 2005; Hwang, Stewart & Ko, 2012) has entered the discourse on tourism

development. Nonetheless, empowerment strategies are variously broadly operationalized as community participation, community ownership, community capacitation, community livelihood diversification, community partnerships, community-based management, community sovereignty (Tuson, 2005; Scheyvens, 1999; Cole, 2006; Timothy, 2007; Zimmerman, 1995). For the realization of sustainable tourism, community empowerment is regarded as a central component to community development and yet making this concept operational in a program context remains elusive (Laverack, 2001). To make the situation more complicated are the many definitions of community empowerment which are broadly based on their interpretation as either inter-personal or contextual elements and as an outcome or a process (Laverack, 2001). Community empowerment in tourism has been called for to foster community participation, which can mean a level of control, ownership or influence in a tourism initiative and appears to be closely linked to the derivation of livelihoods and other benefits from the initiative to that same community (Murphy, 1985; Scheyvens, 1999; Tuson, 2005; World Wildlife Fund (WWF), 2001).

Community empowerment is a catalyst of community's sense of ownership; feelings of responsibility and practical involvement in tourism has been gesticulated by researchers and practitioners as central to the sustainability of tourism and of great importance to planners, managers and operations (Boyd & Singh, 2003; Campbell, 1999; Olsen, 1997; Page & Dowling, 2002; Ross & Wall, 1999; United Nations World Tourism Organization, 2011). The popularity and seeming durability of community empowerment have not, however, produced broad consensus on its meaning, measurement or implementation (Beeker, Guenther-Grey & Raj, 1998) since empowerment can serve

many different agendas (Strawn, 1994). In line with international agencies, the United Nations World Tourism Organization (UNWTO, 2011) asserts that community empowerment as a precept of sustainable tourism can be a tool for economic development and poverty reduction. The World Tourism Organization [WTO] (2002) asserts that community empowerment through tourism can create opportunities for local economic diversification of the poor and marginal areas where there are no other development opportunities.

Community empowerment through tourism is based on cultural, wildlife and landscape assets that belong to the poor and promotes gender equality by employing a relatively high proportion of women; reducing leakage from, and maximizes linkages to local economies (World Tourism Organization [WTO], 2002). Community empowerment gives a community the capability to decide the type of tourism facilities and conservation programs they want in their locality and how tourism costs and benefits can be shared amongst different stakeholders (Akama, 1996).

A more all-inclusive community empowerment framework needs to recognize the importance of social, economic, environmental, and cultural dimensions of community enablement equally, rather than aiming on parts of the dimensions in segregation (Tao et al., 2009a). Empowerment is a multi-dimensional concept including economic, social, political, and psychological empowerment (Friedmann, 1992; Scheyvens, 1999).

In pursuant of a more encompassing model, Scheyvens (1999) developed an ecotourism framework that identifies four dimensions of empowerment; social, economic, political and psychological dimensions. According to Scheyvens' framework,

economic gains of tourism that are well documented in the tourism literature are signs of economic empowerment; psychological empowerment comes from self-esteem and pride in cultural traditions while social empowerment results from increased community cohesion when members of a community are brought together through a tourism initiative. Scheyvens' fourth dimension is political empowerment – which recognizes community's voice, leadership capability, and connection to power brokers.

To understand how community empowerment empowers community's participation in resources management; it is as well as important to review the role played by community capitals as sometimes these concepts overlap.

Community Capitals and sustainability

The broad notion of sustainability should encompass ecological, economic and cultural parameters (Tao et al., 2009b), which are highly interdependent and thus need to be addressed at the same time. Tao et al. (2009a) argue that research that targets only one parameter and tries to assess it in isolation of others will not yield a holistic understanding of how tourism contributes to the well-being of communities and environmental conservation. Sustainability requires striking a balance between being economically viable, preserving the resilience of cultural integrity, social cohesion, and maintaining the physical environment status (Altman and Finlyson, 1993). In order to achieve common goals, the community should have the opportunity to participate in the planning, operation of the tourism industry and in making decisions about their future (Tao et al, 2009b).

The failure of having community capitals at par with others may render the system unsustainable. Serageldin and Steer (1994) suggest that researchers should think of sustainable development in terms of patterns in the accumulation of, and substitution among different types of community capitals. The authors' contention is premised on the background that for a long time there was dominant thinking in the World Bank and other development organization that equated development with economic growth hence it was the only indicator of interest to development planners (Serageldin at al., 1994). However, the World Development Report (WDR) (1990) highlights that development seen through the lens of poverty reduction ought to be pursued through macroeconomic growth and investing heavily in people; above all in education (human capital). Consequently, human capital also is recognized as being critical in development and poverty alleviation debates. The World Bank pushed for macroeconomic growth that later led to the recognition that economic growth may have adverse impacts on the environment, thus, natural capital began to be recognized, alongside human and economic capitals.

In terms of social capital, Putnam's (1993) study of civic traditions, democracy and regional development suggests that the critical factor in explaining regional differences in a government's effectiveness and economic performance is to be found in corresponding regional differences in social structures and networks, thus, social capital also is recognized as an important form of capital. Cultural capital is acknowledged as one of the critical forms of capital which assists in understanding the way people "know the world" and how they act within it (Emery et al, 2006). This is influenced by their value systems and shapes people's interaction with the surrounding environment (Emery

et al, 2006). Equally important, is the political capital which refers to the ability for people to find their own voice and take decisions that determine their livelihoods destiny.

Built capital, which includes infrastructure development, is better described by the theory of cumulative causation, formulated by Myrdal (1957, p.43), and simple states: “the place that loses assets, for whatever reason, will continue to lose them through system effects.” Furthermore, a place that, for whatever reason, gains assets will attract other assets, which helps explain why there is increasing inequality that is place-based (Emery et al, 2006).

Sustainable development can be thought of in terms of changes in the overall stock and changing composition of these seven types of capitals (Bebbington 1999). If “development'” implies an overall increase in the capital stock, the relative “sustainability'” of that development depends on the substitutions that occur among the types of capital (Serageldin & Steer, 1994). This study’s unit of analysis is community, and takes the position that for us to understand the linkages between protected areas, tourism and community livelihoods we ought to understand the dynamics played by community capitals.

Some authors define community in terms of locality, geographical area, and people living in a particular place (Smith 2001) while others define it in terms of people’s common interests (Tropman et al., 2001). Flora et al. (2004) argue that place attachment or geographic community may not provide the social system through which its members’ needs are met. In this paper we define community as a group of people who share a

geographic area; however, we do not presume solidarity or shared values and interests among the residents.

Community livelihoods will be assessed through qualitative changes in the overall stock of the seven types of capitals and the changing composition of their stock; therefore, the overall increase in community capitals will be interpreted as community livelihood improvements while a decrease will indicate inadequate community livelihoods improvement. The assessment will be based on whether community participation in tourism has improved/facilitated linkages between Chobe National Park and community livelihood.

Chapter 3

STUDY AREA

The CNP is located in the northern part of Botswana (see Figure 2). The CNP was declared a non-hunting area in 1933 during the colonial regime and officially established as a national park in 1968 after the country's independence in 1966 and covers approximately 11 7 00 square kilometers, encompassing floodplains, swamps and woodland (Botswana Tourism Organization (BTO), 2013). The Chobe River in the north forms Botswana's border with Namibia, part of which lies within Chobe National Park. The CNP supports diversity and concentration of wildlife un-comparable to nowhere else in the country, has one of the largest concentrations of fauna and flora in Africa and is the third largest park in the country (BTO, 2013).

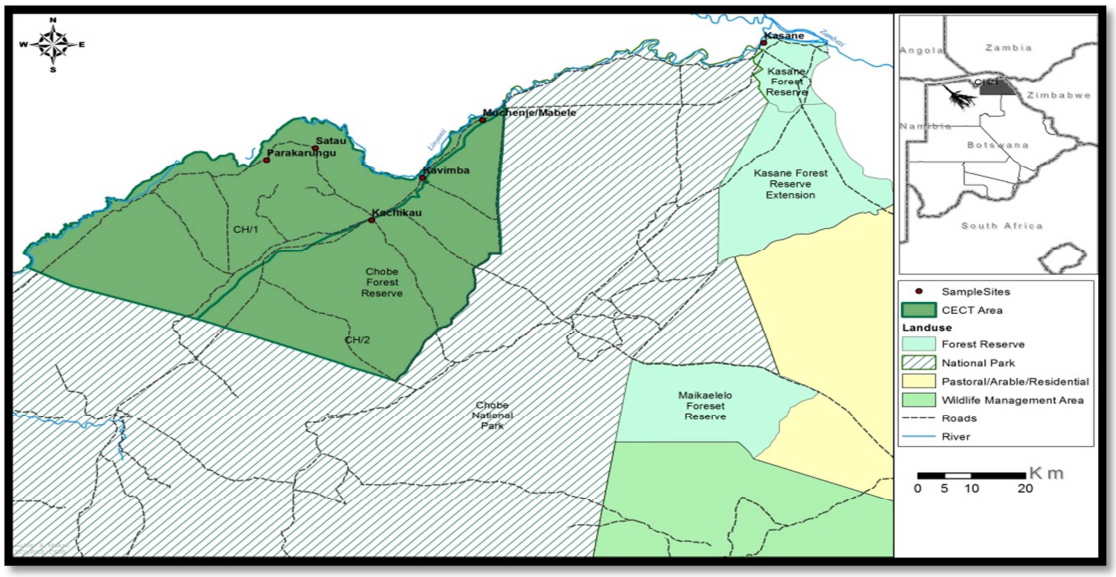


Figure 2. Study Area

The park is best known for its spectacular elephant population; estimated at 120,000 in 2003, perhaps the highest elephant concentration in Africa; the second important species is the African buffalo, which with other species during the dry winter months converge upon the river to drink (Jones, 2003), attracting a lot of international tourists. Other selected few game found in CNP include; lions, hyenas, zebras, giraffes, hippos, crocodiles, cheetahs, leopards, kudus, sables, baboons and impalas. Over 460 bird species have been recorded in the park, making it one of Africa's premier destinations for bird Safaris (BTO, 2012).The perennial presence of the Chobe River water supports a diversity and concentration of wildlife in the Chobe ecosystem.

The Chobe Enclave Conservation Trust (CECT) is a community trust or community-based organization (CBO) composing of five villages, namely; Mabele, Kavimba, Kachikau, Satau and Parakarungu, and technically speaking is located within the CNP. The villages are located on a belt that runs along the Chobe River Basin forming an enclave, hence the name Chobe Enclave Conservation Trust (see Figure 2). While the CNP covers approximately 117 00 km^2, the Enclave community is located on land measuring only 1,690 km^2 in size (Jones, 2003).The villages are located in a buffer zone which is divided into two controlled hunting areas; CH1; used for consumptive hunting tourism (all the villages are located in CH1) while CH2 is used for non-consumptive photographic tourism. The first village, Mabele is 60 kilometres southeast of the town of Kasane; all the other villages are approximately seven to eleven kilometres apart along the Kasane-Maun road (Nchunga, 2003). The small town of Kasane, about

100 km from the northern tip of the enclave, is the hub of the tourism industry in northern Botswana, and the riverfront in the CNP is a ‘magnet’ for foreign tourists (Jones, 2003).

The community of the Enclave were in the past been isolated from the economic opportunities in the wildlife and tourism. There are not many government oriented developments in the enclave communities; much of the development is concentrated in Kasane. There are no major shops or services such as gasoline stations, and residents have to travel approximately 100 km through the Chobe National Park to Kasane to get their basic needs. The estimated population of the Enclave community is 4, 108 (Kachikau: 1, 356, Kavimba: 549, Mabele: 773, Parakarungu: 845 and Satau: 605) respectively (Botswana Population & Housing Census, 2011) and about 70% reside in the Enclave while the rest work outside the area (Jones, 2003).

The CECT community is largely composed of the Basubiya, with small proportions of Batawana and Basarwa ethnic groups. Irrespective of ethnicity, the CECT community has a mixed economy based on three main domains: subsistence livestock rearing, crop production and wage employment. The isolation of this rural community has created a dependence on natural resources such as firewood, thatching grass, reeds, and hut building poles, used by almost all households for subsistence purposes.

The CECT residents are predominately Basubiya agro-pastoralists dependent on crop production, supplemented by sales from livestock. The cattle population owned by CECT community is estimated to be around 9000 (informal interview, Department of Veterinary Services Coordinator, 2012). The local soil is dry, sandy, and has poor crop yields mainly due to the arid desert environment. Owing to erratic and severe unreliable

rainfall, harvest yields can sometimes be even less than what households need for consumption (Barnhoon et al., 1994).

To a larger extent, the Chobe River has played a role in defining the CECT community's socio-economic activities; the river allows the community to have two planting seasons against the one planting season the majority of Batswana subsistence farmers have/depend on. Two seasonal types of cultivation take place; *molapo* and dry land farming. *Molapo* (river) planting is conducted in the river flood plains following the flood recession around August and September depending on how long the flood regime persists; dry land cultivation is conducted on sandy soil away from the river system immediately after the first rain around November/December. Backwater flooding from the Chobe is important for the maintenance of flood recession farming, where organic rich soils have been formed from flood plain peats. Maize is the predominant crop of the *molapo* season while sorghum is, for the dry land season. Secondary crops include cowpeas, spinach, melons, goads, pumpkins and millet. Nonetheless, maize makes up the staple starch in their diet (Feldstein and Poats, 1989). Before the introduction of tourism, plowing was predominately done by cattle, however, tractors, have taken over much of that duty. CECT owns 6 tractors with trailers and plowing equipment that help with plowing endeavors.

Off-farm activities that supplement farming activities include employment, especially in tourism and related establishments, fishing, traditional beer brewing, handmade crafts, wild fruits, berries, tubers, thatch grass and roofing poles gathering.

Chapter 4

USING COMMUNITY ASSET MAPPING TO ASSESS LINKAGES BETWEEN PROTECTED AREAS, TOURISM AND COMMUNITY LIVELIHOODS

Literature Review

A large proportion of tourism in developing countries constitutes nature-based tourism, in particular, tourism in protected areas (IUCN 1994). Protected area tourism has been promoted to facilitate linkages between biodiversity conservation and community livelihood improvements (Mbaiwa, 2008; Sebele, 2010). However, rich literature generated through case studies has suggested that relationships between livelihood and conservation (Mbaiwa, 2005Mbaiwa 2011; Mbaiwa et al., 2010; Nyaupane & Poudel, 2011; Upton et al., 2008; Salafsky & Wollenberg, 2000) are complex and yield mixed and conflicting results. Despite the complexity and multiple conflicting case studies protected area tourism is still being promoted and is based on the idea that if conservation and development can be achieved simultaneously, the interests of both can be served (Berkes, 2004).

The call for the inclusion of community in conservation and development debates are in part a response to the failures of fortress conservation or community exclusionary conservation efforts. Available literature that evaluates the prospects of the involvement of community-based conservation through community-based conservation experiments have been mixed at best, and the performance of many have been reported to be well below expectations (Kellert et al., 2000; Barrett et al., 2001; Mbaiwa, 2011). The outcome of the development as highlighted by Berkes (2004) is a concern to a broad

range of conservationists, social scientists, resource managers, governments, and conservation and development organizations.

In response to this new development, literature on conservation and community development is somehow reflective of the merits and demerits of the importance of the inclusion of community in conservation (Agrawal & Gibson 1999; Redford & Sanderson 2000, Murphree 2002). Berkes (2004) summarizes this conservation and development debate as: “on the one hand, there have been increasingly greater efforts and investments in community-based conservation, on the other, there has been increasingly greater concern that community-based conservation is not working and that the emphasis on community and participation is diluting the conservation agenda” (p. 622). This debate has therefore had implications on effective management and the sustainable use of natural resources. The center of the debate is whether the inclusion or exclusion of community in natural resources management will improve and ensure their sustainable use.

Nonetheless, protected area tourism is a growing trend worldwide and presents a huge potential for positive impacts on local communities (Stricklans-Murnro, Allison & Moore, 2010). This new development is connected to some extent to considerable international policy debates concerning the relationship between biodiversity conservation and poverty policies (Adams et al., 2004; Sanderson, 2005; Sanderson & Redford, 2003; Roe & Elliott, 2004). This is a response to consensus reached at the end of the 20th century on the importance of poverty eradication as a global target; the dependence of many poor people on local natural resources; this can therefore be interpreted as a powerful argument for biodiversity conservation (Upton et. al., 2008).

The identification of poverty alleviation by the United Nations Millennium Development Goals (United Nations, 2005) has seen ambitious and hopeful targets being set to address the poverty issue. For instance, in 2000, the United Nations General Assembly called for halving the number of people living in extreme poverty by the year 2015 (Sanderson & Kent, 2003). At the same time the growth in protected areas as places for biodiversity conservation and tourism has not only been adopted as an indicator for measuring the progress in biodiversity protection but also as a success towards achieving the Millennium Development Goal 7 (ensuring environmental sustainability), Target 9 (integrate the principles of sustainable development (United Nations, 2005).

Nevertheless, poverty and environmental degradation are two distinct, yet related issues that are a global concern in the 21st century (Nyaupane & Poudel, 2011). For example, local communities often rely on products, services, or land from nearby natural areas to meet their livelihood needs (Salafsky & Wollenberg, 2000). Their use constitute one demand on the biological resources of these areas, while their conservation objectives coupled with those of the state, and outside groups constitute another (Salafsky & Wollenberg, 2000). Consequently, conflicts or complementarities between the demands created by livelihood activities and conservation objectives have been the focal point of much discussions and efforts over the last two decades (Salafsky & Wollenberg, 2000). It is estimated that as many as 25% of the world's species could become extinct in the next few decades at a rate of 27,000 species per year (Wilson, 1992).

To prevent the loss of biodiversity, many protected areas have been established throughout the world (Nyaupane & Poudel 2011), and the same protected areas are used

for tourism purposes. In most cases, protected areas and tourism are intertwined and their respective impacts on local communities are difficult to isolate (Strickland-Munro et. al., 2010). The sustainability of protected areas is generally accepted as dependent on due attendance to their social, economic and cultural context (Booth & Espiner, 2004; Fortin & Gagnon, 1999; McCleave,), through interventions such as Integrated Conservation and Development Projects (ICDPs) that seek to mainstream conservation and livelihoods objectives. The ICDP intervention was a response to the establishment of protected areas, especially in the developing world where the needs of local people were ignored and people were marginalized and denied access to resources, leading to a widespread lack of community support for conservation (Ghimire, 1994; Sanderson, 2005; Sharma, 1990). Subsequently, there have been critical debates as to the effectiveness of ICDPs (see, Brandon, Redford & Sanderson, 1998; Kramer, van Schaik & Johnson, 1997; Robinson, 1993; Wells & Brandon, 1992; Western & Wright, 1994).

Despite prolific discussions on the linkages of protected areas, tourism and community livelihoods, there have been different viewpoints in attempting to define the nature of this linkage. The concept of sustainability conservation through protected area tourism and livelihoods can perhaps best be understood by considering different approaches to reconciling the demands of conservation and livelihoods that have evolved over the past century. This recognition informs this research by providing a shift in research focus through the assessment of community capitals dynamics in an endeavor to understand protected areas, tourism and community livelihoods. Current literature in protected areas, tourism and community livelihoods linkages does not explicitly establish

how community capitals dynamics affect these relationships. Attempting to bridge this oversight, this chapter adopts the community capital framework (CCF) to assess the linkages between protected areas, tourism and community livelihoods using community asset mapping as a data collection tool. The chapter examines the Chobe National Park (CNP); a protected area in Botswana, in relation to the Chobe Enclave Conservation Trust (CECT), a group of five rural villages living adjacent to the CNP (see Figure 2).

Methods

Community Asset Mapping

Despite the growing advocacy and practice of community asset mapping as a research tool, empirical research remains limited. Extant studies have focused primarily on ‘‘counter-maps’’ and indigenous maps, leaving many locally produced maps and their authors’ perspectives unexplored (Parker, 2006). This research identifies the community asset mapping as a critical data gathering tool. Community asset mapping used mostly as a planning method seeks to harmonize social and environmental concerns for land use and is described as ‘‘fundamental’’ to sustainable development (Steiner, 2000). With its emphasis on inventory, analysis, and synthesis, the community asset mapping method has large and complex information demands requiring both physical and sociocultural attributes to identify prospects and constrictions for potential land uses (Parker, 2006).

In traditional land use planning and management in tourism and protected area destinations, the emphasis has been on the measurement and mapping of objective landscape features based on physical or remotely sensed data, while relatively few resources have been devoted to assessing cultural landscapes including human

perceptions and values of landscapes to local residents. According to Parker (2006), humans are active participants in the landscape in terms of thinking, feeling, and acting; leading to the attribution of meaning and the valuing of specific landscapes. Understanding their values they attach to specific landscapes could be understood through asset mapping. Zube (1987) asserts that human kind receives information from both observation and experience, leading to the formation of perceptions that are intermediated by the sociocultural context in which the person exists and the individual's personal utility functions. Zube further argues that, thus, humans will likely associate a range of values with a given landscape, but the mix of values and the weights placed on them will differ from one individual to another.

Community asset mapping is not mapping for or of a community, but rather, it involves the community mapping its values, assets and visions for the future (Lydon, 2003).Community asset mapping as a research strategy facilitates the comprehension of the community context by the community itself. Community asset mapping asks participants to share their experiences, values, and visions about a particular setting (Lydon, 2003). Asset mapping encompasses detailing the tangible and intangible resources of a community, viewing it as a place with assets to be preserved and enhanced, not insufficiencies to be remedied (Kerka, 2003).

Community asset mapping consists of the skills, talents and capabilities available through formal or informal local institutions (Beaulieu, 2002). The approach allows local people to explore links that might exist, for instance, successful economic development (financial capital) activities often are dependent upon the availability of good community

services (physical capital), community skills and capacity to solve problems (human capital), natural resources (natural capital) and community institutions' social cohesion, trust and capacity to network (social capital).

Asset mapping commences with the philosophy that all local residents, regardless of age, gender, race, ethnic background, place of residence, or other characteristics, can play an effective role in understanding important local matters (Beaulieu, 2002) and how they might be interrelated in nature. Thus to ensure sustainable development, the response to such issues may call for systematically coordinated and collaborative approaches. Community asset-based mapping begins with developing an understanding of what exists in the community; local residents' abilities, associations and institutions, rather than focusing on what is wrong with the community. This chapter uses community asset mapping as a data collection tool.

Data Collection Strategy

Ten focus group discussions were conducted; one with the youth and the other with the elderly in each of the five CECT villages. Participants were identified through purposeful sampling and snowballing techniques. Village chiefs and village development committee (VDC) chairpersons were key in helping to identify participants who participated in focus groups. Following initial purposive sampling, the technique of snowballing was used. Snowballing involves asking respondents to suggest additional people who may be of interest to the research (Patton, 1990a). Focus groups comprised 7 to 13 members. Table 2 summarizes focus group compositions.

Table 2. Focus Groups Composition

Focus groups per village	Gender		Total
	Male	Female	
Mabele Youth	5	6	11
Mabele Elders	6	4	10
Kavimba Youths	4	5	09
Kavimba Elders	7	5	12
Kachikau Youth	4	5	09
Kachikau Elders	7	6	13
Satau Elders	3	4	07
Satau Youth	3	6	09
Parakarungu Youth	7	4	11
Parakarungu Elders	6	4	10

N=101

Elderly participants' ages ranged from 36 to 72 while the youth's ranged from 16 to 35. Elders' participants' education level ranged from non-formal education to high school level, while the youths ranged from lower middle school to senior high school. A total of 52 males and 49 females participated in focus groups. In terms of socio-economic activities, all elders were subsistence farmers who practice both arable and pastoral farming and none of them have formal employment, however, some were retirees from CECT, government, tourism establishments and related employment. Youth participants were mostly unemployed except for the four who were employed by CECT and crime prevention clusters.

After a set of questions were addressed through focus group discussions, community asset mapping strategy was used to generate data from the participants. Participants were paired or put in groups of three and were given flip charts and color pens to map their assets. Three sets of maps were created to depict the community's assets in the past/ before the introduction of community-based tourism (before 1990), now (after 1990 to 2012) and to predict the future (2012 and beyond). During asset

mapping process, the researcher as the facilitator encouraged an open and collaborative environment where all participants could engage freely with one another. After the completion of each asset map, participants presented their maps to the whole group and the researcher took notes. The researcher was able to draw on these conversations and presentations to help interpret the drawings and text produced. Participants were also asked to link their maps; both graphics and text to the Chobe National Park, tourism and their livelihoods in whatever way it made sense to them.

Focus groups and asset map data were supplemented with data from unstructured interviews with key informants including village leaders (village chiefs, village development committees (VDCs) chairpersons, CECT board chairperson, Ngoma lodge manager and 6 key governmental officials) (see Appendix A to E). In total, 18 key informants were interviewed. In-depth interviews with key informants were essential for gaining long-term knowledge on community livelihoods changes in each of the villages and assessing their linkages with the Chobe National Park and tourism development. Interviews took 45 – 80 minutes and audio recorded in *Setswana* and English languages were used depending on the interviewees' choice.

Secondary data from CECT and governmental official archives were also used. By virtue of their positions; village chiefs, CECT board members, and VDCs chairperson were purposively targeted to provide rich information about their villages. CECT records; board minutes, constitution, land use and management plan, financial and training workshop records provided information on the formation and history of CECT, financial, employment records, and stakeholders.

Data Analysis

The first step in data management and analysis involved separating data collected before tourism inception (before 1990), after inception (1990 to 2012) and data depicting the future (2012 beyond) to capture trend analysis. Secondly, the maps created were coded and text data were summarized. The process of map coding began by transferring the graphics and texts from each map onto sticky notes so that the researcher was able to manipulate and move around the data into different categories as suggested by Charmaz (2006). Categories were broadly facilitated by the research conceptual framework that consists of social, financial, cultural, physical, natural, political and human capital domains.

The map coding process included redrawing and rewriting words and images from the maps as accurately as possible by condensing the data into a smaller size. To facilitate data management and analysis, seven sticky pads of different colors were sought to represent categories (blue – political, green - natural, pink – human, yellow-physical, red – financial, orange – social and white – cultural). The resulting heaps of blue, green pink, yellow, red, orange and white notes from each map were then sorted into categories. The conceptual framework was used to define broad categories (capitals); sub categories were developed through open coding in which categories were developed as they emerged from the data. Chunks of text (ranging in length from a short phrase to a paragraph) were assigned labels during the first reading of transcripts (Ryan & Bernard, 2000). Map graphics and texts that portrayed the same information were categorized together. However, and because of the nature of this research, data analysis focused more

heavily on manifest rather than latent content of focus group transcripts, map graphics and texts. After open coding was performed, focused coding was then applied to winnow down the codes as suggested by Charmaz, (2006). Group-like-codes were treated as a common themes (see Table 3).

Findings

The Influence of Agro-based Economy (before 1990)

From the mapping exercise it was discovered that before the introduction of tourism the CECT had an agro-based economy with prominent physical assets being livestock and crop production, supplemented by natural assets such as the hunting and gathering. Traditional housing also relied on natural resources such as thatching grass, reeds, mud walls, and vegetative poles. Results from mapping exercise by the older age group were suggestive of how histories of the CECT villages were shaped by colonial and post-colonial regimes that centralized the use of natural resources and shaped community capital stocks. Contrary to this, youth's maps were indicative of how the cash-based economy influences their perceptions; hence their maps consisted mainly of employment gained from tourism establishments. Due to the importance of historical events in the systematic understanding of the relationship between the CECT community and CNP, the research adopted historical profiling to assist in the analysis of how the community reacted to and was affected by natural resources governance. It is important to note that in comparing community assets maps created by the youths and older age groups depicting the past (before 1990), the maps reflected some large marginal differences. Most of the youth's maps were showing their villages situated in their current

locales while the older age groups depicted that their villages were once located inside the park until during the colonial period when the villages got relocated to create a way for the development of the park. The maps' differences reflected the unique experiences between the youths and elders, which are important in shaping community's perceptions of protected areas. Most of the youths by then where young and some were not yet born, thus the youths missed an important development in the history of protected areas. During the presentations and discussions on the maps produced, some elderly were emotional when they reflect on how they were evicted from the park, a trait which was absent on the youth's discussions. For example, one elderly man of Satau village, aged 70 years said:

> " ..wild animals was treated as if it was people, and we were treated as if we were wild animals…..even our chiefs could not resist the eviction as the directive of our removal was directly from colonialism commissioners who insisted on the application of physical force or even shooting those who resisted the relocation…..imagine how you would react to this command and edict instruction" (An elderly's comment, 2012).

The centralization of natural resources in Botswana began during British colonial rule and continued under postcolonial governments (Mbaiwa, 1999). Asset mapping, key informants interviews and focus group discussions reflect the importance of the historical structure's relevance on how individuals identify themselves and how rural agro-pastoralists livelihoods have evolved over the past century. During colonialism and early post-independence periods, there were limited community's livelihood strategies including their relationship with the surrounding natural resources. Critical to this understanding is the removal of CECT community from the CNP (affecting community social organization) in the late1950s and the banning of hunting during the same period.

The lack of understanding by the colonial regime on the community's cultural capital that informed the community about indigenous hunting as well as community political capital that regulated the use of natural resources, especially wild game resulted in new wildlife governance regimes being imposed on the community. New regulations introduced were not consistent with community's perceptions or culture on the use of natural resources.

The prohibition of hunting forced the community to become predominately agro-pastoralists surviving on subsistence crops and livestock. Due to community's cultural practices restrictions in terms of grazing and the harvesting of wild resources in CNP, sedentary lifestyles and agricultural production were adopted. Poaching became a problem as wildlife sustained by the CNP wandered beyond its borders and damaged local communities' crops and livestock. The lack of sophisticated political capital from the community limited dialogue with government because there was no organized voice to engage the powers that be.

Colonial and post-colonial governments adopted central policies that constrained the interactions between the CNP and local communities and restricted linkages between the community and CNP. The lack of a community voice fostered the passing of prohibitive resource use regulations and diminished chances of having participatory and consultative opportunities for community involvement in the management of CNP; resulting in inequitable political control, cultural and social exclusions. This development was informed by pervasive stereotypes characterizing local community's political, cultural and socio-economic activities as being incompatible with conservation efforts even though communities have long co-existed with the same resources being conserved.

This resulted in the community's cultural capital being considered insignificant, leading the socio-political isolation of the CECT community. This had significant impacts on the interactions, linkages, and benefits received from the CNP. As an end result, the community turned to subsistence agriculture. Consequently, cattle numbers increased and had to compete with wildlife resource for space and forage.

According to the coordinator of the Department of Veterinary Services, the CECT community has a cattle population of approximately 11,000. They are kept in CH1 and often mix with wildlife. Restrictions on the use of wildlife resources were influential on the redefinition of cultural, socio-economic and the political context of the CECT community, this situation constrained the community and park relationships. These historically divisive practices fostered a culture of unending conflict over land and natural resources use. The CNP was therefore, perceived as belonging to the government and as a local community 'no-go-zone'.

The advent of tourism (after 1990)

Community capitals evolved following the institutionalization of tourism as a livelihood option. Hunting and gathering, crop and livestock farming, the main livelihood activities before tourism development, were significantly affected by tourism development. These changes are summarized in Table 3.

Table 3. Changes in Community Capitals due to tourism development

Capital	Emergence and changes in capital
Human	Hiring of trained and competent professionals – manager, program officer, and accountant. Diversifying CECT board by electing retirees who have experience, relevant & business managerial skills, and negotiation skills for Joint Venture Contractual Agreements between the community and professional hunter, community and private company to manage the lodge, government departments. Engagement with private companies to compete and bid for hunting & photographic concession, outsourcing of legal assistance from attorneys. Scholarships.
Political	Formation of CECT as community decision making body, development of CECT constitution, CECT land use & management plan, VDCs, recognition of village chiefs as conflict mediators by community and govt. Establishment of equitable and participatory community decision-making process, devolution of control, authority over wildlife and benefits, open dialogue between CECT and government.
Social	Formation of CECT as a community recognized institution. Women & men association groups – hand craft making groups, dancing groups, farmers' associations , networking & partnership with private companies – lodge, hunting & photographic safari companies, donors and NGOs – AWF, USAID, government departments – DWNP, Department of Tourism, BTO, Community-Private Joint Venture Agreement & partnership to run CHAs, strengthened social cohesion, better relationships with conservation officials, CECT annual scheduled meetings & Annual General Meetings
Financial	Donations – AWF, USAID, revenue generated from wild animals quota, Diversification of income & employment generating avenues – Ngoma lodge, 2 camping sites, corn grinding mill, cement brick molding, 5 shops , Telecentres, tractors.
Natural	Increase in wild animal numbers, reduction in poaching, reduction in wild resources gathering, emergence of wildlife management areas -controlled hunting areas (CHAs), growing appreciation of the value of natural resources, preservation of savannah landscape and biodiversity.
Cultural	Formation of 5traditional cultural dancing groups, curio shops, self-confidence gained & cultural identity, recognition of indigenous knowledge systems, natural appreciation of nature.
Physical	Livestock, plowing fields, Land tenure, 6 tractors procured with plowing equipment, corn grinding mill, 6 shops built, 6 tents and their accessories, phone shops, 5 community halls, 1 lodge, 2 camping sites, TeleCentres, Electricity grid lines, tarmac road, 5 elementary schools, 1 junior high school, 5 clinics, 1 police station

In order to participate in tourism, the CECT had to organize itself. In an endeavor to participate in tourism, the community formed a CBO; the CECT, a community

decision making body. CECT is run by a board of trustees elected from the five member villages. Before CECT, Village Development Committees (VDCs) and chiefs were responsible for all natural resources issues in the villages, a responsibility since taken over by CECT. CECT guided by the development of a constitution, spells out how wildlife quota tender processes are conducted, how proceeds from tourism are distributed, and defines the role of members of board. Through the constitution, CECT has enhanced community political capital and empowered the community to make decisions that were difficult to make before.

In terms of social capital, CECT promotes social cohesion, trust, partnerships and networking among its village members, private safari companies, donors, NGOs, and government departments. In realizing the importance of social organization, farmers in the five villages formed village farmers associations (VFAs); whose role is to discuss livestock-wildlife conflicts and related issues with the Departments of Animal Production, Crop Production and DWNP; this has enhanced the compensation process for crops and livestock destruction by wild animals. VFAs have also resulted in the adoption of agricultural management strategies that lessen farmers-wildlife conflicts; include kraaling livestock at night, avoiding grazing rangelands near the park and creating wildlife corridors when fencing plowing fields.

Tourism contributes to the community's financial capital by creating opportunities for self-employment through the formation of enterprises. Through grants obtained from CECT, some community members have started small businesses like handcraft making and traditional dance groups that promote community cultural capital.

A total of six handcraft making and five traditional dance groups were identified. Due to this, an increase in demand has occurred for locally produced goods and staged performance by tourists; giving the community an economic buffer by opening opportunities for locally produced goods and contributing to community livelihood enhancements.

Results also indicate the development of tourism in the CECT area has promoted infrastructural developments and services provision by the government to support the tourism industry and the community. These include the construction of a tarmac road connecting the five villages to Kasane and Namibia, the provision of electricity grid line, radio and mobile satellite receivers, five clinics, five elementary and one middle school, one post office, two agricultural extension offices and one police station.

Community participation in tourism led to the devolution of power over natural resource management, improving the community's political capital redefining misconceptions that local community derive insignificant benefits from PAs resources and that conservation efforts exclude communities. According to DWNP and DoT officials, the formation of CECT has brought CNP management closer to communities; the community is now regarded as a key stakeholder. Focus group discussants indicated that before participation in tourism, hostility instances between the DWNP and community members was very rife because the community felt denied access to their land, resources, and were being separated from the environment they have lived in for a long time. This was a result of lack of trust, consultation, networking and harmony between stakeholders. The lack of trust was not only between the government and

community, but within and among villages themselves. Community members reported each other to government agencies in cases for poaching and wildfires detonations; a situation interpreted as protest action by community members. As a result, some community members were considered whistle blowers, and the DWNP was accused of using 'divide and rule' tactics.

Participation in tourism led to a shift in thinking on conservation and development efforts. Highlighted legislative changes of significance include the Conservation Policy of 1989, National Tourism Policy (1990), Ecotourism Policy (2002) and the CBNRM Policy (2007), which call for community inclusion in conservation and development. These changes have benefited both the CNP and CECT community, for instance, the park manager indicated poaching and wildfires in the CNP area have gone down. Nevertheless, police records show that poaching is still taking place; however, recorded incidents are low (see Table 4).

Table 4. Poaching Statistics in CECT Locality from 2002 - 2012

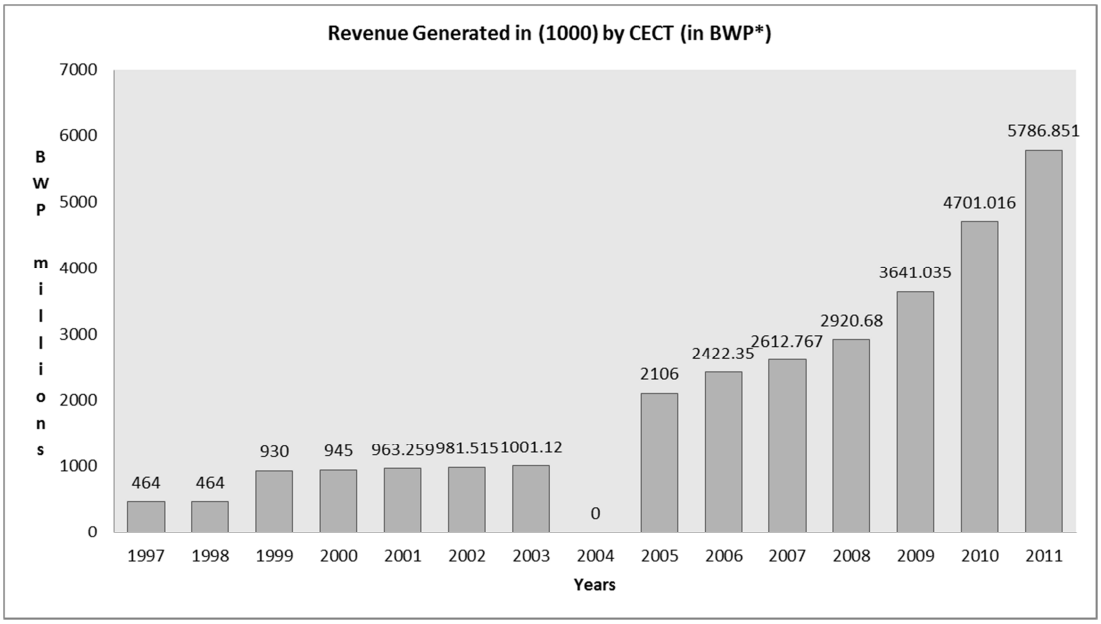
Offence	Number of cases
Hunting during closed season	02
Hunting without license	17
Hunting protected animal	03
Hunting partial protected game	05
Hunting and capturing game	01
Unlawful possession of government trophy	10
Total	38

Source: compiled from Kachikau Police Station Crime Registry from 2002 - 2012

According to the CECT chairperson, the low poaching statistics can probably be attributed to community participation in tourism which has brought government and the community together to promote conservation and development.

Due to a lack of human and financial capitals, the CECT community opted for a Joint Venture Agreement (JVA) and partnerships with private safari companies to compensate for these deficits. JVAs in this instance refers to "a business arrangement between a private company and a rural community for the commercial utilization of an area's natural resources; be it game, land or culture" (Gujadhur 2001; p.15). CECT has land tenure use and rights from the Department of Lands for CH1 and CH2, for hunting and photographic respectively. To this end, CECT has a contractual agreement and partnership with three private safari companies in running CH1, CH2, and Ngoma lodge. See Figure 3 in terms of money generated due to these agreements and partnerships. In addition, the community also gets a portion of game meat from each kill; an arrangement meant to mitigate poaching. JVAs and partnerships provide the community with revenue, employment and game meat/food. With assistance from donors such as USAID and AWF, CECT was able to contribute US$1.77 million towards the construction of Ngoma Lodge; the private investor contributed an equivalent amount. Through this partnership, employment for 36 people was created. The private partner provides the human capital, that is, business planning and operations, hospitality management, and marketing with the goal of transferring skills to community members so that they can eventually take over when the partnership ends.

An analysis of the community's financial capital through maps produced by both the older groups and youth reflect the CNP as the main agent that drives tourism. However, subsistence arable farming has also blossomed due to benefits from tourism; this may pose a threat that could further fuel existing human-wildlife conflicts. Results from in-depth discussions with DWNP official, indicate the introduction of tourism was meant to ultimately replace subsistence agriculture to encourage land use harmony with the park. However, communities perceive the dependency on tourism as being too risky, especially in the event that a shock or stress occurs. Over time, CECT has improved its financial capital (see figure 3). Four youth have benefited from this financial capital in the form of scholarships granted for tourism studies at colleges/universities in South Africa; the agreement is they will work for CECT upon completion of studies.



*US$1 = BWP 7.76 as at March 14, 2013

Figure 3. Revenue Generated by CECT from 1997 to 2011

Data indicates revenue generated has been increasing annually except in 2004, a drought year, when there was no wildlife quota allocation due to low wildlife numbers. Between the years 2005 to 2011, high revenue generation can be attributed to re-investment in physical assets outside tourism e.g. sales from shops, brick molding, tele-centers and tractors' services.

The future: beyond 2012

In mapping the future, different trajectories emerged, influenced by the current stock and flow of community capitals and driven by the adoption of tourism. The older participants' maps reflected more investments in physical asset such as plowing fields, electric fencing, and veterinary fencing to separate wildlife from livestock, the drilling of boreholes to water livestock, and investing in a butchery to provide a market for their cattle. The youth maps consisted of more investments in tourism facilities with more emphasis on employment creation. For instance, their maps reflected investments in more lodges, guest houses, guided tours, planned cultural festivals and guided elephant riding and tracking. As indicated earlier in the mapping of community assets maps before the introduction of tourism, youth maps and discussion did not reflect on the hostile environment brought by the eviction of community from the park. Youth experiences are different from the older age group that literally experiences the eviction from the park, thus the youth historical experiences offer a different perspective altogether from their parents. Almost all the youth witnessed the development of CECT and the changes CECT has brought to their livelihoods. Therefore the youth maps, discussions, and future

visions embraced wildlife tourism as one of the options community ought to adopt to diversify its livelihoods undertakings. With the youth representing the community's future investments, indications are that tourism represent a promising future and would facilitate positive linkages between the park and community as tourism is dependent on the park's resources for its to thrive, and for the community to invest in tourism would needs to guard against negative ailments that may thwart away the prospects of tourism. With most youth having attained better education than the old age group, the youth understand much better issues of park and tourism sustainability. On the one hand, most of youths see the dependence on wildlife quota tourism system – consumptive tourism being unsustainable in the long run; on the other hand, the old age group which has invested much on agriculture sees consumptive tourism as a remedy to help reduce wild animals that destroy the agricultural assets. For instance, one female youth, aged 22 years, of Mabele village said:

> "I am not forgetting where I come from; almost everyone in this village is dependent on agriculture like any other village in the Chobe district, but our village is unique that we have a choice to benefit from both agriculture and tourism, however our tourism practices of killing wild animals may not stay the same as long as we keep killing them for tourism, and when they destroy our cows and crops……" (A youth comment, 2012).

On a different perspective that counteracts the youth's perspective, the old age group fears that in the long run their villages may have to be relocated again to create way for the growth of the park if wild animal numbers keep increasing without being controlled through consumptive tourism. To support this perspective one elderly male farmer aged 66 years old, of Kavimba village said:

> "If we stop the killing of elephants that raids our crops every day is as good as to stop growing crops…who would want to grow crops for wild animals…..we should not forget where we come from……. Did I settle here by choice? Those who do not know would say yes. I would not be surprised one day when we are told to relocate to create more space for these elephants" (An elderly farmer's comment, 2012).

Of importance to note, by 2014 the CECT community plans to stop hunting tourism and replace it with photographic tourism. This planned development was confirmed through DWNP and DoT interviews, where it was confirmed that there has been a realization that shooting wild game purely for sport, and trophies is no longer perceived to be harmonious with national commitments to conserve and preserve local fauna and the long term growth of the tourism industry. The decision to stop hunting is theorized in the context of a growing concern about the decline in wildlife populations. The CECT community has accepted this development and has responded positively by investing in non-consumptive tourism establishments like camp sites and a lodge.

The use of financial gains through tourism to invest in some proposed physical assets such as the introduction of veterinary fences and electric fencing of plowing fields may not be consistent with conservation objectives of the park. The natural capital harnessed through tourism is transformed into physical assets such as the expansion of agriculture. If these suggested development were to be implemented this could introduce negative linkages or liabilities that would be financed by tourism.

The projected future of Chobe National Park and community livelihoods therefore needs to adopt adaptive management as an alternative to managing protected areas for sustainable tourism, informed by the stock and flow of community capitals. Adaptive

management requires ongoing monitoring supported with the selection of community capital indicators whose dynamics are responsible for the change of ecosystems, defining future conditions. Future produced community maps provide the utility to envision the future of CECT and Chobe National Park, thereby helping with the projection of the efficacy of adaptive management plans premised on the prospect of linking conservation and local livelihoods; preserving biodiversity whilst simultaneously improving community livelihoods.

A close monitoring of the community capital dynamics is essential as the future reality may be hard to evaluate because changes in one form of community capital affect other forms. For instance, the community may invest more in technology such as mechanized agriculture as a means to meet food production and security; this achievement however, may in turn pose a challenge to human-wildlife co-existence as it might accentuate conflicts. The same wildlife resources financing agriculture may be perceived as a liability to community livelihoods, therefore reinforcing negative linkages.

CECT's future participation in tourism indicates that the community will continue to be politically organized as they now have a voice to engage in dialogue with other stakeholders; be socially organized and communicate their views as a community, cooperate and network easily with NGOs and government departments; have reasonable financial assets to further invest in tourism projects, and investing in different physical assets that have diversified their financial generating activities.

Discussion: Healthy community and ecosystems

Healthy community and ecosystems is defined as one seeking a steady balance and synergies among the community capitals; reaching or failing to reach this state defines the sustainability status quo of a community and its ecosystems. Indications were that before the introduction of tourism, the CNP, endowed with natural capital in the form of fauna was not linked to other community capitals. The CNP and community were perceived as being independent systems (see Figure 4 part (a)); this kind of relationship constrained the linkages between CNP and the community. To protect the CNP from the community, decisions taken during the colonial and post-colonial period included abolishing traditional hunting, further accentuating the polarization of natural capital from the community.

PAs and community livelihoods linkages are based on many inter-dependencies of community capitals as illustrated in Figure 4. The relationship between the park management and local community before the commencement of tourism was delusional, with community capitals not being organized and mostly being isolated from each other. The lack of organization constrained the park and community relationship leading to unhealthy ecosystems. Though the community was well-endowed with natural capital in terms of wildlife, the 'asset flow' was technically "locked" and could not be transformed to benefit other forms of community capitals (see Figure 4, part (a)).

The wildlife resource stock accumulated, but did not benefit the community and therefore considered a nuisance for community livelihoods. To harness the natural capital, other capitals were enhanced (e.g. social and political) by investing resources and

time to form CECT, a recognized community institution; organizing the five villages' social cohesiveness (bonding, bridging, trust building and networking). As a social institution, CECT enhanced community political capital by becoming the community's voice and decision making body, leading to changes in CNP management style through the recognition of the community as a stakeholder and consequently, connecting natural capital stock to flow and influencing other forms of community capitals (see Figure 4 part (b).

The introduction of tourism provided a link between the CNP and community livelihoods. The natural capital was therefore wisely invested to transform other community capitals that were disproportionately organized. The abundant natural capital influences, and is influenced by the stock and flows of other capitals. Understanding this stock and/or flow is essential to practitioners to adapt to the changes brought about by the capitals dynamics that affect the linkages between PAs and community livelihoods; what Walters (1997) calls adaptive management.

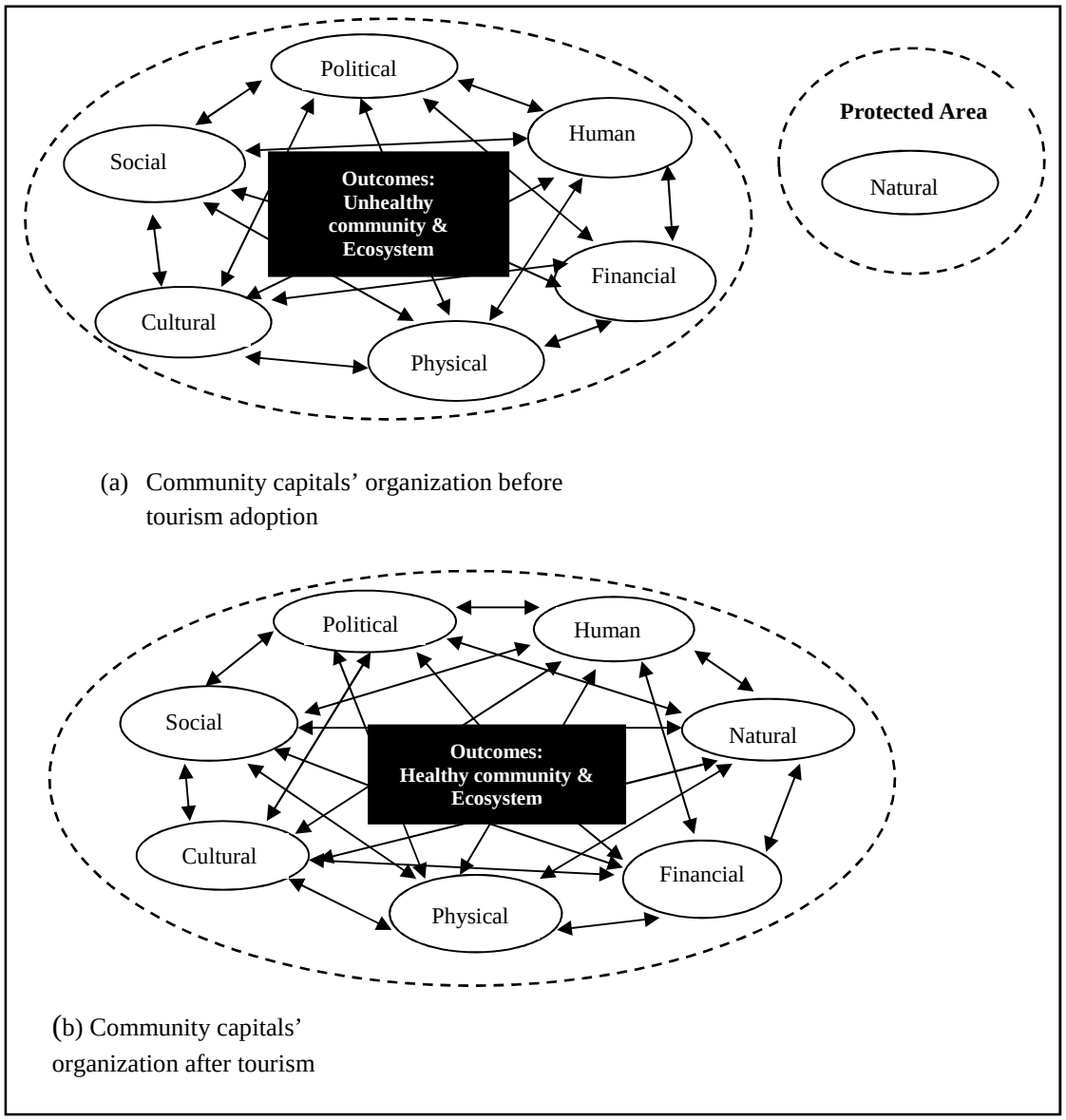


Figure 4. Community Capitals' Organization before and After the Adoption of Tourism

Sustainable tourism development calls for the involvement of local communities at destination areas as the custodians of the resources that attract tourists (Mbaiwa, 2011).

The realization of the unsustainable reliance on consumptive forms of tourism is germane for CECT. Thus, the change to diversify from a total reliance on wildlife hunting quotas to photographic tourism and by establishing a high end lodge in partnership with a private company is vital for sustainable development. The Ngoma lodge, a physical and/or financial asset links the CNP directly with the community and provides the community with an incentive to highly value and appreciate wildlife.

Community-private partnerships have promoted trust, brokering, bonding, employment and financial capital as the private company and community share financial asset generated. Since the inception of CECT, a total of BWP 29, 939, 539 (US$ 3, 858, 195) net profit was generated; the community decides independently what to use their financial capital for. This is in line with African Union's (2005) suggestion that decentralization of decision making as well as devolution of central budgets at a local level is crucial for a more horizontal approach to decision-making processes because it facilitates full participation and social mobilization. In this manner, Koutra and Edwards (2012) argue transparency and accountability increase and motivate local communities to play an active role in their own development.

Community-private joint venture partnerships are necessary and borne from the fact that the tourism business is highly competitive due to terms of trade which are generally dictated by international tourism markets. Human capital is therefore needed for marketing, administration, management and to a large extent, financial capital; all have to be integrated in a business model that can compete regionally. The whole idea of partnerships is to ultimately transfer business skills; the human capital that is lacking in

the community, with the anticipation that the community will ultimately graduate and run its own business enterprises. Therefore, the development of wildlife based tourism and conservation enterprises cannot be considered in the absence of the background on community livelihoods as the two are linked; one affects the other. For instance, the cattle boom is considered an extenuating factor that has the potential to negatively affect the park.

The money (financial asset) from tourism is used to buy more cattle (physical asset) and vaccines that prevent and cure cattle diseases, which resulted in further competition for limited space and forage with wild animals. On the one hand increased financial capital through the agro-based economy influences the park and community relationship. On the other hand, the reliance on tourism through a wildlife quota system has transformed the physical capital to financial capital that is also transformed to physical capital through buying assets like tractors. This has led to the commoditization of natural capital; this arrangement has the potential of causing diminishing effects on natural capital through consumptive tourism, and question the sustainability of the whole arrangement.

If the natural capital stock depreciates due to the effect of consumptive tourism, the park's conservation objective becomes unsustainable at the expense of enhanced community livelihoods as explained by community capitals stocks and flows.

This study shows some utility on how community tourism development can link PAs with community livelihoods. In line with Mbaiwa and Stronza (2010) and Mair and Laing (2013), this study proclaims that the shift from traditional livelihood activities to tourism-

influenced activities may not necessarily be a negative phenomenon caused by tourism; instead, it may show the dynamism of culture and socio- economics influenced by community capitals stocks and flows. Socio-economic, politico, and cultural elements are dynamic as is the case with protected areas. It may be stressed that a prerequisite for the improvement of community livelihoods is the fair distribution of economic benefits, which can be better realized if tourism is incorporated into other sectors of the economy (Koutra et al., 2012), in this case where money realized from tourism was used to procure tractors used to improve agriculture.

Findings from this study do not support Koutra et al. (2012) findings that tourism does not lead to development; but rather, it is development that leads to tourism. In this case study, before the introduction of tourism the community did not own tractors, a grinding mill, lodge, camp sites, village halls, brick molding workshop, and shops. But in essence, the capitalization of abundant natural capital on which nature-based tourism depends provides essential asset flows for other community capitals' beneficiation. The natural capital services, as agued by Kinzig (2011) is typically undervalued or taken for granted by governments, businesses and the public, and its importance may be recognized only upon its loss.

The urgent challenge today is to move from theory to real-world honing and implementation of sustainable tourism tools and approaches to resource decisions taken by individuals, communities, corporations, governments and other organizations (Chapin, 2010). Collectively, the CCF represent a promising shift towards a more inclusive,

integrated and effective set of strategies (Mace, Norris & Fitter, 2012) in assessing PAs conservation and development role.

As Jacobs' (2007) assertion, this study also found that parks and their communities have inflows and outflows, ups and downs. Therefore, it is upon park managers to understand that community-park systems can be wisely invested, and/or exchanged to create more community resources. At the same time, capital assets can also be squandered if the community does not use them wisely (Emery et al., 2006).

If wisely invested, for instance, income from tourism can be invested in procuring physical assets; tractors, and establishments like Ngoma lodge, camp sites, corn grinding mill, shops, funding cultural capital; traditional and handcraft groups, all created new forms of capitals that diversified the community revenue generating flows. These wise investments foster positive linkages between the park and community. Unwise investments could be interpreted as those that existed before the introduction of tourism, whereby wildlife wandered from the park and destroyed the community physical capital (crops and livestock) fostering negative community-park relationships.

Policy implications of this study are in line with Emery et al. (2004) findings that, if PAs and community assets are sustainably used, the outcomes are healthy ecosystems, vibrant community economies, and social equity, which are indications of park management and community empowerment. For both park management and the community it is important to have collective outcomes facilitated by the promotion of bonding among CECT village members to have one voice, networks, and trusts within and between communities and park management as emphasized by Koutra and Edwards

(2012). This process fosters a sense of belonging and ownership of resources, thus the role of social capital is important in connecting parks and communities. Where some form of community capitals are deficit, community planners and park managers should be aware that to bridge the capitals gap, investments should be sought externally from institutions like donor funding agencies, NGOs, and private sector. For instance, the organization of social capital, as Putnam, Leonardi, and Nanetti's (1993) findings support; enhances the benefits in physical and human capitals; it also augments the benefits of financial capital and the natural capital, because they are the outcomes of social synergies and networks. If communities are not organized socially; lack trust, cohesion, and networks to organize other forms of capital, this can prove futile as there will be no foundation of sense of community and cooperation.

As a departure from single-parameter-indicator research designs which may emphasize only one form of capital, for instance, the economic impacts of PAs tourism on community may not provide a comprehensive understanding of the role of PAs on community livelihoods as compared to a system thinking approach provided by the CCF. As the linkages between CNP and CECT community improves, community empowerment is also realized, but not only in terms of financial and physical assets gains; but a more holistic community empowerment framework needs to recognize the significance of all community capitals; social, political, financial, cultural, physical, human, and natural dimensions of community empowerment equally, rather than focusing on one or some of the dimensions in isolation. The results show that the CCF has the capability to go a step further and improves on Scheyvens (1999) ecotourism

framework that identifies only four dimensions of empowerment; social, economic, political and psychological dimensions. Nevertheless, Scheyvens (1999) framework's inclusion of the psychological empowerment makes it distinct from CCF as the dimension emphasizes self-esteem and pride in cultural traditions which is also a vital dimension of community empowerment. Scheyvens contends that self-esteem of many community members is enhanced because of outside recognition of the uniqueness and value of their culture, their natural resources and their traditional knowledge. This development increases confidence of community members and leads them to seek out further education, training opportunities, access to employment and cash leads to an increase in status for traditionally low-status sectors of society (Scheyvens). This case study revealed that communities build up their stock of one type of asset, and typically change their stock of, or access to other forms of capital.

The CECT community harnesses wildlife resources (natural capital) in order to finance education (human capital) substituting natural capital for human capital, which in turn yield employment opportunities that yield a steady stream of financial capital, which is then invested in physical assets such as lodges. Using only one parameter to assess conservation and the sustainability of community development could be interpreted as being integral to market-oriented eco-efficiency and eco-effectiveness seeking, rather than holistic environmental, cultural, socio-political and economic management (Mitchella, Wooliscrofta & Highamb, 2012). Assessments excluding other forms of capitals can only provide an incomplete understanding of linkages between PAs, tourism and community livelihoods. Research that targets only one parameter and tries to assess it

in isolation of others will not yield a holistic understanding of how PA tourism contributes to the well-being of communities and environmental conservation (Tao et al., 2009a). Thus, I argue that PAs premeditated readiness to adapt to new circumstances of adopting tourism as a new form of biodiversity use is critical and depends on the attention to multiple goals PAs want to serve. PAs focusing to serve a single objective, let say conservation, which can in itself be successful, and choose to ignore community development, can deplete other community capitals to the extent that the sustainability of the long-term goals suffer. This is in line with Emery et al.'s (2006) conclusion that research designs informed by the presence of all community capitals are geared for the collaboration and building democratic systems change critical for adaptive management, transparency and participation.

Chapter 5

AN ASSESSMENT OF WHETHER CHANGES IN COMMUNITY NEEDS HAVE ALTERED THE CHARACTER OF PROTECTED AREAS AND COMMUNITY LIVELIHOODS

This chapter builds on the previous chapter by assessing how changes in community capitals have transformed the linkages between protected areas, tourism and community livelihoods. This chapter endeavors to establish how enhancements in community capitals have influenced changes in community needs. The chapter begins with a review of literature focusing on the relationship between tourism and protected areas; the next section discusses the methods used, followed by the results section; management and policy implications follow, and finally, a summary of the major findings is presented.

Literature Review

The prominence of the tourism industry in the economies of many developing countries and the promises the industry presumably holds out for the future growth of these countries constitutes the central debate in favor of pursuing what may seem unconvincing tourism promotional strategies by developing governments and the tourism industry (Sreekumar & Parayil, 2002). Tourism has been mix labeled as the new economic driver, engine of the economy, peace maker, and reconciliatory tool, a new comparative advantage of the developing world, neo-colonialism imposer, a new form of exploitation, cultural intruder, environmental enemy or friendly, etc. In view of these postulations, it has now become normal to classify literature in tourism as falling into two

categories of ‘pro-tourism’ and ‘anti-tourism.’ The pro-tourism scholarly work highlights mostly the positives such as the enhancement of international relations through global cultural exchange, wealth creation in poor communities and destinations through tourists’ expenditure while the anti-tourism literature highlights problems at destination areas such as environmental degradation, income leakages, prostitution, erosion in traditional resource use, drug trafficking, and cultural erosion (Mbaiwa, 2011; Phillips, 2003; Sanderson, 2005; Sekhar, 2003).

However, the support for tourism by international institutions such as the Organization for Economic Cooperation and Development (OECD), the World Bank, United Nations and UNESCO have been detailed, in an ever-growing mass of reports and sponsored studies on social and economic potential of tourism for developing countries (Eadington & Redman, 1991). Therefore, it has been difficult for developing countries to resist the temptations of tourism (Grick, 1999), influenced largely by the large sums of money being spent by international organizations on tourism research and projects, thus, propelling its adoption.

Many developing countries are rich in nature-based resources, a comparative advantage they exploit and which they use as a justification to indulge and adopt nature-based tourism. However, at the same time as international organizations are calling for the adoption of tourism as a ‘vehicle’ for the economic development of the developing world, the existence of major environmental organizations such as the World Conservation Union (IUCN), the World Wide Fund for Nature (WWF) and the United Nations Environment Programme (UNEP), as well as a number of powerful

environmental lobbyists such as the Greenpeace, Friends of the Earth, bilateral agencies, the United Nations Development Programme (UNDP) and other NGOs from the developed world have also invested significant sums in environmental, conservation programs and projects in developing countries (Ghimire & Pimbert, 1997). This development of targeting the same resources by different international organizations and NGOs with different agendas is seen as inconsistent with both conservation and development as these groups interests may conflict. However, the common believe that environmental degradation and rural poverty co-exist (Nyaupane & Poudel, 2012) in the same settings, and that environmental rehabilitation is fundamental for poverty reduction led to the adoption, and promotion of tourism and conservation as a win-win approach.

Nonetheless, the relationships between poverty and environmental degradation are highly complex, as in many cases, the processes and structures that render local livelihoods vulnerable are responsible for environmental decline as well (Ghimire & Pimbert, 1997).

This chapter focuses on conservation in national parks as landmarks of biodiversity conservation. In conservation scholarship these are referred to as ‘protected areas’ (PAs). The prominence of the PAs system in the context of rural development is problematic because of its restricting conditions of resources use for local communities who live around and adjacent to them. In the beginning of their demarcation and development, protected areas were notoriously known for their extensive resource separation and economic hardships for rural communities (Sanderson, 2005). However, the realization that PAs as landscapes that have for a long time alienated communities

from the resources have the potential to host tourism and improve communities' livelihoods, have changed roles and now play a conservation and community development role. Moreover, they serve tourists by providing recreational activities and attractions.

The biodiversity conservation and development 'paradigm wars' fought in the 1970s and 1980s have somewhat calmed down and tourism development has gained some acceptance in the use of protected areas as places or spaces that host biodiversity resources. As PAs serve different users, they have been exposed to many transformations as they are subjected to growing marketization, competing multiple uses and users, changing rural economies, and technological modernization. Many of these changes may be directly linked to tourism development as a new comer in PAs' resources use. In PAs and tourism discourse, this issue has received secondary attention while the primary focus is still on the rural social security and the conservation of PAs; debates are still centered on the inclusion or exclusion of local communities on protected areas management. Nonetheless, conservation methods are changing rapidly, reacting to social and economic evolutions as well as advances in natural and social sciences. Efforts are now devoted to finding out well balanced international guidance for PAs policy and practices.

PAs acceptance of the tourism industry as its resource user requires adaptation to new situations and challenges that come with this conservation and development evolution nexus. This chapter is premised on the background that the adoption of tourism

by local communities living around PAs has the potential to lead to changes in community needs that may in turn have implications on PAs sustainability.

Protected Areas

PAs have deep roots in history; their modern story began in 1872 with the establishment of the Yellowstone National Park in Wyoming, USA (Fortin & Gagnon, 1999). This landmark was soon followed by the designation of other parks in the USA, and by the end of the last century other countries had also established protected areas; this is especially so for 'young' nations like Australia, New Zealand, Canada and South Africa (Holdgate & Phillips, 1999). Many other countries followed suit, especially among colonial territories (Sanderson, 2005). The International Union for Conservation of Nature and Natural Resources (IUCN) 2003 report states that there are 130,700 PAs sites globally, covering about 18.8 million km2 (IUCN, 2012), showing some growth in terms of terrestrial coverage.

The IUCN (1994) defines a protected area as: "an area of land or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (p. 7).This definition is broad and encompasses a wide variety of socio-cultural situations as they have evolved over many years and reflects that protected areas as places subject to special management, are diverse and ancient (Holdgate & Phillips, 1999). Protected areass are managed for different purposes, including the protection of species and ecosystems; safeguarding of landscapes, scenic and historic features; tourism and recreation; education, science or research; protection of watersheds and important

reserves of timber, fisheries and other biological resources; and increasingly for the sustainable use of natural resources by local people (Sanderson, 2005). To lessen the complexity of what protected areas are, the IUCN through its guidelines (IUCN, 1994) categorized protected area systems into six categories (see Table 5).

Table 5. IUCN Categories of Protected Areas

Categories		Attributes
I.	Strict Nature Reserve/Wilderness Area (a & b).	Protected area managed mainly for science or wilderness protection.
II.	National Park	Protected area managed mainly for ecosystem protection and recreation.
III.	Natural Monument	Protected area managed mainly for conservation of specific natural features.
IV.	Habitat/Species Management Area	Protected area managed mainly for conservation through management intervention.
V.	Protected Landscape/Seascape	Protected area managed mainly for landscape/seascape conservation and recreation.
VI.	Managed Resource Protected Area	Protected area managed mainly for the sustainable use of natural ecosystems.

Source: IUCN (2012)

The primary management objectives of protected areas differ considerably (Eagles, McCool & Haynes, 2002). The management authority for a given protected area varies according to the differing management objectives (Eagles, 2009). Most

conservationists celebrate the expansion of protected areas coverage and greater attention to biodiversity, however, they often disagree regarding how best to manage parks and reserves and, more essentially, what the underlying purpose of protected areas should be (Naughton-Treves, Holland & Brandon, 2005). About three decades ago, protected areas were largely the field of ecologists, forestry officials, and the occasional land-use planners, and were seen as untouchable and divorced from human interaction (Naughton-Treves et al., 2005). However, now, they are included in the international development arena as part of the Millennium Development Goals (UNDP, 2012).

Protected areas missions have broadened substantially and are expected to directly contribute to national developments and poverty reduction (Naughton-Treves et al. 2005)**.** For the purpose for this chapter, the focus is only on category II: National Parks - protected area managed mainly for ecosystem protection and recreation.

Protected Areas and Tourism

The relationship between protected areas and tourism is complex; at times, biodiversity conservation and tourism appear to be at harmony and at other times, they appear to be directly competitive (Nyaupane & Poudel, 2012). However, there has been a global call on linking the conservation of protected areas and community development through tourism development. This linkage, for instance, has been promoted through integrated conservation and development projects (ICDPs) (Sekhar, 2003), whose aim is to engender support for conservation among communities living in and adjacent to protected areas (Heinen, 1993). Conversely, some observers argue that success stories from ICDPs in developing countries are few (Sekhar, 2003; Berkes, 2004). Nevertheless,

the justification for tourism development has mainly been for economic reasons to sustain biodiversity conservation (Walpole & Goodwin, 2001). To communities living within or around protected areas, tourism can have many different forms of impacts on rural community livelihoods and environments; the relative importance of these impacts varies from one place to another.

Broadly, Ashley and Elliot (2003) emphasize that tourism impacts can be categorized as follows:

1) Financial, where the communities may earn income from waged jobs, sales of goods and services by entrepreneurs or informal sector traders, shares of collective community income;

2) Non-financial livelihood impacts such as improved or decreased access to infrastructure, communications, water supplies, health, education, security services;

3) Empowerment impacts, including opportunities for institutional development and participation in local economic decision making, and;

4) Environmental impacts, including conservation or degradation of natural resources on which tourism is dependent upon.

Available literature generally supports the view that communities will only support conservation only if the benefits of living with natural resources outweigh costs (Mbaiwa, 2011, Mbaiwa & Stronza, 2011). Several studies have concluded that costs associated with conservation such as wildlife depredation of crops and livestock have negative effects on local community attitudes, whilst benefits from conservation may have positive effects (Fiallo & Jacabson, 1995; Heinen, 1993; Mbaiwa, 2011; Walpole &

Goodwin, 2001). In view of these opposing viewpoints on the costs and benefits of conservation, it is important to assess how benefits from tourism may have an impact on changes in community needs.

Community Capitals and Changes in Community Needs

The lack of balance or failure for some of the community capitals to be at par with others may render the system unsustainable. Serageldin and Steer (1994) suggest that we should think of sustainable development in terms of patterns in the accumulation of, and substitution among different types of community capitals. Sustainability requires striking a balance between being economically viable, preserving the resilience of cultural integrity and social cohesion, and maintaining the status quo of the physical environment (Altman & Finlyson, 1993). A balance between the seven forms of capitals would lead to healthy ecosystems, vibrant regional economic, social equity and empowerment (Flora et al., 2006).

A postulation can be made that, participation in tourism affects community capitals; capital assets can be wisely invested, combined, and/or exchanged to create more community resources, but at the same time can also be squandered or accumulated if a community doesn't use resources realized through tourism wisely. Relating changes in community needs to community capital framework and as illustrated by Maslow's (1970) hierarchy of needs each level of needs is pre-potent to the next higher level: physiological needs, at the bottom of the hierarchy, needs to be fulfilled first followed by security, belongingness, esteem, and self-actualization.

The struggle to reach self-actualization by individuals and societies has seen many ideas, programs and processes developed and adapted to different settings (Kimberly & Rouse, 2004). Such programs and processes themselves have produced, shifted and/or modified these needs, thus, having implications on the dynamics of individual and societies' needs (Tesone, 2000). Nevertheless, changes in community needs can be evolutionary in nature – where they occur without external facilitation or planning - where groups of people or government programs are set out to modify segments of community life (Holmberg & Dobyns, 1962; Lippett, Watson & Bruce, 1958).

Community changes can also be facilitated by socio-cultural drift – whereby, for instance, engineers build roads or mine owners introduce labor saving machinery into the mines but not with the intention of changing community life as such (Sanders, 1958). Communities being exposed to new socio-economics situations over a period of time may be influenced by new economic patterns, and in turn community value systems may shift somewhat (Sanders). The emerging economic patterns or drifts are explained by community capitals. A combination of community capitals at play can facilitate or delay the drift to embrace new economic opportunities (Alkire, 2002).

In the past, small size and isolation combined to produce relatively homogeneous rural cultures, economies based on natural resources, and a strong sense of local identity (Flora et al., 2006). However, globalization, connectivity, and lifestyle changes accompanying shifting income distributions have altered the character of rural communities (Sen, 2009). Communication technologies have had an even greater effect

in reducing isolation (Wilbur, 2000). Emerging global telecommunications technologies and the internet especially, have fuelled a shift from viewing technology as a luxury to viewing it as a human need (Holme, 1997).

Every community, whether rural, isolated, or poor, has assets within it, and when these assets are invested to create new resources, they become capitals (Sen, 2009).When one type of capital is emphasized over all others, the other assets are decapitalized, and the economy, environment, or social equity can thus be compromised (Deneulin, 2008).

To understand how community capitals get transformed, first we have to understand the influence of the world economy which has brought some dramatic changes around the world. Not only are rural and urban areas alike being drawn into a world economy, but the character of the economy has also changed (Flora, Flora and Fey, 2004). For instance, money that businesses need to finance their operations can now be moved easily from one place to another. With these situations, many communities feel the impact of numerous features of dominant metropolitan areas that have an effect on the organization of their capitals (Sanders, 1958). For instance, the introduction of cash flow in rural areas that hosted traditional lifestyles transforms communities' value systems; land, timber, livestock, veld products and farm produce can now be converted into monetary value (Sherbinin, et. al., 2008).

Social values exert direct causative influence on land use and values are self-sufficient ecological forces in that they have real causative influence upon land use (Firey, 1947). The relationship between values and land use patterns are a function of economic interests that appear to be behind particular land-use patterns that stem

indirectly from large cultural systems (Firey, 1947). These interests, are not self-given ends in themselves, to view them as such is to consider "social systems as passive, compliant and disparate adapters" (Wall, 2002; p.22). The economic productivity of individual parcels of land is influenced by general cultural conditions, such as consumption patterns; making a parcel of land economically valuable at one time but lessening its value at another time (Upton et al., 2008).

Social conditions play an important part in determining patterns of land use, thus, social values and economic values should be considered to fully understand community change. The basic argument is that social and economic organizational changes wrought by macro processes and powerful forces of urbanization, industrialization, bureaucratization, and centralization influence rural autonomous communities in their decision-making and absorbs them into a mass society hence changing community needs and aligning them with those of powerful forces (Summers, 1986). These forces are accelerated by the process of globalization and there are slim chances for communities to resist these forces since they propel vertical integration (interdependence) of societies and destroy horizontal integration (autonomy) and render small rural communities powerless (Moxley, 1985).

It follows from this discussion that if we want to understand the relationship between protected areas, tourism and community livelihoods, we must first specify what its parts are in terms of its capitals. Community needs will always change due to influences from outside forces such as globalization. These changes come about because rural communities deserve to have access to resources required to meet their basic,

economic and safety needs and, where possible, upward social mobility. It is the transition from one level of upward community mobility to another that leads to changes in community needs (Ghimire et al., 1997). However, there is a need to understand changing community needs in relation to the stock and flow of community capitals so as to understand the relationship between protected areas, tourism and community livelihoods. Secondly, to assess sustainability, we have to discover the current and future community needs and the implications of these on the environment.

Assuming that we have identified and understood the dynamics of community needs, the stock and flow of capitals and the mechanism governing them, we have to discover how well-adapted the community is, as a system, in the context of protected areas settings.

Methods

Data Collection

Primary and secondary data were used. Primary data sources included individual interviews with key governmental officers, and household heads or individuals over 18 years old, where the household heads were not present. The interviews took place between the months of May and August 2012. This was an opportune time period within which to conduct the current study because this was the dry season and most participants were at their homes rather than at their plowing fields. The CECT office has a household list which was used to randomly pick household interviewees. Forty seven interviews were conducted with the number of participants guided by the attainment of theoretical saturation (Patton, 1990). Five of the forty-seven participants were governmental officials

(Departments of Police, Land Board, Wildlife, Tourism, Crop Production and Animal Production). Twenty seven of the participants were female and twenty were male. Participants' ages ranged between 19 and 72 years and possessed a non-formal to tertiary education. The duration of the interviews ranged from 40 to 80 minutes; all were conducted within the participants' households and pseudonyms names were used. With the exception of three individuals, all interviews were audio recorded, so in those three instances shorthand entries were performed.

The interviews were semi-structured to allow participants to thoroughly share their experiences and perceptions. The research approach adopted an interview technique referred to as funneling (Patton, 1990), whereby the interview process started with broad questions on the community's perceptions on protected areas, livelihoods and changes in community needs followed by more specific inquiries about particular positions. Some of the interview questions included: What does the Chobe National Park as a protected area represent to you? Describe any relationship you may have with the Chobe National Park. What are changes in your lifestyle that have been facilitated by your participating in tourism? To safeguard trustworthiness of data, procedures were undertaken to seek clarification and explanation during and immediately after the interview as recommended by Harrison, MacGibbon and Morton (2001).

Secondary data sources used include CECT and government reports.

Data Analysis

In terms of data management and analysis, the adopted analytical procedure was based on techniques proposed by extant interpretive studies (Miles & Huberman, 1994).

The first steps entailed transcribing the data and translating from *Setswana* to English language. The researcher is fluent in both languages. The analytic procedure predominantly entailed a holistic content perspective whereby the researcher explored the central meaning of participant narratives (Lieblich, Tuval-Mashiach, & Zilber, 1998). Each transcript was systematically analyzed with the goal of understanding participants' overall perception and contextual meanings. This process aided a better understanding of the community's construction of its changes in needs. Analytical notes and memoirs for each transcript were developed and emergent themes were documented using key words (Polkinghorne, 1988).

The second and subsequent steps involved a careful re-reading of the transcripts to code different segments of each transcript with a certain theme. This process of coding procedure was guided by Miles and Hubermanm (1994), which involves identification of words, phrases, sentences, or paragraphs that conveyed a particular message relating to community's perceptions on their changes in needs. All the forty-seven transcripts as well as field notes were coded thematically. This process resulted in the emergence of subthemes that have explanatory value (Kirby & Mckenna, 1989). For example, negative community behaviors towards Chobe National Park were accentuated by certain changes in community needs that were no longer consistence with conservation.

The last step involved clustering coded fragments into progeny groupings according to their respective descendant themes (Pritchard et. al., 2011). This process was executed because the interview process was regarded as a co-creation of outcome-based information whereby the interviewer and interviewees where both actively involved in

the co-production and co-authorship process (Holstein & Gubrium, 1995). It is acknowledged that the researcher's lived experiences, values, belief systems and social localities inform and influence this approach to this inquiry (Pritchard et. al., 2011). Nonetheless, auditing was made use of; that is, the researcher adopted a spirit of openness and documented each step taken in data collection and analysis (Lincoln & Guba, 1985) to counteract the researchers' positions and subjectivity.

Findings

In exploring changes in community needs that have the potential to alter the character of protected areas and community livelihoods, seven overarching themes emerged; the influence of changes in community capitals dynamics, transformation of agriculture, commodification and commercialization of some of community capitals, government funded infrastructural development, and emergence of income generation.

The Influence of Changes in Community Capitals Dynamics

The development of wildlife-based tourism in the community can be traced back to 1989 when a series of meetings between the community and the Department Wildlife and National Parks (DWNP) were held to discuss issues of human-wildlife conflicts and potential mitigations through the introduction of community wildlife-based tourism (CECT, 2003). Apart from DWNP, other key players that assisted to organize and convene the community to participate in wildlife management were NGOs, namely; Kalahari Conservation Society (KCS), Chobe Wildlife Trust (CWT) and the United States Agency for International Development (USAID) which recognized the use of

wildlife assets as a development option. This marked the formulation of wildlife utilization and tourism projects in Botswana, otherwise known as community-based natural resource management (CBNRM), a model adopted by many communities in southern Africa. In 1993 the five villages elected an Enclave Project Committee and formed the CECT. Assistance from outside the community was crucial in organizing the community social capital as the foundation for community participation in tourism. The natural capital abundance in the form of wildlife represented an asset that the community could harness and benefit from through participation in tourism.

Due to high wildlife numbers, especially of the so called 'problem animals'; elephants, buffalos, zebras, wild dogs, lions, hyenas and baboons in the Chobe National Park, human-wildlife conflicts increased as these species wandered beyond the park's boundaries, destroying the community's crops and livestock. To manage the high wildlife numbers, consumptive wildlife-based tourism in the form of wildlife quotas for the community was promoted; the community sells its quota to private safari hunting companies. The wildlife quota is determined by the population of the supposed 'problem animals'. A buffer zone was created to provide wildlife controlled hunting area (CHA) where the CECT community is engaged in wildlife management practices; CH1 and CH2 (see Figure 2) are subleased to private safari companies for wildlife hunting and photographic tourism respectively.

Wildlife from the Chobe National Park spills over and recharges wildlife numbers in CH1 and CH2 and enhances the quality of wildlife targeted for hunting and photographic, thus safari companies find it highly appealing to engage in business with

the CECT community. The whole idea of engaging the community in resources management of this nature was to integrate natural resources-based conservation and development planning at a community level in order to protect and to use them in a sustainable manner, and most importantly to promote the equitable sharing of the benefits accrued from them.

Results from household interviews indicate that before the CECT formation, the community was not organized to engage in wildlife utilization projects, hence, the community social and political capitals were not organized and strategically placed to benefit from the abundant wildlife resource; hence wildlife was viewed as a nuisance by community members due to its destruction of community crops and livestock.

The formation of the institution (CECT) was motivated by the availability of local natural capital abundance in the form of flora and fauna. This place-based focus allowed the community to become organized and to devise strategies that best made use of available assets, transforming human-wildlife conflicts into opportunities for improving community livelihoods and biodiversity conservation. Results also indicate that CECT was initiated to mobilize community members to work together to find solutions for human-wildlife problems. The 10 members of the board are elected from the five villages while the DWNP and NGOs provided technical and coaching assistance on management issues, encouraging community- private collaboration, to encourage networking and collaboration with private tourism companies. This process enhanced the community's social capital. Training workshops were also organized to build community capitals in areas that showed some deficits. DWNP provided technical assistance on wildlife and

conservation, in line with national policies, while the Department of Tourism (DoT) helped with sustainable tourism product development, and Botswana Tourism Organization (BTO) provided assistance on marketing; packaging, positioning and branding of the wildlife quota and photography. This collaboration enhanced networking and partnerships in biodiversity conservation and community development.

In realizing the difficulties in managing natural resources, CECT developed a constitution which guides the board in decision-making processes and day to day management of the institution. The constitution improved the community's natural resources management and decision making process, improving the community's political capital. To further strengthen the management of controlled hunting areas, through financial assistance from USAID and African Wildlife Foundation (AWF), CECT developed a Land–Use and Management Plan for the buffer zone (CECT, 2003). This development enhanced the CECT's political capital, enabling them to execute resource management decisions through the guidance of the land–use document. This development created an open dialogue between CECT and government and promoted the devolution of authority over wildlife back to the villages.

Through participation in tourism, the community has made substantial revenue generation (see Table 3). The revenue generated boost the community's financial capital, which has been further reinvested in building the community's physical assets, for example, the construction of Ngoma Lodge, 2 camp sites, 5 shops, a grind milling, 5 telephone kiosks, and brick molding workshop. This has promoted the diversification of income and employment opportunities, supplementing subsistence farming.

Results indicate that the expanded financial capital accrued from the investments has helped the community to hire professionals (the CECT manager, accountant and program officer) to enhance the community's human capital, a necessity for its entrepreneurial and business growth. The stock from the financial capital funds local activities that support the cultural capital, for instance, five local cultural dance groups have been supported financially and have been able to buy dancing regalia and related assortments. Six groups engaged in handcrafts production have also benefited from CECT financial resources. The traditional dance and handcraft groups promote the cultural self-confidence and identity of the CECT community. The financial capital from tourism has therefore, boosted the preservation and transmission of cultural traits and traditions, the conservation and sustainable management of natural resources, safeguarding of community heritage and revitalizing the local culture and crafts, with traditional dances portraying the community's relationship with its environment.

The presences of tourists who have now become clients to staged performances have restored the *Basubiya'*s cultural capital. The handcrafts and staged performances have aided the community's appreciation of its culture. Community wildlife-based tourism has helped the CECT community to realize the financial importance of the Chobe National Park and has enthused a feeling of pride and conservation of the Chobe National Park biodiversity.

More broadly, results indicate that the involvement of community is imperative for the sustainable biodiversity conservation of the Chobe National Park and enhancements in community livelihoods. However, the mass production and changes in

artifacts (baskets) design, size, use, quality, time and length of production have changed due to tourist demands, and has led to the commercialization of the local culture.

For example, one female participant of Parakarungu village aged 51years, involved in basket production highlighted on the changes that have taken place in artifacts production when she said:

> "Now everyone wants to be engaged in basket weaving even those who do not know how to weave because everybody wants to sell to the tourists. My worry is the quality of the baskets that are being produced as they are of poor standard….. Nonetheless, some tourists just buy anything ……." (Basket-weaver, 2012).

Souvenirs and staged arts are produced to meet tourists' expectations and demands. Financial gains, facilitated by the tourism sector, have brought changes in community needs, opening the community to cultural commercialization.

The presence of tourists and the promise of more income have encouraged the proliferation of art craft groups and the formation of stalls along the roads, targeting mobile tourists. Due to changes in community needs, the acquisition and accumulation of money is given more priority than producing artifacts that serve cultural purposes. Artifacts are priced in US dollars rather than the local currency, an indication that the target market is international rather than local tourists. The commercialization of community cultural artifacts has some implication on the natural capital that supplies the community with souvenir materials because they are produced predominantly from selected vegetation.

From interviews it was determined that financial assets from tourism have facilitated the acquisition of 6 tractors, trailers and plowing equipment; improving arable

farming, further contributing to the community's physical capital. For instance, one respondent reflected on the importance of using financial gains from wildlife-based tourism when he said:

> "We might be not happy with the human-wildlife conflicts….. but, if we couldn't have participated in their management we would not be talking about the tractors they brought us today… we have so many old people who are incapable of using their hands or cows to plough due to old age, …..but today whether you are old or young, we are not worried about resources needed to plow, CECT brought us many tractors" (Interview with key informant, 2012).

The community's physical assets have also benefited from the government's provision of services such as electricity, a tarmac road, telephone lines, 5 elementary schools, 1 middle school, 5 clinics, 1 police station and two agricultural extension offices. These developments have improved the community's access to services, community livelihoods and biodiversity conservation beyond the Chobe National Park boundaries to the buffer zone, thereby increasing the area of the park.

Transformation of Agriculture

Results from interviews also indicate that the community practices flood plain cultivation, (known locally as *Molapo* (river) cultivation) along river flood plains following the flood recession around August and September, depending on how long the flood regime of the Chobe River persists. Backwater flooding from the Chobe is important for the maintenance of flood recession farming, where organic rich soils have been formed from flood plain peats. The predominant crop of choice for the community is maize with; cowpeas, spinach, melons, goads, pumpkins and millet being secondary.

The introduction of tractors has led to the mechanization of farming, transforming the agricultural landscape in terms of the total area plowed, yields and the number of farmers. Before, traditional farming methods were used to till the soil; leading to less hectares being plowed and low yield being harvested. Each village has a tractor with a trailer and plowing implements which include plows, harrows and row planters. Records from the Ministry of Agriculture's Department of Crop Production (DCP) (2012) indicate there have been changes in the size of land tilled and crop yields (see Table 6).

Table 6. Total Land Plowed and Crop Production Output from 2006 - 2012

Year	Area Plowed (ha)	Area Planted (ha)	Yield kg/ha	Beneficiaries	Area (ha) lost to wildlife damage	Area (ha) lost to flooding
2005/06	556.90	556.90	223.64	222	*	*
2006/07	869.97	869.97	272.00	231	*	11.31
2007/08	990.12	990.12	483.13	503	*	11.89
2008/09	1524.19	1524.19	262.33	580	446.56	57.84
2009/10	1800.69	1795.12	593.93	601	472.48	136.87
2010/11	1873.33	1788.47	638.98	654	497.19	188.22
2011/12	2131.88	2178.88	789.77	689	*	*

*Missing data

Source: Compiled from the Ministry of Agriculture, Chobe Crop Production Office (2012)

Between the year 2005/06 and 2011/12 (before and after the introduction of tractors), there is a difference of 1574.98 hectares of tilled land, indicating that tractors have had an impact on agriculture. During the same period, there was a difference of 556.13kg/ha in yields and a total difference of 467 community beneficiaries, indicating that the number of community beneficiaries and yields have increased over time.

The availability of tractors has motivated and facilitated the community engagement in more plowing. Moreover, results indicate that the introduction of mechanized farming also introduced row planting; a transition from traditional seed broadcasting, further transforming the community's arable farming practices. CECT subsidizes the use of the tractors to allow all members to have access to tractors' services. Household interviews also indicate that some household that had given up farming due to lack of draught power are now plowing due to the availability of tractors.

Contrary, results also indicate that increases in the plowing area have also increased human-wildlife conflicts. Table 6 shows that as the area plowed in hectares increases, the area destroyed by wildlife also increases, showing a relationship between the two. We can therefore conclude that an increase in land tilling has improved the community food security while at the same time aggravating human-wildlife conflicts.

Information on crop damage due to wildlife and flooding for the year 2011/12 was still being compiled by the DCP office during the data collection period, hence reflected as missing data in Table 6.

Community investments in agriculture were enhanced by investments in the physical capital. The acquisition of tractors and plowing fields has promoted developments in the agricultural sector positively contributing to the community's food security; however, this development has resulted in a dire need for more land for plowing. Even land not suitable for plowing is now being utilized, for instance, in 2008/09 to 2011/12 a total of 382.93 hectares of land that was plowed was flooded and the community lost its harvest (see Table 6).

Moreover, data from the Chobe Land Board provides a summary of land allocated to CECT community for different purposes since 2006 to 2011 (see Table 7). The table indicates that land allocations are on the increase, more importantly, land allocated for plowing has increased at a higher rate immediately after 2008 when tractors were introduced. Another interesting trend is the increase in land allocation for tourism purposes. Most plots allocated for tourism projects (lodges, camping sites, guests' houses and private cultural village sites) are however, not developed. Nonetheless, this is an indication that the community has embraced tourism businesses and future investments in tourism are on the offing. Land allocated for residential, commercial, civic and community plots are also on the rise.

In general, land use in the CECT area is increasing (see Tables 6 and 7). In future, as the technological advancement and population continues to increase, more land and other natural resources will be needed; therefore human-wildlife conflict are expected to increase as well.

Table 7. Land Allocation from 2006 - 2011

	Mabele				Kavimba				Kachikau				Parakarungu				
	Allocation per purpose				Allocation per purpose				Allocation per purpose				Allocation per purpose				
Year	Rs	Pl	Cc	To	Rs	Pl	To	Cc	Re	Pl	To	Cc	Rs	Pl	To	Cc	Total
2006	16	10	-	01	51	03	04	-	51	09	01	-	26	15	03	-	189
2007	37	26	02	02	49	02	02	-	18	63	02	-	14	11	03	-	231
2008	35	40	03	03	31	03	01	02	57	111	01	02	23	14	02	03	331
2009	21	37	02	02	10	49	03	02	39	66	02	01	27	26	01	02	292
2010	51	39	04	01	27	42	05	04	64	31	03	03	27	30	02	03	336
2011	62	43	05	03	12	41	05	03	33	37	03	04	66	33	03	03	356
Total	222	195	16	12	180	20	20	11	262	317	12	10	183	129	14	11	1735

Key: Rs – residential plot; Pl – plowing field Cc – commercial, civic & community To - Tourism

Source: Compiled from Chobe Land Board, Land Allocation Records and Registry (2012).

Allocated plowing fields measure 500 x 500 meters; residential plots measure 40 x 40 meters while commercial, civic, community and tourism plots are bigger than residential plots in size and sizes differ depending on the magnitude of the proposed project. While most plowing fields are located on the Chobe River flood plains, most tourism and residential plots are located along the river bank making it difficult for wild animals to access the river as wild animals' corridors are restrained, and even blocked. During the day the community attends to its plowing fields, however, at night wild animals destroy crops. To mitigate human- wildlife conflicts, the community has responded by fencing farmland. Interviews with the DWNP and DCP indicate that fencing does not only blocks wild animals' corridors, but wild animals get tangled by the fence and get hurt or killed in the process. However, it was determined from household interviews that elephants are not deterred by the fence, in fact they destroy it to gain access to both plowing fields and the river. This has fueled more human-wildlife conflict more so that the community is not satisfied with the government's compensation program. For those with the means, electric fences have been erected to stop the intrusions. Most household heads expressed a desire to have their plowing fields electrified, but the limiting factor is the means to do so.

However, as community social mobility improves, indications are that the community may afford to electrify plowing fields, thereby creating further negative impacts on the movement of wild animals. These results indicate that the community does not want to de-capitalize farming; instead it is investing more in the agricultural sector with funds gained from tourism. Pursuing the use of modern agriculture

technologies may poses a threat to biodiversity conservation and an endangerment to the same resources tourism intended to conserve.

The community, though rural, poor and isolated from mainstream urban and semi-urban areas, has assets within its environment; these assets have been invested to create new resources for the community. In turn these assets have contributed to the community's need to plow more land than before. The emphasis in crop production over all other assets may be detrimental to biodiversity conservation and may ultimately alter the local economy and/or environment.

Commodification and commercialization of some Community Capitals

Findings indicate that since there has been a gradual commodification of natural and cultural assets. The transformation of nature into a commodity started with the demarcation of land into hunting and photographic grounds earmarked as CH1 and CH2, an indication that is related to the enclosure of spaces and battling of control by guarding against other communities outside CECT who may want to benefit from the same resources. In the process the community has gained political and social capital by showing high natural resource control, domination, and power. The wildlife has also become a commodity sold to the highest bidding private safari company; this is not a sustainable option as it is consumptive in nature.

Some community members, especially farmers, are still resentful towards CECT and its conservation mandate because of wildlife intrusions and inadequate compensation policies. Wild animals are perceived as 'goods' that have a readily available market. This is no longer consistent with traditional systems where communities viewed wild animals

as part of their ecosystem. This development has the potential to gradually erode indigenous natural resources management systems. Findings also revealed diminishing wildlife and community co-existence due to the introduction of new institutions that now have the authority and legitimacy to control wildlife by selling it at competitive prices, in the process the community is motivated to accumulate more money to improve its livelihoods. The use of wildlife-based tourism as an effort to devolve authority over wildlife back to the local community in an attempt to reverse the historical separationist approaches has facilitated changes in community needs. The commoditization of cultural capital manifests itself with the rejuvenation and packaging of cultural events and festivals to attract tourists. This development has changed the cultural assemblage and the environment in which these performances take place; they can now be performed anytime and anywhere when the need arises.

In terms of community's socio-economic activities, the mechanization of agriculture has been accompanied by the commercialization of crop production. Though crop production is mainly at a subsistence level, indications are that the introduction of a feeding program for elementary school students by government has promoted small scale production of crops for commercial purposes. With the program, the government buys fresh farm produce (including fresh corn cobs, water melons, pumpkins and goads) from local farmers, with the aim of providing better nutrition for students (see Table 8). Considerable emphasis is increasingly being placed on the opportunities that schools provide; hence community surpluses are sold to the school market.

Table 8. Fresh Produce Sold to Elementary Schools from 2009 – 2012

Farm Produce	Units sold	Amount (in BWP)
Fresh corn	14,852	13,411.50
Watermelons	319	3,961.50
Goads	533	1,147.00
Total		18,520.00

Source: Compiled from the Ministry of Agriculture, Chobe Crop Production Office (2012).

Between the years 2009 and 2012 government spent BWP 18, 520.00, creating a considerable market that can motivate the community to plow more land to meet the government's demand. Results indicate that the community also sells farm produce to tourists (especially self-drives); government workers and lodges close to the community. It was observed that some community members had erected stalls (selling some farm produce and handcrafts) along the CECT villages – Kasane road. Income gained from selling farm produce contributes to rural development by providing a new source of income. Interviews with the DCP revealed that the community has been selling its surplus crops to the Botswana Agricultural Marketing Board (BAMB), however, transport costs to Kasane have proven to be a deterrent and unsustainable for the community, only a few could afford to take their produce to the market. Growing crops not only for subsistence consumption but to meet demands by the government and BAMB has facilitated changes in community needs; more crops are now grown to supply the demand, thereby attributing to the commercialization of agriculture.

According to the DCP, one potential threat to the Chobe National Park is the introduction of fertilizers through a government subsidized program called Integrated Support Programme for Arable Agriculture Development (ISPAAD). ISPAAD, whose objectives include increasing grain production, promoting food security at household and national levels, assists farmers with cluster fencing, provision of seeds and the provision of fertilizers. ISPAAD has not been adjusted to suit protected areas environments. The proliferation of fertilizer on the Chobe flood plains poses a threat to biodiversity conservation as the fertilizer can have an impact on the river water system. By subsidizing fertilizer costs, it is now easier for farmers to afford supplementary fertilizers that would have been difficult for them to afford. As shown in Table 9; 162.9 metric tonnes of fertilizer were used on 814.5 hectares of land. The total market cost of the fertilizer was BWP 597, 252.26, but due to the government subsidy, farmers only paid BWP 77, 971. 81.

Table 9. Total Area Planted, Fertilizer Used and Cost

Chobe District	Area Planted (ha)	Quantity of fertilizer used (Mt)	Total cost of fertilizer (BWP)	Fifty percent subsidy paid in (BWP)	Hectares covered by 50% subsidy
Subsistence farmers	2, 178.88	162.9	597, 252.26	77,971.81	814.5
Commercial farmers	20, 899.00				
Total	23, 077.88	162.9	597, 252.26	77,971.81	814.5

Source: compiled from the Ministry of Agriculture, Chobe Crop Production Office (2012)

ISPAAD promote cluster fencing, where a group of farmers with adjacent farms can be assisted to erect a shared perimeter fence. According to the DCP, cluster fencing is cheaper to construct and maintain because farmers share costs. However, in the study area cluster fencing has not yet commenced, but may commence at any time as agricultural extension officers are still in consultations with the community. For those with available land for farming, ISPAAD also provides free quality seeds that cover an area of 16 hectares to farmers; the aim being to increase yields. This development has increased the demand for land as everyone wants to benefit from the program, and more importantly, seeds are provided to only those who have proof of land available for cultivation.

Government Funded Infrastructural Development

Results from interviews with community members and DWNP officials indicate that tourism development coupled with the community's need to have better roads led to the construction of the road that connects the CECT villages, the Chobe National Park, Kasane and Namibia. This development has brought both positive and negative benefits to the park's conservation objectives and community livelihoods by facilitating access and reducing the community isolation. An observation was made that along the road there are pits where gravel was extracted, these are not only an eye sore but has permanently change drainage and vegetation cover. The extraction of gravel could have also had impacts on some plant communities.

Although outside the scope of this research, clearing the forest for road construction not only affects the vegetation cover but it also has negative impacts on the

fauna too. Most community members highlighted that many animals are killed on the road, even though the vehicle speed limit is 80km/h, however, there is no available data to substantiate this claim. DWNP officials however state that snakes, attracted to the road by the heat retained by the road during cold weather conditions, are the most affected species in the park as they get killed by over-speeding vehicles. Furthermore, the road has affected the behaviour patterns of scavenging birds, which now frequent the area around the road in search for a kill. Informal discussion with the police traffic department revealed that there are many hit-and-run incidents on the road; only motorists whose vehicles have been seriously damaged report incidents with police, only three human deaths have been reported after involved with elephants on the road. Speed traps cannot be set up in the park because it is not consistent with park regulations; people are not allowed out of their vehicles while in the park.

The transit road has made it difficult for park managers to control any vehicle activity in the park as some motorists pretend to be on transit to avoid paying park entrance fee, with some diverting from the transit road to dirt roads used for game drive.

On a positive note, the road has allowed subsistence farmers to transport their surplus produce to a larger commercial market and hence sell at a better price than before; and community members are able to buy cheaper goods which they may not have had access to. However, the road that passes through the park is open for only 12 hours a day (from 6am to 6pm) to meet the park's conservation objectives; this arrangement is viewed as being restrictive to community movement by some community members,

although individuals who may anticipate to use the road at night can still apply for late night pass permits from the DWNP.

Emergence of Income Generation

Income generation occurs at a community and household level. At a community level, income is derived from the wildlife hunting quota, photographic tourism, Ngoma lodge, camping sites, tractors, grinding mill, brick molding, telephone shops and general dealer stores. At a household level, community members get income/wages from employment within CECT and in tourism establishments in the region. The nature and scope of employment available in the CECT community as a result of tourism is closely related to income generation opportunities; the prevalence of cash-flow has contributed to changes in community needs. Records indicate that a total of 105 people are employed in tourism and related establishments (see Table 10).

Table 10. Tourism Employment in the CECT Locality

Sources of employment	Number employed
CECT Board members	10
CECT staff	36
Guides	15
Lodges	44
Total	105

Source: compiled from CECT community data base records (2012)

Although board members do not get a salary, they get a sitting allowance. The 36 community members employed work in CECT offices; some are tractor drivers, shop

assistants, telephone shop operators, brick molders, camp sites attendants and grinding mill attendants. During the hunting season 15 guides; 3 from each village are employed to accompany safari hunting operators to monitor hunting activities; making sure that companies abide by their contract agreement. Safari hunting companies also hire laborers to help during hunting. Ngoma and Muchenje lodges, located within CH1 employ 44 locals. A number of community members work in the tourism sector in places such as Kasane and the Okavango Delta. In all the five villages, the cash economy has led to changing housing structures from traditional housing; made of mud, poles, and grass to more modern housing made of cement bricks, corrugated iron sheets and windows. The switch to modern housing is attributed to money realized through tourism.

Household heads highlighted that restrictions imposed on the harvesting of certain resources such as poles and thatching grass within the buffer zone at certain times of the year and the need to continuously maintain the houses make, traditional houses expensive. Residents attribute the choice for modern housing to be greatly influenced by social class, the need to keep up with others and most importantly because households can now afford modern housing due to wages earned from the tourism sector. Besides, modern housing, other services sought by the community include electricity, water, sending children to schools, televisions, cars, radios, mobile phones and modern clothing. Households with no members employed in any formal employment reported that they engage in extensive farming to produce a surplus which they can sell in order to meet their needs.

Discussion

The community is ambitious to develop an industrial cattle sector since there is a market within the district. However, farmers cannot sell beyond their district because it has been declared a red zone due to the proliferation of the foot and mouth disease (FMD). Wildlife-based tourism in the Chobe district makes the district susceptible to outbreaks of FMD, hence cattle from the district cannot be sold to the European Union market, the major market for Botswana beef; they can only sell their cattle within the district; mainly to local butcheries.

The section of the Chobe River around the CECT community sometimes dries up leading to shortages in the supply of water for the cattle industry. Furthermore, the quality of grass around the river deteriorates during the dry season and good pastures become hard to find. During data collection the community was in consultation with the Department of Land Board and Water Utilities Corporation to discuss ways in which the community could drill water holes in cattle grazing areas. The other problem is that when the water in the river dries up the community cattle crosses to Namibia because the same watercourse in the river is used as a border line between Botswana and Namibia.

The community wants to drill boreholes away from the river and the villages. The proposed areas are however in close proximity to the Chobe National Park, and this could aggravate more human-wildlife conflicts as wild animals would severely compete with livestock for both forage and water. Some farmers proposed the erection of a fence between Botswana and Namibia because when their cattle cross over to Namibia, they get intercepted by the Department of Veterinary Service and are killed to prevent cattle trans-

boundary diseases. The proposed borehole drilling and fence contravene biodiversity conservation objectives. Community social capital has been strengthened and organized enabling farmers to engage with different stakeholders to discuss community issues ranging from tourism, conservation, arable and pastoral farming.

To ensure that farmers have a voice, all five villages have formed farmers' associations. Financial capital gained from wildlife-based tourism has created financial assets that the community wants to invest in agriculture by drilling boreholes and fencing their farms. Financial capital from tourism is used to meet community needs and to directly and indirectly emancipate the community socially, politically, financially, culturally, and physically, consequently resulting in both intended and unintended outcomes that may no longer be consistent with biodiversity conservation goals. This indicates that tourism can add to the vitality of community capitals in many ways.

The findings provide insight into the dynamics of biodiversity conservation, tourism and community livelihoods which are essential to planners in their quest to devise adaptability measures in protected areas as tourism destinations. The CCF articulates a new viewpoint from which to analyze holistic community changes. This case study suggests that participation in conservation efforts through consumptive wildlife-based tourism brings mixed results on biodiversity conservation and community livelihoods.

The enhancement of community capitals through tourism has brought changes in community needs. This change also defines community capitals stock and flows, defining the relationship of the Chobe National Park, tourism and community livelihoods.

Community lifestyles influenced by shifting income distributions have altered the character of rural communities, redefining their relationship with Chobe National Park.

The lack of a coherent management plan that incorporates the Chobe National Park and community as well as monitoring and evaluation tools for community involvement in tourism has the potential to upset the relationship between the Chobe National Park and CECT. Agricultural intensification, financed by funds from tourism facilitated the mechanization of farming and has necessitated the need for more plowing land and escalating the need to recover land appropriated for biodiversity conservation. The crop flooding frequency rate is now higher than the period before the introduction of tractors, an indication that crop farming is colonizing land that is vulnerable to flooding. Furthermore, tilled land after the procurement of tractors is increasing every plowing season, resulting in more human-wildlife conflicts, indicating that wildlife pathways or corridors may diminish as more agriculture intensifies, threatening the coexistence between Chobe National Park and the community. Marginal land adjacent to the Chobe National Park, especially on the Chobe flood plains, is now earmarked by the community for agriculture.

Tourism has progressively opened the Chobe National Park and the CECT's natural capital to the outside world creating a challenge for the park to deal with the growing interest of outsiders. Tourism has introduced a model where natural resources are exchanged in an exploitative manner for financial and physical capital gain which in future may not resonate well with conservation undertakings. The value of financial capital introduces cash flows in a protected area set-up, supposedly protected from

external influences, and conversely exposing it to exploitation and domination from the outside. The introduction of cash flow in a rural and isolated area facilitates changes in community needs and triggers community transformation while at the same time modifying the community interaction with the ecosystem, producing environmental consequences which further need mitigation interventions.

Financial capital gained from tourism has resulted in the adoption of modern technology, better communication and transport services, spearheading the modernization process. Contrary to Mbaiwa's (2008, 2011) studies, that reveal that tourism development causes a collapse in subsistence crop and livestock farming, that is, tourism modernizes livelihoods options and lifestyles where the local socio-economic life is turned to be monetary driven (cash economy) like in western societies, this study results indicate that the community invested more money gained from tourism in agriculture than in conservation.

Generally, the study highlights that reliance on tourism development alone as the main source of livelihood brings to question the sustainability of tourism development in a rural setting. That is, and in line with Cassidy et al (2012) tourism is a risky livelihood option to rely upon as a single option because it can be affected by a global socio-economic and political instability. While tourism development can be credited for contributing to improved livelihoods at CECT, it can also be blamed for accelerating changes in community needs that threatens the co-existence relationship that exist between the community and Chobe National Park. In this regard, the sustainability of

PAs, tourism and community livelihoods in remote areas of developing countries in the long-term becomes questionable.

Changes in community needs are facilitated by the desire for a better and improved livelihood. The expansion and increased investments in agriculture and tourism reduce the natural capital at the expense of other forms of community capitals. In the long run, if the relationships between community capitals continue to grow in this manner, the imbalances may become more pronounced leading to an unhealthy ecosystem. All the forms of community capitals are equally important; therefore their balance is essential in a PA setting. The balance of community capitals will assist in avoiding unintended consequences. This study does not in any way imply communities should not assume upward social mobility, but points to issues associated with community empowerment through the decentralization and democratization of natural resources. The case study indicates the need for well-articulated and crafted policies as well as monitoring and evaluation devices that endeavor to shape community capitals to ensure the long term sustainability and use of PAs resources.

The results are in congruence with Phillips (2003) findings; that the investment in physical assets (like roads, tractors and lodges) has an influence on external forces propelled by modernization or globalization that have the mainstreaming effect on every part of the world leading to adaptation and standardization of human activities, consequently affecting the ecosystems on which PAs operate.

Greater use of market mechanisms on wildlife quota systems has accelerated changes in community needs, hence there is a need for PAs managers to devise ways to

negotiate the changing role and values communities attach to PAs and in the process accommodate these changes by adopting more business-like approaches. Phillips (2003) even suggests the development of business plans as part of PAs management tools. The inclusion of community participation in PAs management may be essential, but this leads to greater demands for biodiversity use that may not be consistent with conservation, resulting in conflicting interests that are not always easy to reconcile.

There is influence in the configuration, stock and flows between community capitals which define the direction of changes in community capitals and needs. For instance, the community transition from a subsistence consumer of natural resources to a producer threatens the co-existence between the community and the Chobe National Park. Participation in tourism inevitably transforms values and behaviors of the community. The question then becomes; how do you implement a viable comprehensive model that has the potential to enhance all forms of community capitals to attain healthy communities and ecosystem?

A greater challenge perhaps is the reconciliation between the effects of changing community needs and PAs biodiversity conservation objectives. However, the call for more system thinking approaches like the use of CCF should not supersedes other frameworks, but should endorse approaches that are system discerning by encapsulating; social, cultural, financial, political, natural, human, and physical aspects of the setting in defining the assets' stock and flow of a system. Levels of community livelihoods diversification are explained by the stock and flows of community capitals that have

inherent spatial and temporal variations determined by changes in community needs or socio-economic conditions.

The use of the CCF if combined with other frameworks may help to determine the adaptive capacity, or the vulnerability statuses of a community and PAs biodiversity, with sound precision. The relationship between community livelihoods and PAs biodiversity is not static but dynamic. Motsholapheko et al. (2012) attests that, the level and patterns of livelihood diversification demonstrate that the community adaptive capacity may be sufficient for current community livelihoods practices, but may be inadequate in future as community livelihoods and needs change.

A big challenge in adaptation planning is that community change and PAs biodiversity have been observed as distinct issues, unrelated to each other, rather than as one of the many problems facing community development and biodiversity conservation planners. Weaver (2002) states that the litmus test for a bona fide protected area tourism is not the absence of any resulting negative impacts, but rather the on-going intent by managers to pursue sustainability outcomes in concert with the best available knowledge, and to quickly and effectively address any negative impacts that inadvertently arise from core activities such as wildlife-based tourism activities.

Chapter 6

SPIRALING OF COMMUNITY CAPITALS: PROTECTED AREAS AND COMMUNITY WILDLIFE-BASED TOURISM

This chapter explores the potential for new kinds of protected area governance, moving away from the centralized government managed model, towards more shared and community based models. Specifically, the chapter assesses whether the introduction of community wildlife-based tourism in protected areas as a sustainable management tool has led to the spiraling up of community capitals. The chapter adopts a case study approach where the CECT community, living adjacent to Chobe National Park (IUCN category II) in Botswana provides the context of the study.

The chapter commences with reviewing literature, and proceeds to present the methods employed in data collection and analysis, followed by the results and discussions.

Literature review

Protected areas (PAs) signify the core of the world's political and economic commitment to conserve biodiversity and related cultural resources (CBD, 2008).The United Nations Environment Program's World Conservation Monitoring Centre (UNEP-WCMC) has recently published that there are more than 130,700 protected areas throughout the world; taken together, they cover more than 11.5% of the terrestrial surface of the earth (IUCN, 2012). These sites have been created by all countries of the world and are managed through special rules and for conservation objectives (Anderson, 2012). However, conservation methods are evolving, responding to social and economic

changes as well as advances in natural and social sciences (CBD, 2008). The evolving approaches in conservation have brought challenges on how best to incorporate the social and economic components practically (Chape, Blyth, Fish, Fox & Spalding, 2003). It is therefore, apparent that PAs require the adoption of new approaches and adaptation to new situations and challenges.

IUCN (1994) defines a 'protected area' as: "an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (p.7). Since the 1992 UN Conference on Environment and Development, approaches to conservation have had to harmonize with social needs and the development agenda, thus the very perception of a protected area has evolved (CBD, 2008).This evolution has now led to a recognition that the survival of PAs depend on the sustainable use of natural resources, the preservation of ecosystem services and integration with broader social development processes, along with the core role of biodiversity conservation (Rosendal & Andresen, 2011).

Starting from a focus on "nature" that basically excluded people, many protected area professionals today recognize natural resources, people and cultures as fundamentally inter linked (Bottazzi & Dao, 2013). Consequently, there is increasing evidence from around the world suggesting that protected areas are not only established as a key strategy for the conservation of nature and wildlife, but are also becoming important for addressing poverty and livelihood security (Borrini-Feyerabend, Kothari & Oviedo, 2004). One of the common features of many innovations in protected areas

management is the notion of participatory or community based governance; simply put, the focus is on greater involvement of local communities, with net benefits for both conservation and people (Thapa, 1998). However, the net benefits for involving people may be realized with costs. The costs and benefits for both protected areas and community livelihoods have been well acknowledged. Costs can vary from the displacement of local communities to crop damage by wildlife, competition for land use, restricted access to resources use and changes in land tenure (Coad, Campbell, Miles & Humphries, 2008; Andersson, 2012). Varied benefits can include direct revenue from environmental protection and tourism, the maintenance of ecosystem services such as watershed protection, reduction in poaching and fire detonation (Coad et al., 2008; Pickering, Bear & Hill, 2007). The dynamics of these costs and benefits relationship depends largely upon the protected areas' statuses and governance (Strickaland-Munro et al., 2010).

The net livelihood impacts of protected areas are not easy to assess, as there is a lack of standardized assessment methodologies (Coad et al., 2008). As a result of the different approaches employed on the governance of protected areas, effects on community livelihoods and biodiversity within and between protected areas may differ, and require further research to establish the outcome of these differing relationships. However, in broad terms, general patterns can be observed; the livelihood impacts protected areas have vary with protected areas' statuses, management styles and stakeholder compositions in governance (Tazim & Stronza, 2009). Strictly protected areas with top-down management styles can lead to major livelihood costs and

resentment between adjacent communities and protected areas management (Plummer & Fennell, 2009). Pro-active community participatory management of protected areas permitting the sustainable use of protected areas resources can provide tangible community and biodiversity benefits (Karanth, 2010) leading to win-win outcomes. Nevertheless, significant costs can still be sustained by communities if protected areas management and institutional capacity is lacking, and issues of governance and land tenure are not resolved (Coad et al., 2008).

Protected Areas Governance

For over a century, protected areas as government controlled sites for biodiversity conservation have been managed through centralized bureaucracies in ways that totally or largely excluded local communities (Kothari, 2008). However, during the 1980s and 1990s, as the number of protected areas increased, conservative understandings on economic development shifted profoundly, with important implications for conservation (Naughton-Treves et al., 2005). Protected areas co-management has become the most popular approach for reconciling land claims and biodiversity conservation in developing countries and beyond (Kepe, 2008). However, some scholars (Magome & Murombedzi 2003, Ramutsindela, 2004) argue that co-management has possibly represented a camouflage for the continuation of state hegemony regarding the national parks idea in post-colonialism Africa.

Conversely, protected areas might also generate new income by attracting tourism, inducing infrastructure development, or increasing the flows of economically significant environmental services (Costello & Polasky, 2008; Sims, 2010). Irrespective

of the history, rationale, and type of land reform, research shows that co-management or joint management between states and local communities has become the most popular approach for reconciling the goals of biodiversity conservation and land reform in specific geographical areas (Kepe, 2005; Magome & Murombedzi, 2003).

Community-based natural resources management oriented approaches are quickly becoming a common strategy recommended to address a variety of protected areas malfunctions (Bottazzi & Dao, 2013; Dura´n, Bray, Vela´zquez & Larraza´bal, 2011), community livelihoods among protected areas inhabitants (Nyaupane & Poudel, 2012; Rosendal & Andresen, 2011) and biodiversity conservation goals (Galaz et al., 2011; Bisaro, Hinkel, & Kranz, 2010). Although there is still ongoing developments/improvements on scientific knowledge about the particular conditions under which community-based governance is more likely to work, many scholars seem to agree on one constituent of effective community-based governance: strong local institutional arrangements (Araral, 2009; Andersson & Ostrom, 2008; Berkes, 2002), otherwise known as bottom-up-approaches. Nonetheless, the execution of effective community governance is marred with many challenges too, as suggested by many names, concepts, approaches, methods and designs such as; co-management, collaborative arrangements, stakeholder involvements, adaptive management, people-driven, and community-based management (Wamukota, Cinner & McClanahan, 2011) geared to involve communities in conservation at roots level.

The movement towards community-centered natural resources management is partly a response to the perceived failures of many centralized governance institutions in

the midst of growing competition for resources, resource scarcity, and efforts to reduce the rate of resource decline (Ban et al., 2013). Ban et al., (2013) further argue that many conservation plans remain unimplemented or unsuccessful, in part because of insufficient consideration of the social, political and cultural processes that influence conservation decisions, therefore the call for complementing social, political and cultural considerations with an integrated understanding of the ecology of a region can result in a more complete conservation approach.

Available literature indicates that the debate in conservation and development is now influenced by system thinking approaches (Grilo, 2011; Waylen, 2010, Wells, Samoilys, Makoloweka & Kalombo, 2010) and more recently is drawing from the concept of polycentric governance (Crona & Hubacek, 2010; Nagendra & Ostrom, 2012; Ostrom & Cox, 2010) in an effort to understand whether the activities of a diverse array of public and private agencies engaged in providing and producing public services is a potentially productive arrangement.

Protected areas and polycentric governance approach

Contemporary inquiry on the outcomes of diverse institutional arrangements for governing common-pool resources (CPRs) and public goods at multiple scales builds on classical economic theory while developing new theory to explain phenomena that do not fit in a dichotomous world of "the market" and "the state" (Ostrom, 2010). Due to the failure of conventional approaches to devise better natural resources management strategies, scholars are slowly shifting from positing simple systems to using more complex frameworks, theories, and models to understand the diversity of puzzles and

problems facing humans interacting in contemporary societies (Ostrom, 2012). A polycentric system is “one where many elements are capable of making mutual adjustments for ordering their relationships with one another within a general system of rules where each element acts with independence of other elements” (Ostrom 2008, p135.) A polycentric system exists when multiple public and private organizations at multiple scales jointly affect collective benefits and costs (Ostrom).

Drawing from the classical work of Ostrom, Tiebout, and Warren (1961), "‘polycentric’ connotes many institutions of decision making that are formally independent of each other. Whether they actually function independently, or instead constitute an interdependent system of relations, is an empirical question in particular cases, that, they may be said to function as a ‘system’"(p. 831). That is, settings for human-environment interactions are complex and finding ways to sustainably govern and manage these systems has become ever more difficult as they have become increasingly interlinked as the size of human populations and the level of economic development have both increased (Ostrom & Cox, 2010).

Moving forward in addressing this complexity, there is a need to overcome the tendencies of social science that builds, and relies on simplified models of complex systems in order to derive ideal types of governance, and an overreliance on a limited set of research methods to study social and environmental systems (Ostrom, 2010). Opschoor (2004) argues that we need analytical approaches that are consistent with a public sector that encourages human development at multiple levels as guided by the human-environment interactions complexity. The magnitude and profile of these

problems however differ dramatically, thus polycentricism may help solve collective-action problems by developing systems of governmental and nongovernmental organizations at multiple scales (Ostrom, 2008). Successful systems tend to be polycentric with small units nested in larger systems, however, not all such systems are successful, and we need to understand factors associated with failure as well as success (Ostrom), as they are connected through loop-feedback mechanisms that serve the system.

In view of this debate, the question that ought to be asked is how can the governance of environments and resources be devolved in a way that incorporates effective user participation and feedback learning? Nonetheless, other scholars such as Berkes (2010) are cautious that effective devolution takes time, requiring a shift in focus from a static concept of management to a dynamic concept of governance shaped by interactions; feedback learning and adaptation over time as they are require stakeholders collaborative management styles that promote and facilitate natural resources co-management governance.

Protected areas, collaborative and co-management governance approaches

Protected areas and tourism as land use sectors are evolving, and literature shows that collaborative and co-management approaches as resources governance are increasingly gaining momentum (see Armitage et al., 2009; Berkes, 2010; Goldstein 2009; Opschoor, 2004; Ostrom, 2010). Building trust through collaboration, institutional development, and social learning enhances efforts to foster ecosystem management and

resolve multi-scale society–environment dilemmas (Armitage et al., 2009) are emerging approaches aimed at addressing adaptive co-management dilemmas.

Co-management as a model affords indigenous and local peoples the right to collaboratively work together for a common goal, and achieve varying levels of community participation, thus co-management has the potential to achieve both biodiversity and cultural outcomes (Nursey-Bray & Rist, 2009). Implicit in all co-management programs is the conviction that all resource users are to be fairly involved and collaborate in any programs and that this involvement and cooperation should be on equal relationships (Plummer & Fennell, 2009).

Co-management could be a process of self- reflexive problem solving and should embed 'equitable partner- ships in management' that involve sharing power (Notzke, 1995). Iwasaki-Goodman (2005) points out that the implementation of effective co-management simulations depend instead on the incorporation of a number of elements including: "(i) shared responsibility; (ii) balanced power regimes; (iii) co- operation; (iv) participation; (v) discussion; (vi) education and sharing of information; (vii) communication; (viii) consensus; (ix) flexibility; and (x), the use of traditional ecological knowledge and scientific knowledge" (p. 118). The incorporation of the highlighted list of elements of effective collaboration and co-management is in line with Schultz, Duit and Folke (2011) who reason that the pragmatic reasons for stakeholder participation have gained importance with the growing perception that ecosystems and societies are interdependent, forming social-ecological systems that are complex, adaptive, and nested across scales.

In view of these scholarly works and transitions in resources management approaches, Walker et al., (2002) call for a step-wise collaborative approach to involve stakeholders in assessments and management of social-ecological systems and advance that "the chances of success are increased if the full range of stakeholders is engaged." (p.11). Wilshusen, Brechin, Fortwangler, and West (2002) argue that the interdependence between ecosystems and society implies that people-oriented management and conservation of ecosystems are more likely to succeed than "strict protectionism based on government-led, authoritarian practices" (p.31).

Based on the system thinking approaches' motivations discussed above, the contribution of this chapter is to analyze protected areas, tourism and community livelihoods in the context of a community capital framework as a dynamic framework in which community capitals stock and flow explained by a community's participation in tourism determines the direction of the spiraling of community capitals.

Protected Areas and Sustainable Development

In order to achieve their potential; both to conserve biodiversity and to assist in reducing poverty, protected areas should be integrated within a broad sustainable development planning agenda (IUCN, 2003). Urgent appeals to human rights concerns and equity have pushed a more people-centered paradigm for parks (Naughton-Treves, Holland & Brandon, 2005). Although globalization and neoliberal reforms have brought greater external funding to developing countries for protected areas management, these same reforms have also opened remote areas to logging, oil extraction, and mining (Bowles, Rosefeld, Sugal & Mittermeier, 1998). Conservationists thus struggle to build

alliances with communities neighboring protected areas while simultaneously defending parks from industrial-scale resource extraction and promoting sustainability (Naughton-Treves et al., 2005). There is a considerable debate regarding the relative weight of social and economic objectives versus biodiversity goals in protected areas management. Nonetheless, protected areas must be protected for the benefits of present and future generations, but the ways to ensure this protection are open to debate (Charnley, Fischer, Jones, 2007; Fifanou, Ousmane, Adégbidi & Brice, 2010).

Tourism planning in PAs entails addressing two partly competing and overlapping goals: preserving heritage and providing access. Resolving potential conflicts between these two goals is particularly challenging at the intersection of natural heritage and tourism development (McCool, 2009). Furthermore, not only are competing goals involved, but professional cultures (e.g. protected areas managers, community development planners, tourism operators and marketing specialists) and paradigms of management often conflict (McCool, 2009).

Even though protected areas are increasingly a popular strategy for managing biodiversity conservation, their contribution to livelihoods improvement and sustainable development remains contested (Mascia, Claus, & Naidoo, 2010). The sustainable level for fuel-wood collection, livestock grazing, and hunting by local populations is not immune from debate (DeFries, Karanth & Pareeth, 2010). Some case studies show that current levels of resources extraction are not sustainable (Davidar et al., 2007; Joshi & Singh, 2008; Mascia et al., 2010). Promoting alternative livelihoods options within and

around protected areas through tourism is an obvious management opportunity to reduce pressure on PAs, but such attempts have mixed results (Kiss, 2004).

Protected Areas and Tourism

IUCN convenes the World Parks Congress (WPC) every ten years, tasked with setting the future agenda for the world's protected areas and for reviewing past progress; the congress brings together key stakeholders in protected areas from around the world (Bushell & Eagles, 2007). During the last IUCN World Parks Congress, held in Durban, South Africa, in 2003, the congress celebrated an increase in the number of protected areas around the world (Rosendal et. al., 2011). At the same congress, tourism was a vital and recurring theme (Fifanou, Ousmane, Gauthier & Brice, 2011). Tourism based within and around protected areas is currently one of the future growth areas, particularly as leisure time, mobility, environmental awareness, the desire to visit pristine and relatively unspoiled landscape hosted by protected areas increase (Bushell & Eagles, 2007).

For tourism to be an effective conservation tool, increased understanding of its socio-ecological benefits and negative effects is required. When tourism is used to underpin conservation, it becomes an essential component of the processes needed to implement the Convention on Biodiversity and other agreements concerning biodiversity, cultural heritage and sustainable development (Steiner, 2002).Tourism, therefore can assist with the urgent need to build networks of protected areas rather than islands (Bushell & Eagles, 2007).

Of importance to note; developing countries, especially those in Africa, lead the way in aspects of sustainable tourism: networks, corridors, buffer zones and trans

boundary parks are being established and tourism is a crucial contributor, unlike under traditional developed nation systems where park administration is almost wholly government funded (Chape et al., 2003).

At the forefront of the conservation and development nexus, is the expectation that parks provide benefits to communities, in terms of health benefits, poverty alleviation, cultural and spiritual sustenance, education outcomes, as well as the provision of ecosystem services such as clean water and air (Bushell & Eagles, 2007). In anticipation of the next WPC, to be held in 2014 in Australia, research geared towards the impact of tourism on both protected areas and community livelihoods is imperative to help the congress review the past and set future agenda of protected areas in relation to tourism development.

Equally, more research is needed to inform park managers, community development planners, and decision and policy makers. As difficulties in the development and sustainable use of the earth's natural resources increases, research should play a key role in informing those who are bestowed with setting the agenda for the vitality and future growth of protected areas.

Community Capitals and tourism: Healthy Communities = Healthy Ecosystems

Communities of place and of interest have resources which can be exploited, stored (not available for use) or invested to create new resources (Flora, 2000). Regardless of how poor communities may seem to be, they have some resources within themselves that when used carefully could improve their well-being as well as the

environment on which they are situated (Flora et al., 2004). Healthy sustainable community conditions are reached when there is a balance among the community capitals (Flora, 2004). An imbalance in community capitals results when there is an emphasis in one form of capital over others, leading to a process where other forms of capitals are becoming decapitalized, and the economy, environment, or social equity can easily be compromised (Flora et al., 2004).

Flora (2004) emphasizes the importance of concurrent and balanced investments in community capitals in the accomplishment a healthy ecosystems, vibrant regional economies, social equity and community empowerment. A healthy community reinforces connections and relationships (social capital), respect for and inclusion of cultures (cultural capital), access to different levels of power (political capital), sustainable use and care of communal natural resources (natural capital), sustainable harnessing of natural resources to meet economic needs (financial capital), developments or investments in local skills and knowledge (human capital) and infrastructure (built capital). Well balanced community capitals reinforce healthy ecosystems. Healthy ecosystems, a vibrant regional economy, social equity and empowerment are the outcomes, and are based on the explicit linkages of human communities and natural ecosystems (Flora, 2004). Community capitals and natural systems are explicitly interdependent.

Methods

Qualitative methods were chosen to provide a detailed understanding of community experiences with protected area tourism. Qualitative methods are sufficient in

this case because more information is needed to determine the exact nature of the issue being investigated (Patton, 1990). Such investigations typically necessitate gathering intensive and/or extensive information from a purposively derived sample, and they involve interpretation of unstructured or semi structured data (Bezeley, 2007).

Conceptualizing the park and its local communities as a system is anticipated to provide rich descriptions of the impacts of tourism, by identifying interactions between system components: the Park and the community, which may in turn affect the possibilities for benefits from tourism.

The use of qualitative data collection methods informed by the community capital framework provides a novel way of capturing complexities and ensuring considerations of the multiple, interacting scales influencing community-level impacts are captured(Strickland-Munro et al., 2010). The research made use of both primary and secondary data sources. Primary data collection strategies used included interviews with household heads and key informants. Forty two household heads and 14 key informants were interviewed. Household heads comprised of 22 females and 20 males. Key informants included 4 village chiefs, 4 village development committees (VDC) chairpersons, 2 CECT board members, 1 photographic safari company owner, 1 Department of Wildlife and national Parks (DWNP), and 1 Department of Veterinary Services (DVS) official, and Chobe National Park manager. The interviewees' selection process was guided by purposeful sampling. Purposeful sampling was chosen to ensure the selection of information-rich cases whose study could illuminate the questions under study (Patton, 1990). Two languages were used; for those who could speak English,

interviews were conducted in English while for others, *Setswana* language (the local language) was used. A digital audio recorder was used to record the interviews.

Secondary sources of data used included journals, published books, unpublished reports, CECT management plans, park management reports on issues affecting the park and community, government policy documents and internet sources to get information on the Chobe National Park development; its historical settings and influence on community livelihoods. Audited CECT financial and assets reports, were also used.

Data Analysis

The data were transcribed from an audio recorder to provide a detailed record of the actual interaction between the interviewer and interviewees. Data in *Setswana* language were transcribed and translated to the English language. Data were stored and managed as a word document to facilitate analysis. A modified grounded theory analysis approach (Padgett, 2008) was employed to analyze data. It is vital to note that, due to the exploratory nature of this research, grounded theory methods were only used to analyze data and not to create theory, hence it is considered "modified" grounded theory analysis approach (Padgett, 2008). The transcripts were first read several times to get sense of the data and in the process a codebook was developed consisting of code categories which were defined to help to consistently and systematically code all transcripts. Coding is a process whereby the researcher makes judgments about the meanings of continuous blocks of text (Denzin & Lincon, 2000). As suggested by Danzin and Lincoln (2000), the fundamental task associated with coding are identifying themes, building codebooks, and marking texts. The code development process was guided by content analysis (Glasser &

Strauss, 1967); “open” coding guided the development of coding. The idea is to become grounded in the data and to allow understandings to emerge from the close study of texts (Glasser & Strauss, 1967).

Themes development followed, this was facilitated by the memo technique, a widely used method for recording relations among themes (Bernard, 2006). In memo writing one continually writes down his/her thoughts about what he/she is reading and these thoughts become information on which to keep track of data analysis progression (Bernard, 2006). The idea of becoming grounded in the transcripts texts allow understandings to emerge from the close studying of texts. Key-words-in-context and repeated word counts were used to help the researcher to identify general patterns and make comparisons across texts. In developing themes, Strauss and Corbin (1990) recommend the explicit use of actual phrases or words used by participants, a technique called in-vivo coding. Thereafter, focused coding was applied to winnow down the codes (Charmaz, 2006) and align group like codes into themes. After grouping like codes into a set of themes, the next step was to identify how themes were linked to each other, guided by the conceptual framework. Miles and Hurberman (1994) recommend this technique.

Strategies for rigor and to enhance trustworthiness were employed; data collection triangulation approaches were used. The researcher also made use of peer debriefing and support, from his mentor (PhD dissertation chair). Auditing was also made use of; the researcher adopted a spirit of openness and documented each step taken in data collection and analysis (Lincoln & Guba, 1985). This involved noting decisions made during data collection, coding, and analysis.

Findings

From Ad-hoc to Wildlife Co-management

Botswana's 39% of land surface has been set aside as protected areas, with wildlife conservation and tourism being the main land use (Mbaiwa, 2005). During British colonial rule, the land was used as wildlife sanctuaries, with rural communities being displaced to make way for wildlife resources (Mbaiwa, 2011). Results from household interviews indicate that the development of Chobe National Park marked the foundation of land use conflicts between CECT and government wildlife agencies. The community displayed their resentment by detonating fires and illegally hunting in the Chobe National Park; this behavior was perceived as being inconsistent with biodiversity conservation goals.

In response to these conflicts the government enacted policy instruments; the Wildlife Conservation Policy of 1986 (which introduced community wildlife management areas) and the Tourism Policy of 1990 (which facilitated the participation of communities in natural resources co-management). As a result of this new approach to natural resources management, in 1992, CECT was formed. To facilitate community participation in wildlife management, wildlife management areas (WMAs) were created between Chobe National Park and the community. WMAs were further subdivided into controlled hunting areas (CHAs) (see Figure 2) and leased to communities by the Chobe Land Board; the CECT community gets wildlife user rights for CH1 and CH2 for hunting and photographic tourism respectively. Furthermore, community participation in tourism was facilitated by the Ecotourism policy of 2002 and Community-based natural resource

management policy (CBNRM) of 2007. Through these policy guidelines, the commercial utilization of wildlife resources became a possible source of income generation for most communities living adjacent to protected areas.

The government through the DWNP works with CECT, and is responsible for allocating community wildlife quotas; the community has the jurisdiction on whether to hunt or sell the quota to safari hunting companies. Participation in wildlife-based tourism requires communities to comply with a number of government regulations; therefore, the community had to form recognized and organized institutions in order to participate. For instance, the CBNRM policy requires the formation of a community-based organization (CBO) and should have a constitution. For the community it is both costly and complicated to meet all the necessary government requirements by themselves due to deficits in many forms of capitals. Due to inadequate financial, human, social and political capitals when CECT started operating, assistance from the DWNP and NGOs such as Kalahari Conservation Society (KCS) and Chobe Wildlife Foundation (CWF) bridged the social and political capital by organizing and helping the community to form CECT (see Table 3).

DWNP and the NGOs offered technical assistance especially on boundaries for the buffer zone on which the community was to participate in wildlife management. Financial donors such as USAID and African Development Foundation (ADF) also assisted with finance to develop the constitution, land use and management plan and training the board and staff to enhance human capital needed to conduct the community business. According to the DWNP, time was spent in community sensitization and

mobilization before tourism activities could be fully implemented as cultural resistance (cultural capital) was high. Interviews, with the DWNP show that it took two years of discussions and negotiations for the CBO to be formed. Hostilities, mistrust and suspicions (social capital deficit) by the community reinforced by human-wildlife conflict and poor work relationships with the park staff were highlighted as extenuating factors attributed to poor relationships. Table 3, summarizes changes in community capitals by showing how capital stocks, deficits, flows and synergies within and among community capitals changed due to the adoption of tourism as a livelihood option and conservation tool.

The tourism industry requires business skills (human capital) which CECT did not possess. This capital deficit led to a spiraling down in the community's participation in tourism. In view of this deficit, capacity building (human capital) has been recognized as an important aspect for CECT to participate in tourism, mainly where the community becomes engaged in different activities for which they lack suitable skills and knowledge. To bridge this human capital deficit, results indicate the CECT board and staff received training support focused on governance, leadership skills, meeting skills, financial management, business management skills, and understanding joint ventures arrangement. All these training were made possible through the outsourcing of services of an international NGO; Institutional Reinforcement for Community Empowerment (IRCE), funded by USAID (Jones, 2002). The external funding and training services improved the financial and human capitals deficits the community had, and was geared towards improving community capitals stock (social, political, financial, and human).

To bridge the lack of social capital, partnerships with two tourism companies to undertake both hunting and photographic tourism were formed; these business partnerships have improved the community's financial capital (see Figure 3). Results indicate the revenue is reinvested into human capital through the hiring of trained and competent professionals to manage CECT. Revenue generated from tourism has also been invested in physical assets; lodge, camp sites, shops and tractors to diversify and generate more revenue as reflected in Figure 3. The government's realization of the community's role in conservation also helped with the provision of physical assets such as schools, clinics, and tarmac road that connects the community with the district headquarter, the town of Kasane. However, the community's decision in investing in the high end lodge still poses a challenge as the community does not have human capacity to manage it.

However, external assistance from AWF continues to support CECT in the post development of Ngoma Safari Lodge by providing business training and capacity building for community members in order to ensure long-term sustainability. In this way, AWF is supporting CECT to realize the benefits from commercially viable conservation enterprises, as well as to develop potential strategies to leverage the land for conservation rather than convert the land for other, often unsustainable uses. While Ngoma Safari Lodge offers tourists beautiful scenes at situ, spectacular game viewing, and a wide range of activities, the Chobe Enclave is receiving the benefits needed through this conservation enterprise to build a sustainable future for its communities.

Wildlife co-management has facilitated the accessibility of natural resources back to rural communities, given them power to regulate hunting and photographic tourism in collaboration with government. Financial benefits from tourism have boosted the community's finances, in the process spiraling up community capitals.

Increased Livelihoods and Diversification Dynamics

Results in profiling traditional livelihood activities that were carried out in the study area before the introduction of wildlife-based tourism indicate that key traditional livelihoods were crops and cattle farming, fishing, subsistence hunting and gathering, all dependent on natural capital. Crops and livestock farming were the main livelihood activities, supplemented by the hunting and gathering of wild animals and veld products. Men hunted while women collected berries, tubers, frogs, tortoises, ostrich eggs and insects. After the commencement of tourism livelihood activities changed to include the sale of wildlife quota, sub-leasing of the community's photographic concession area and employment in tourism establishments. Community wildlife projects also employ members of the community (see Table 10). Due to its close proximity to the Chobe National Park, CECT villages have very high densities of wild animals – natural capital, significantly increasing the value of its trophy hunting contract and its attractiveness for photographic safaris.

Wildlife-based tourism has supplemented traditional livelihoods and has diversified the community's livelihood options. Though not reported quantitatively indications are that there is reduction in the collection of veld products and poaching. To illustrate this point one interviewee said "we are now working…. CECT, lodges and

safari companies have employed us, we get paid, so, we do not have time to go hunting and collect veld products" (household interview, 2012). This comment indicates a positive development in the reduction of the exploitation of natural resources. Furthermore, indications are that reported poaching statistics in the CECT community are lower compared to areas that are not part to CECT (see Table 11). Chobe National Park is now home to the largest population of elephants in Africa, with populations increasing through migration and reproduction, from an estimated 78,000 in 1995 to 140,000 in 2003 (Golas, 2011).

Participation in tourism around Chobe National Park is a collective action that harmonizes the role of park and community livelihoods in resource use, building community capitals and enhancing the vitality of biodiversity. Collective action by CECT communities, the mutual trust that now exists between the community and government has resulted in low rates of reported illegal hunting, suggesting a positive relationship between tourism and Chobe National Park. These results imply that when local communities derive economic benefits from tourism, they put a higher economic value on natural resources and become obliged to conserve them.

Table 11. Poaching Related Offences from 2001 – 2012

Offence	Number of cases CECT Area	Number of cases Non CECT Area
Hunting during closed season	02	23
Hunting without license	17	34
Hunting protected animal	03	17
Hunting partial protected game	05	18
Hunting and capturing game	01	09
Unlawful possession of government trophy	10	21
Total	38	122

Source: compiled from Kachikau and Kasane Police stations' case registries

As more people get employed in tourism and related establishments, interviewees reported that they are able to buy more and better food; improving their food diet and security. However, results also indicate that the availability of cash has resulted in some community members' spending money on alcohol, interpreted as a negative impact of tourism. The safari company owner interviewed highlighted that tour guides sometimes come to work drunk. Two villages chiefs also highlighted there is a proliferation of traditional home brewing due to the demand of traditional beer, partly due to money people make from tourism.

Furthermore, in one of the villages, a popular modern liquor outlet operates, and over weekends it offers free barbecue and music to attract customers. A concern was

raised by one village development committee (VDC) member when he said “sometimes at the end of the month when people get their salaries we get disturbed and are unable to sleep due to the loud music played from the liquor restaurant” (Interview with VDC member, 2012).

Before tourism, results indicate the community used to rely heavily on gathering wild plants. A total of 17 wild plants species used for food, beverage, handcraft making and medicine purposes were reported (see Table 12 and 13). The increase in the use of plants for handcrafts is linked to the high production of handcrafts to meet tourists’ demands while the decrease in the use of plants gathered for food is linked to the availability of cash from tourism and related establishments and the lack of time as more time is spent at work. Mechanized farming, facilitated by tractors bought with money obtained from hunting quotas, has intensified farming and increased crop yields and land cultivated. Intensified agriculture has also led to the production of traditional home brews made from sorghum corn and not from wild plants sap as was previously the case.

Tourism has reinforced the use of certain species, used mainly for basket weaving and carvings (see Table 14), and reduced the reliance on certain species previously used as sources of food (see Table 13).These wild species vegetative parts were consumed as fruits, tubers, leaves, stems, roots and sap. Leafy vegetables formed part of a meal, while fruits, stems and tubers were consumed as snacks. Certain tree saps were mainly harvested for beverage production, while some plants were also reported to be harvested for medicinal purposes. The old generation believes more in these wild plants while the young generation is not keen to be associated much with them. The availability of health

facilities (clinics) in every CECT village has led to a reduction in the use of medicinal plants in favor of modern medicine dispensed by the clinics.

Table 12. Wildlife Plants Less Frequently used Due to the Influence of Tourism

Species	Family	Local name	Use
Cleome gynandra L.	Capparaceae	Rothwe	Food/vegetable
Amaranthus thunbergii Moq.	Amaranthaceae	Thepe	Food/vegetable
Corchorus olitorius L.	Malvaceae	Delele	Food/fruit
Azanza garckeana (F. Hoffm.) Exell & Hillc.	Malvaceae	Morojwa	Food/ fruit
Nymphaea nouchali Burm.f.	Nymphaceae	Tswii	Medicine
Ximenia americana L.	Ximeniaceae	Moretologa	Food/fruit & medicine
Hyphaene petersiana Klotzsch ex *Mart.*	Arecaceae	Mokolowane	Alcohol beverage
Sclerocarya birrea (A. Rich.) Hochst.	Anacardiaceae	Morula	Food/fruit & alcohol beverage
Grewia flava DC.	Malvaceae	Moretlwa	Food/fruit
Vangueriopsis lanciflora (Hiern.) Robyns ex R.D. Good	Rubiaceae	Mmupudu	Food/fruit
Unidentified sp.		Mokgothwane	Food/vegetable

Contrary to popular belief, plants used for handcraft making are generally on the increase, with women engaged in basket weaving reporting the long distances they now have to travel to harvest veld products. The increase in use of plants for handcraft is linked to the high production of handcrafts to meet the tourists' demands. Table 12, summarizes wild plants that have been reported to be used less while Table 13 shows plants whose use is on the rise due to the influence of tourism.

Table 13. Wild Plants Frequently used for Basket Weaving and Carvings

Species	Family	Local name	Use
Hyphaene petersiana Klotzsch ex *Mart.*	Arecaceae	Mokololwane	Basket weaving & carving/furniture
Grewia flavescens Juss.	Malvaceae	Mokgomphatha	Basket weaving
Berchemia discolor (Klotzsch) Hemsl.	Rhamnaceae	Motsentsela	Dye/colorant
Diospyros mespiliformis Hochst.ex A.DC.	Ebenaceae	Mokutsumo	Carving/furniture
Garcinia livingstonei T. Anderson	Cluisiaceae	Motsaodi	Carving/furniture
Ficus sycomorus L.	Moraceae	Mochaba	Carving/furniture

Although tourism has reinforced the use of certain species and reduced the reliance on others, it is important to note that at present there is very little use of the park's vegetation, the community only uses resources outside the park (buffer zone), nonetheless, the buffer zone is still part of the park ecosystem.

The availability of financial assets from tourism has also led to the adoption of modern housing, which forms part of the community's physical assets. This development is accentuated by the CECT's investments in brick molding and subsidizing the price of cement bricks. Household heads attributed their adoption of modern housing to the durability of the materials such as concrete, windows, and corrugated roofing iron sheets, instead of traditional huts made from mud, wood and thatching grass that are not durable. The construction of traditional houses relies entirely on the exploitation of natural resources, thus the shift to modern types of housing reduces dependence on the environment. However, interviews with household heads indicate there is still resistance to make a switch from traditional to modern housing, especially the elderly who believe

modern housing become very hot in summer and cold in winter. For example, one elderly woman of Kachikau village complained when she said:

> "Everybody in the village wants to have a modern house…..however, the modern house does not treat me well ….. I prefer our traditional mud houses, as with them, they become cool inside when it is hot outside and warm when it is cold…..the new houses are unbearable to live in when it is hot or cold" (An elderly woman comment, 2012).

It is important to note that most of the modern houses do not have ceilings and air conditioners to ensure temperature control.

Participation in tourism has facilitated investments in cultural capital; CECT provided funds to 6 traditional dance and handcraft making groups which sell their products to tourists who visit the community or are on transit to CH2 or the Okavango Delta. These cultural groups have heightened the community's sense of belonging and revived the production of traditional crafts and arts. Moreover, the community has regained its cultural identity, appreciation for indigenous knowledge systems and of nature. The adoption of tourism by CECT has diversified and increased community livelihoods options and reinforced the community's custodianship over its natural resources.

Fragile Wildlife-Livestock Co-existence

While on the one hand the adoption of tourism as a livelihood option has resulted in community livelihoods improvement; a process I call capital spiraling up, on the other, subsistence cattle farmers bear the brunt (spiraling down) of protecting wild animals for the tourism sector. Wildlife resources, in particular buffalo species, continue to frustrate

farmers in their quest to sell their cattle to the lucrative European Union (EU) market. The buffalo carries the foot and mouth disease (FMD) virus which is highly contagious and can easily be transmitted to cattle. This problem has brought some dilemma to both the community and government as to how to secure farmers livelihoods through the beef industry while at the same time safeguarding the tourism sector. Since the recognition of wildlife and tourism as land use sectors, Chobe district has one of the highest prevalence of FMD in the country. The district has been declared an FMD red zone. This means the district cannot sell its cattle to the EU beef market (Spierenburg & Wels, 2006) which calls for stringent measures meant to control and prevent diseases that are beef prone. For instance, the EU has an FMD beef "stamping-out policy", meaning if there is an outbreak of FMD in an area, all cattle in the area have to be eradicated. The policy further states that if vaccinations are used; beef from vaccinated animals cannot be exported for up to two years after vaccination, the EU does not accept FMD vaccinations as a sufficient control measure, but insists on fences to contain the disease in endemic areas (Taylor & Martin, 1987).

As a reaction of EU demands, the government passed the Diseases of Animals Act of 1977 that provides guidelines on the prevention and control of animal diseases, the regulation of imports and exports and the movement of animals and animal related products (Derah & Mokopasetso, 2005). Consequently, the country is divided into nineteen veterinary districts demarcated by crisscrossing fences, each containing one or more disease control zones (See Figure 5). The "stamping-out policy" has negative consequences for the CECT community as fencing has detrimental impacts on wildlife

which die as a result of their migratory paths being blocked. As a result of fencing, Owen Owens and Owens (1984) claim that in 1961, and later in 1964, as many as 80,000 wildebeest died in the area of the Kuke-Makalamabedi veterinary fence whereas Boone and Hobbs (2004) highlight that 10,000 hartebeest died against the Ghanzi fences between 1981 and 1987.

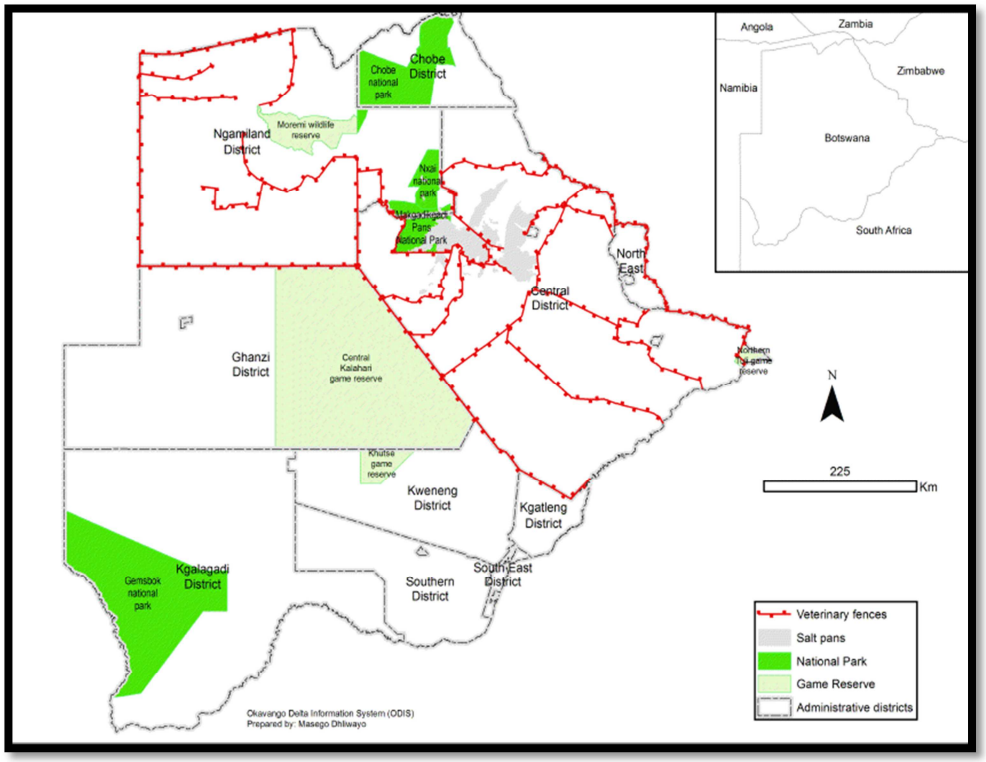


Figure 5. Veterinary Fences in Botswana

A number of scholars (Spierenburg & Wels 2006, Grootenhuis 2001, Selolwane 2001) acknowledge the negative consequences of rangeland fencing on wildlife numbers in Botswana. The FMD out-break and its policies upsurge farmers losses due to the disease itself killing cattle, eradication campaigns and restricting EU market access for

CECT subsistence farmers, contributing to the spiraling down of community capitals. Rearing cattle on communal land adjacent to parks is no longer feasible and makes livestock diseases spread easily. According to one farmer: "veterinary fences are like one big kraal that has facilitated the mixing of cattle and wild animals, we put a lot of effort in vaccinating our cattle, while wild animals are not, do you think we can ever win this battle?" The farmer's concern is that mixing cattle farming and wildlife is not a sustainable option for them. FMD policies have resulted in disruptions in cattle rearing, with more emphasis being placed on conservation efforts in national parks and surrounding environments, placing even more burden on CECT communities.

Wildlife-based tourism is meant to provide a mitigation measure and a strategy for economic empowerment as farmers cannot sell their beef beyond the district; these restrictions make the community's livelihoods vulnerable by denying opportunities to gain financial capital from their physical capital (cattle industry). The fencing policy at the same time negatively affects the natural capital; it decimates migrating populations of wildebeest and buffalo, among other species.

The guess is that the loss of the spectacular wildebeest migration as a form of tourist attraction is an advantage for Tanzania and Kenya as they market the migration as a tourism product, further disadvantaging the expansion of Botswana's tourism product. Grootenhuis (2001), notes this anomaly by highlighting that in Botswana, FMD control was the reason for stopping the world's most spectacular animal migrations by extending veterinary cordon fencing on a national scale and at massive expanses. Thousands of

wildlife was lost and is still being lost through migratory path pattern disturbance, entanglements and dehydration.

Nevertheless, there are, conflicting facts on the mortality estimates for wildebeest die-offs as a result of fencing. Owens and Owens (1984) study estimates the number to be 80,000 animals, whereas Williamson and Mbano (1988), and Mordi (1989) put the figure at 50,000 animals. Regardless of the differences in figures, both figures constitute a massive reduction in large herbivore biomass.

Results suggest that FMD fences restrict wildlife and cattle movements to confined spaces leading to increases in wildlife populations, loss of livestock, crops and the prevalence of FMD from buffaloes. In view of this development we can therefore argue that the erection of veterinary fences in Botswana indicates that, immediate economic benefits from sectors such as agricultural development are often implemented to the detriment of other sectors, such as wildlife and tourism management. This problem can partly be addressed by encouraging livestock, wildlife and tourism policies and programs that adhere to principles of sustainability. The sustainability approach means that none of these sectors (livestock, wildlife and tourism) should be given priority at the expense of others, as is the case with the erection of veterinary fences which currently have created fragile wildlife-livestock co-existent relationship.

The need for disease management and control is likely to increase given the predictions for a livestock revolution with global increased demand for beef. Interestingly, fences have long been associated with conventional protectionist approaches have now come to symbolize endangerment to wildlife and community

development. Household heads reported that the community now has to deal with negative consequences associated with high wildlife populations confined to small spaces.

Heightened Human-Wildlife Conflicts

Even though the community is realizing the benefits of participating in wildlife-based tourism, human-wildlife conflicts are rampant leading to a fragile wildlife-livestock co-existence created by the prevalence of FMD, veterinary fences and increased crop production. The mechanization of agriculture means more land is cultivated and restrictions on wildlife movement confined the wildlife to the park and buffer zones, making it easier for them to have access to community physical property, in the process heightening human-wildlife conflicts. The heightened human-wildlife conflicts have led to increased killings of 'problem animals' as sustainable mitigation measures are difficult to put in place to remedy the problem.

According to the Chobe National Park Problem Animal Control Unit (a unit of DWNP), there is collaboration with the CECT on problem animals, wild animals are physically discouraged or deterred from entering plowing fields and preying on community livestock by constant patrolling and sometimes trapped if they have become difficult to control. The community is allowed to kill these animals if they threaten people's lives or property; they can be killed if found foraging on crops, preying on livestock and attacking and killing people. Despite benefits from tourism, household heads assert that problem animals continue to be killed as coexistence is difficult when one's life or economic activities are jeopardized.

Interviews with the Chobe National Park Problem Animal Control Unit highlight that there is cooperation in the co-management of natural resources since the commencement of community-based tourism, however, there continue to experience biodiversity management questions. For instance, should wildlife be added or subtracted from the CECT wildlife quota if problem animals are killed for destroying community livestock or crops? Results indicate community members prefer the additions to their community quota, whereas government officials prefer subtractions from the quota as they feel the community needs to do something to deter wildlife from destroying property. The Safari Company in business partnership with CECT shares the community's view; that wildlife killed while destroying community property should be added to the quota, as a subtraction may render the wildlife hunting tourism business non-viable. Nevertheless, problem animals may have heightened the human-wildlife conflicts but the abundant wildlife has enabled the community to receive hunting quotas, providing a significant source of income for the community.

Environmental Education and Awareness

Environmental education and awareness (a form of human capital) has played a significant role in softening the community's reaction to human-wildlife conflicts. Environmental education and awareness is offered by different agencies including the DWNP's community extension and anti-poaching units, KCS and CWF. The CECT board receives training workshops made possible by NGOs such as USAID and AWF. This development has transformed earlier resentment and animosity to a better understanding of living with wildlife. CECT offers environmental education and

awareness to the community; the CECT management committee is perceived as having fostered greater social responsibility, and cohesion, and transforming the community, ensuring they work together to benefit from natural resources. Stronger social cohesion has facilitated community members to better address social obligations such as the formation of informal wildlife watch groups that deter wildlife that wanders into their plowing fields. These informal wildlife groups are popular among farmers whose plowing fields happen to be located in the same location. This new development facilitated by environmental education and awareness plays a role in reducing the community's vulnerability to crop destructions. All farmers in the study area keep their cattle in kraals at night to reduce predation by wildlife.

An observation was made that around public areas like clinics, kgotlas[1], community halls, shops, post offices and schools there are different environmental information posters and pamphlets about natural resources conservation, ways of reducing human-wildlife conflicts and tips on cattle husbandry on wildlife areas. Environmental education has made the community appreciate their natural resources heritage. One interviewee reflected this view by saying; "each species you see in our area is a product of the relationship we have with our environment….., but that does not mean we are all happy with this relationship as we are perpetually trying to find harmony in living with wildlife…, however, we may not behave like those who do not know what wildlife is".

[1] Public forum or meeting place where consultation or community issues are discussed, chaired by the village chief

Environmental education and awareness does not necessarily translate into reductions in human-wildlife conflicts but leads to a better understanding and cooperation (it increases human capital or skills and knowledge) in natural resource management and social obligations amongst stakeholders.

Discussion: Spiraling of Community Capitals

Although some may regard CECT community as being rural, poor and isolated; it is rich in natural resources. Through tourism, natural resources have been invested, leading to the creation of new resources and/or assets. In embracing tourism as a livelihood option, the community had to organize itself first; the community's social capital was not organized to the level that the adoption of tourism could have been of benefit. To overcome the social organization void of other community capitals, the community formed CECT, a new institution run by a board of trustees on behalf of the community. Interactions between the community, NGOs, donors and government representatives have resulted in greater government support on biodiversity conservation and development.

The ability of the local institution to enforce community conservation rules and form networks with related government agencies highlights the devolution of power to local communities. The dialogue and community decision making processes have helped strengthen local governance, improving both community social and political capitals. Prior to the formation of CECT, CH1 and CH2 were open-access areas; however, the community now has joint ownership of the legally designated wildlife management areas

and share in the wildlife resources spillover benefits from Chobe National Park by participating in wildlife-based tourism.

Whereas the villages used to compete with each other for the same resources, were resentful and poaching levels were high, resentments towards Chobe National Park have gone down as CECT has organized the community to guard against criminal activities, thus contributing to the spiraling up of the community's natural capital. Social capital is very important, and results from the study indicate it is necessary for this community to invest in it to reverse the community's capital downward spiral.

Even though indications are that social cohesion has improved due to participation in tourism is still a debatable issue because a community is not homogeneous, especially where certain socio-economic activities are always in conflict with tourism. For instance, there is perception among community members that human-wildlife conflicts have increased during the last decade. This perception is explained by the community capitals stock's accumulation and flows. For instance, accumulated financial capital gained from tourism is invested in physical assets such as tractors that are used to till large areas of land, in the process undermining wildlife corridors and creating land use conflicts between wildlife and agriculture further heightening human-wildlife conflicts.

Moreover, the government's agriculture, conservation and tourism policies also contribute to this dilemma. For instance, to continue benefiting from agriculture, conservation and tourism, the government introduced technological intervention measures through the introduction of veterinary fences (a form of built capital) which

were meant to reduce the transmission of diseases from wildlife to cattle but ultimately led to unintended biodiversity loss. Trade-offs between agriculture, conservation and tourism, have sustainability implications. The trade-offs should be decided and owned by people directly affected (bottom-up, rather than top-down approach). The dilemma is that the removal of fences in biodiversity conservation areas may lead to the spread in wildlife diseases from the red zone to non-affected areas (green zone), causing hardships for rural communities and thereby harming national beef exports, instigating a downward spiral (see Figure 6) in community livelihoods and the country's GDP.

The adoption of tourism as a form of livelihood strategy did not only bring benefits but also costs which have made the community vulnerable to the loss of some of its traditional livelihoods. Indications are that there is decline in traditional livelihoods such as hunting and gathering and changes in lifestyles such as the zoning of land previously used for communal grazing. The cattle industry is one pillar of the country's economy; therefore, the introduction of community wildlife-based tourism as a new form of land-use creates human-wildlife conflicts. Human-wildlife conflicts have increased in those places where boundaries have hardened between wild and domestic use of rangelands (Ferguson & Hanks, 2012). Fencing contributes to the decline of traditional livelihood activities, therefore intensifying the community's vulnerability, contributing to the spiraling down (see Figure 6) of community capitals.

Fencing aids the fragmentation of landscapes that surround protected areas and can result in impassable barriers to the dispersal of highly mobile species (Ferguson & Hanks, 2010). Fencing is seen as one method of controlling livestock diseases by directly

halting host/ pathogen traffic, but inevitably protected areas will then be seen as reservoirs of economically important diseases that risk a spill-over into economically struggling communities (Reisen, 2010).

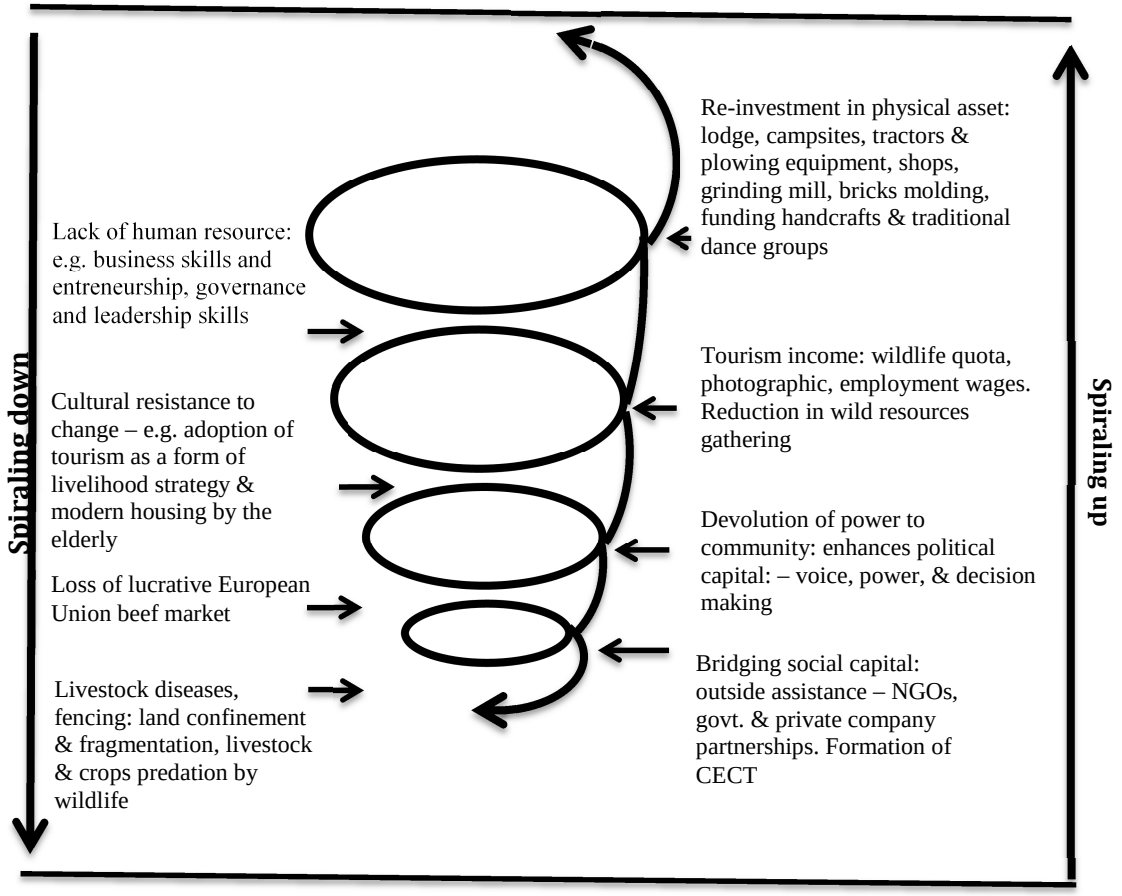


Figure 6. Spiraling up and Down of Community Capitals modified from Flora et al. (2006).

In contrast to Mbaiwa and Stronza (2010) assertion that many households have abandoned bigger crop fields because of wildlife damage to crops and the lack of interest in crop farming, especially by young people, this study's results indicate that investments

in agriculture is more pronounced in the CECT community than before. The community did not abandon agriculture for tourism, but adopted tourism as a livelihood option that complements agriculture. This is in conflict with Mbaiwa and Stronza's (2010) findings that tourism development has become the main livelihood, replacing agriculture. The CECT community has not abandoned agriculture (physical asset) for tourism; instead they use revenue from tourism to invest more in agriculture to diversify community livelihoods options. In order to engage in these socio-economic activities, the community mobilizes assets at its disposal, it is the combination of these assets that define the socio-economics of a community depending on the community's capability to harness available assets.

The CECT community did not liquidate biodiversity resources (natural assets) in order to finance agriculture and tourism developments (physical assets) by substituting natural capital for physical capital, instead they used their natural capital stock to create employment opportunities that in turn create a steady stream of financial capital, that is further used to secure different community assets. For instance, instead of heavily relying on the hunting and gathering wild resources, the community has increased its crop production.

Working in the tourism sector also ensures the community can get basic needs and improve its livelihoods. Furthermore, employment opportunities have reduced dependency on veld products harvesting contributing to the spiraling up of both natural capital and community livelihoods. However, tourism has resulted in the high consumption of selected plant species used for baskets weaving and carvings, produced

to meet tourists' demands. All these changes have come about due to the utilization of wildlife resources (natural asset) to improve other forms of assets; financial gain (economic asset), building modern houses, shops, tractors, grinding mill (physical asset). This supports Telfer's (2002) assertion that tourism development as a livelihood diversification tool often leads to a shift or diversification of traditional economic systems to those driven by cash. This community provides us with an example that indicates how money generated from tourism flows and contributes to the diversification of traditional livelihood activities by impacting different forms of community capitals.

Although, this exploration study does not quantify findings, quantitative methods are recommended as a further step to provide appraisals of the value of protected areas biodiversity to provide required underpinnings to leverage additional protected area's role in natural ecosystems that promote sustainable tourism and contribute to improvements in community livelihoods. Nonetheless, the difficulty with measurement does not lie in finding forms of capital within a community; it is in finding a way to measure how much capital is invested to affect a community's capacity (Fey et al., 2006). While the study tried to organize community elements under each form of capital and assess their change, there is a realization that capitals overlap; strong leadership can sometimes be classified as human, social or political capital; cultural capital can sometimes be seen as human or natural capital. Nevertheless, this is consistent with system thinking approach which avoids the discrete or disconnected analysis approach.

Moreover, and in line with Roseland's (2000) assertion that rather than being a "fixed thing", and looking for a "fixed solution", a sustainable community is continually

adjusting to meet the social, political, physical, cultural, natural, human and financial needs of its residents while preserving the environment's ability to support it. In systems approach, it is imperative that a sustainable model of development should be geared towards necessitating growth in multiple community capitals, by recognizing that one form of capital can be the enabling factor for others or vice versa.

Other scholars' examinations on the use of community wildlife-based tourism as a new form of community development and biodiversity conservation seem to appreciate the new development, however, with some criticisms. For example, Blackie (2006) argues that tourism has not achieved its objectives of conservation and rural development, instead it is a tool used by donor conservation agencies and governments of developed countries to perpetuate the global domination of developing countries; Twyman (2000) argues that community wildlife-based tourism in the Kalahari region is also not fully developed to yield significant benefits to residents. Despite these criticisms, community wildlife-based tourism is one approach that empowers the community through local participation (social capital), decision making (political capital), appreciation of nature (cultural capital) and economic benefits (financial capital) from tourism development, particularly in rich wildlife areas (natural capital) such as protected areas (Arntzen et al., 2003; Kgathi, Ngwenya, & Wilk, 2007; Mbaiwa, 2004).

CECT, a new community institution, can be interpreted as a new form of governance devolved to communities. Governance is part of the context of devolution in which CECT communities are no longer treated as subjects but participants in the governance of natural resources in the area. The new CECT natural resources governance

arrangement facilitated by participating in tourism underscores some processes of collaboration, partnership and community empowerment, in all areas of resource and environmental management. Devolution can be considered as a kind of governance reform, a mechanism to bring citizens, local groups and organizations into the policy and decision-making process (Berkes, 2010).

Participation in protected area tourism as a devolution of power to CECT has rewarded the community with the spiraling up community capitals reinforcing the social-ecological relationship with the Chobe National Park. CECT's investments in its social capital by collectively and collaboratively forming a community-based organization; CECT, the community's social capital lowers the transaction costs of working together and facilitates cooperation in co-management of natural resources. The resultant spiraling up of community' s capitals gives people incentives to invest in collective activities that build social cohesion, trust, and networking, ultimately building the community's confidence in resource management that lacked before. As in line with Goldstein (2009) reasoning; this is a dynamic process, as collaboration becomes widespread, new possibilities come into focus beyond solving the original problem.

Due to the devolution of power to CECT through community-based wildlife tourism management, the relationship between CECT and Chobe National Park has generated new income by attracting wildlife-based tourism, inducing infrastructure development and increasing the flows of economically significant environmental services revealed by the spiraling up of community capitals. The spiraling down of some community capitals are a response of a system explained as negative outcomes of

participation in tourism that need adaptive management remedy so as to systematically harmonize the flow of assets from one capital to another. Hence, an interdisciplinary approach as advanced by Mitchella et al. (2012) is needed to deal with interacting ecological and social systems and their feedbacks, as explained by the stock and flow of community capitals/assets in an integrated social-ecological system, to keep check of each community capital or assets availability, flow, direction of influence, and make efforts that community decisions in natural resources management and governance respond to environmental feedbacks.

However, there are challenges of governance in a world of complexity and uncertainty (Berkes, 2010), for example, different interests of CECT community as explained by community heterogeneity poses a challenge; farmers interests as well as farm production are not stagnant, and in the process may not be consistent with wildlife resources co-existence. This may be explained by more conservation costs incurred by farmers as wildlife wander and destroy their crops and livestock; as opposed to other members of the community whose interests might be different. Therefore, through tourism linkages, community collaborative management is key in bringing communities of interest together in pursuance of balancing conservation and development. Hence, successive spiral of learning-as-participation helps CECT to combine elements of adaptive management with elements of co-management in resource governance. Nevertheless, effective devolution and making co-management work takes time (Goldstein, 2009).

Chapter 7

CONCLUSION

The assessment of linkages between protected areas, tourism and community livelihoods using community asset mapping results are in line with the notions of ‘‘sustainable development’’ and ‘‘sustainable tourism’’ which call for a wider range of tourism dimensions to be included in new projects to justify the sustainability of investments for environmental and community development (Hawkins & Mann 2007).

Communities are part of protected areas and define the tourism product. Protected areas have critical duties and responsibilities to places they are selling their conservation achievements and tourism products to. However, at this point, and as reflected by available scholarship, critical issue arises. Although the positive effect of protected areas performance on the community is unquestionable, the relationship between protected areas and community livelihoods is debatable, conspicuous results being that a positive relationship between protected areas and community livelihoods performance imply a two-fold effect on community: one, social initiatives are inherently designed to enhance community livelihoods and therefore, their implementation should obviously have benefits for it; and two; benefits to the society would also derive from the increase in protected areas conservation performance obtained by linking protected areas and community livelihoods activities, or as commonly put, by developing and carrying out ‘‘best practices’’ (Bansal, 2006; Gond, Palazzo & Basu 2007).

This study results, although not much quantifiable, indicate that the introduction of tourism has linked Chobe National Park and community livelihoods; resulting in

positive outcomes not only in monetary terms, but with respect to community capitals enhancement. Given that tourism is a social, political, cultural, environmental and economic phenomenon that acts both as an engine of economic progress and social force or lack thereof, obtaining positive performance from Chobe National Park and community livelihoods activities imply that the initiative benefits both the community and Chobe National Park. It is important to note that through asset mapping exercise the results are indicative of the importance of understanding how governance of protected areas during colonialism era had shaped community capitals and empowerment. The Chobe National Park reflects the relations of power and privilege which have shaped CECT community's relationship with the park. The results show that during colonialism and immediately after post colonialism regimes, the CECT community was subjected to a double exclusion from CNP: exclusion as consumers of the park resources or visitors and in decision making or power processes concerning the park resources use and management. The park management was dominated by managers who were solely concerned with preserving the park ecosystem, to the neglect of human needs and social issues, thus contributing to community natural capital alienation from other community capitals. This scenario further exacerbates community capitals' spiraling down. Largely, parks reflect the worst aspects of colonial conservation (Cock & Fig, 2000). It is through community experiences guided by asset mapping that can help us to understand parks relationships, objectives, and roles with its constituents – community development and biodiversity conservation. For example, Cock and Fig (2000) contend that colonialism conservation totally neglected the archaeological records showing how some of the parks

had been the site of settled African mining and trading communities for hundreds of years. The prevalent colonial conservation philosophy of exclusion, alienation, and domination of indigenous peoples negatively affected communities' capitals and was against the principles of community-building.

If protected areas aim to survive and prosper, the best way is to take a long term view and understand that if it treats the community well, the community will return the favor. In view of this study's results, protected areas cannot survive without taking the responsibility for the welfare of all its constituents, including the livelihoods of the larger community within which it exists and operates. Protected areas are expected to go beyond the solo conservation oriented activities, but should also be geared towards boosting community livelihoods. This case study proves the assumption that well planned protected area tourism brings about both economic and non-economic rewards, thus empowering both local communities and protected area managers to effectively work together in natural resource management. Nonetheless, community interests' heterogeneity in terms of socio-economic activities brings in different community perceptions on its relationship with the CNP. For instance, on the one hand, farmers feel the brunt of property damage - crops and livestock destruction by wildlife; perceives the park negatively, while on the other hand, those who benefit from the park through tourism employment or sell their tourism products such as baskets to tourists have a positive perception about the park. So, empowerment through the development of CECT is not uniformly perceived and will always vary widely within and/or between communities. Thus, what might be perceived by some segments of the same community

as community empowerment is at the same time perceived as community disempowerment by some. Substantial variation in the presence of, and roles and levels of community livelihoods in community make it difficult to make a conclusive statement on whether tourism has brought community empowerment similarly across all community segments.

Nonetheless, inclusion and involvement of communities in the ownership or management of protected area tourism initiatives, builds greater appreciation and understanding of community needs, relationships with their environment, associations with overall sustainability and delivery of benefits, thus empowering communities. Empowerment is about "people taking control over their own lives; gaining the ability to do things, set their own agendas and change events in a way previously lacking" (Young, 1997, p.371). Participation in tourism at CECT is considered as a form of empowerment as illustrated by Sofield's (2003) assertion that, empowerment is about a shift in balance between the powerful and the powerless, between the dominant and the dependent. The CCF therefore helps us to assess community's empowerment in terms of community investment in its capital or assets, in this case, the community used the abundance natural capital to invest in capitals that were deficient before participation in tourism. The wildlife-based tourism contributed in shift of balance of power; the once powerless community in terms of social, political, and financial now enjoys social cohesion, making decisions through CECT, investing the financial capital in physical and cultural assets.

The results are in line with Strzelecka (2011) argument that community empowerment is a process characterized by the gradual increase of the local actors'

capability to control elements of their local environment; which the local society finds to be most significant for its wellbeing. It builds on interactions that influence participants' involvement in action toward local wellbeing (Aigner, Raymond & Smidt, 2002).

Nevertheless, as a cautionary standpoint, other scholars argue that, it does not always guarantee tangible livelihoods to the community, nor is active local participation in a tourism initiative a precondition for benefits reaching communities; benefits are at times secured at the expense of local initiative and control (Dwyer & Edwards, 2000; Kontogeorgopoulos, 2005; Li, 2006). In view of these perspectives and in relation to this study's findings, the difference might be the methodological implications adopted by this study; the use of the CCF and community asset mapping facilitated the assessment of the linkages between protected areas and community livelihoods using multi-dimensional indicators and non-linear causation rather than prioritizing and focusing only on one form of community capital as an indicator.

Most studies which focus on linear causation and on assessing only one or two forms of community capital as an indicator have the propensity to overlook how each form of capital stock is affected or affect other forms, as the relationship between the protected areas and communities evolve. Research that targets only one parameter and tries to assess it in isolation of others will not yield a holistic understanding of how tourism contributes to the well-being of communities and the environmental conservation at destination areas (Tao et al. (2009a).

Sustainable tourism requires striking a balance between being economically viable, preserving the resilience of cultural integrity and social cohesion, and maintaining

the status quo of the physical environment (Altman & Finlyson, 1993). If we carefully combine the concept of park conservation management with the community capital framework model, we may be close to sustainability, which can be attained through the implementation of best conservation and community development management practices. "Best practices" as demonstrated by this case study means taking concrete actions geared towards the conservation and responsible use of park resources, which in turn contribute to the social, political and cultural development of neighboring communities and profitability that is rooted in social responsibility.

Conversant stakeholders now appreciate each other's specific opportunities, difficulties, roles and duties, and to a greater degree can dismiss feelings of distrust emanating from the misconceptions of rules and procedures or impractical expectations. Therefore, as demonstrated by this study's findings the experiences of CECT community and various support agencies in the Chobe National Park provide a rich case from which to draw lessons that can assist in protected area conservation and community development.

In assessing whether changes in community needs have altered the character of protected areas and community livelihoods, overall indications are that community needs in a protected areas ecosystem highlight that the trickle-down effects of tourism have both positive and negative ecological impacts which do not only affect the community's natural capital but all forms of community capitals. Participation in tourism has brought some form of organization in community capitals with CECT networking, engaging and negotiating with different agencies to pursue the community's interest. At the same time,

CECT, in consultation with the general membership has become a community decision making body that represents the interests of the community, thus enhancing the community's political capital. From inception, political and social capital have been critical for CECT since involving locals is essential in the planning and implementation stages, ensuring that the community is actively involved.

One of the core elements of sustainable tourism development is societal development, which is a process and capacity to make decisions that consider the long-term economy, ecology and equity for all communities. Participation in tourism has facilitated the realization of financial capital which in this case is invested in human capital needed to run the institution. Furthermore, financial capital has been invested in the community's physical capital which was needed to boost agriculture. The accumulation of community capitals' stock and flows has resulted in changes in community needs; plowing has become mechanized, surpluses are sold locally and outside the community locality, biodiversity has become commoditized and human-wildlife conflicts abound.

The management of tourism and biodiversity can be difficult and requires finding a balance in resource use and economic benefits, something many tourism destinations with protected areas have to constantly face. Sustainable tourism practices do not provide a short term fix, however, the long term benefits are what should be kept in mind when developing strategies for protected areas tourism and biodiversity conservation plans. Protected areas tourism destination can differ in terms of their natural environments and community capitals' endowments, each potentially facing different adverse impacts

resulting from the role of tourism. In some destinations, natural environments motivate tourists to visit protected areas; therefore the environment on which tourism depends can be weakened by impacts from the sector, resulting in much larger economic issues, especially for those protected areas that have become completely reliant on the industry to maintain their conservation objectives. Protected areas and tourism need each other to serve each other's objective in a sustainable manner.

The CCF affords us the opportunity to think methodically about approaches and community projects, thus offering intuitions into additional indicators of success as well as potential areas of support. The CCF offers a mechanism for systematic assessment and is an appraisal process that looks at impacts beyond the project's obligations, but looks to the community and protected area system as a whole. Applying the CCF facilitated the mapping of the stock and flow outcomes of community capitals in relation to changes in community needs. Improved techniques for understanding planned and possibly unplanned consequences of involving devolutionary management styles need to be developed and understood by community planners, policy makers and protected areas managers.

This study has demonstrated that community wildlife-based tourism has played a critical role in the transformation of the traditional economy demonstrated by the spiraling up effect of community capitals. The stock accumulation and flow of capitals highlight the importance of the natural capital in driving the ongoing flow of capital assets toward an upward spiral of capitals. However, during the process, negative and unintended consequences that affect the upward spiral of capitals leads to the downward

spiral of some capitals, generating opposing or negative feedback effects. The use of the CCF approach informs and inspires researchers to think methodically about how tourism systematically contributes both to biodiversity conservation and community development. The role tourism plays and its impact are assessed by its ability to contribute or trigger a process that increases all community capitals' stocks and flows to initiate a spiraling up of community capitals. Results of this study indicate the spiraling up of community capitals' impacts the rural economy and has changed it from being predominantly dependent on hunting, gathering and agriculture, to a cash-driven economy. Tourism therefore is viewed as an incentive-based conservation tool that links the conservation of natural resources with rural development.

We can therefore conclude by making a basic supposition that; for a community to manage its natural resource base sustainably, it must place more emphasis on its community capital importance, to define how it will utilize its assets to directly benefit from protected area tourism. The CCF provides a model system thinking approach inherent in human, social, physical, financial, cultural, political, and natural capitals that need to be safeguarded and strengthened. Community capitals serve as the core for a community's development and when enhanced, buffer the community against risks and vulnerabilities, leading to healthy sustainable communities and healthy ecosystem. Protected areas, tourism and community livelihoods as explained by the stock and flow of community capitals are intertwined in functional and special relationships (Fey et. al, 2006). Community-based tourism generates monetary flows which when invested in

physical assets promote spatial flows of revenue within the community and encourage the accumulation (stock) of revenues in a locality otherwise devoid of economic growth.

Revenue accumulation also brings about transformation in other community capitals through community consumption, savings and investments in other form of capitals and triggers a series of new activities, businesses and services. Approaches that consider all forms of community capitals have the potential to yield the "relevance" of assessing protected areas capacity to deliver social benefits, protect cultural diversity and promote biodiversity conservation objectives.

When all forms of capitals are recognized and invested in, communities tend to understand the cost of living with conservation. For instance, communities do not have to accept crop and livestock destruction as being inevitable, but instead they come to understand there needs to be a constant realignment that they can accept and live with; thus continued environmental education and awareness is an essential ingredient/ tool needed to remind the community of its role in conservation. Consequently, new and creative systems thinking approaches like the CCF are useful in assessing the role of protected areas tourism and balancing the opposite outcomes of conservation and development.

The utility of CCF is that development should not be only equated with economic growth as the only indicator of interest by development planners and at the same time high level of biodiversity integrity alone should not be the only indicator to conservationist too, because economic growth and high levels of biodiversity integrity cannot be realized at the detriment of or in isolation of each other. It is the system

interdependence offered by realizing the importance of all community capitals that defines the performance of the overall ecosystem or status quo of communities. Therefore, we ought to understand the dynamics played by community capitals, thus to study the role of one form of capital in isolation of others would limit our understanding of the role they play in community development and conservation nexus.

This study contributes to how PA tourism enhances to community empowerment and sustainability discourse; conceptually and methodologically. First, and conceptually, it builds on Scheyvens (1999) empowerment framework by recognizing four more dimensions; human, physical, cultural, and natural capitals to provide a more holistic and system thinking approach on the assessment of tourism's contribution to community livelihoods and empowerment.

Secondly, the findings have methodological implications: the utility of using community capitals to explain the linkages between protected areas, tourism, and community livelihood through community assets' stock and flow or simple the transformation of one stock of capital to another in system thinking dynamics fashion (Hjorth & Bagheri, 2006), yields better understanding of the linkages than the use of traditional fragmented, mechanistic, and linear cause-effect mechanism which is unable to explain the intricacies inherent in issues of sustainability. Essentially, and in line with (Nguyen, Graham, Ross, Maani &Bosch, 2012), to understand the relationships between protected areas, tourism and community livelihoods; science should give way to holism where resources are viewed together as systems.

Thirdly, as the relationship between protected areas, tourism and community livelihoods is dynamic, change is inevitable, therefore, and as demonstrated by the findings through community asset mapping, the inevitability for change can be analyzed by locating trends and going through a learning process vis-à-vis the system on which tourism and community livelihoods operate to devise adaptive management mechanisms. This is in line with Farsari's (2012) assertion that sustainability concerns managing and adaptation. Therefore, system thinking approaches should guide research to develop conceptual models that are geared to support sustainable tourism policies.

To conclude; this dissertation contributes to the growing body of literature on protected area, tourism and livelihood. This research tested the usefulness of CCF as a framework through case-based research. The analysis of qualitative material drawn from community asset mapping, focus groups, in-depth interviews with key informants and household heads, and secondary sources identified sequences of themes before the introduction and after the adoption of tourism that led to community needs changes explained by the spiraling up and down of community capitals that have been ordered to fit the seven CCF model elements. Thus, this study was important in demonstrating that assessing the linkages between protected areas, tourism and community livelihoods as a way of determining the sustainability-oriented management of protected areas by emphasizing on all community form of capitals, has the potential usefulness in strategy formulation and performance analysis of protected areas' contribution to both conservation and community development.

As this research might be one of the few empirical studies using the community capital framework and asset mapping methodology approach in conservation, tourism and development; more research, including replication studies in different geographical areas, different community sizes, protected areas, and cultures, would promote refining the conceptualization of the community capital framework.

First, quantitative research approaches are suggested to help with more concrete quantification of the essence of linkages between protected areas, tourism and community livelihoods framed on the community capital framework underpinnings.

Second, it is equally important to measure and rank of community capitals importance, and as well as to assess each community capital contributions to changes in community needs overtime.

Thirdly, longitudinal research would also be valuable. As the synergistic link between economic incentives and conservation has been increasingly questioned (Berkes, 2004, Sakata & Prideaux, 2013, Swatuk, 2005), the adoption of alternative multi-indicator based and system thinking approaches like the community capital framework which endeavors to improve the understandings of protected areas, tourism and development linkages should be encouraged. Appraisal for complete community initiatives requires different methodological approaches than for a single purpose projects.

Finally, benefitting from this research, future studies could re-visit the Chobe National Park and CECT to reassess its evolution towards sustainability. As the wave of accommodating tourism by protected areas moves forward, it will be of importance to

closely monitor and evaluate not only its advancement, but also how protected areas and communities incorporate change as communities and natural resources are not static. This knowledge will allow practitioners and park managers alike to evaluate the processes of change and devise intervention measures informed by sustainable development principles, as advanced by Sakata and Bruce's (2013) assertion that the reality is that change is inevitable.

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APPENDIX A

KEY INFORMANTS RESEARCH PROTOCOL

GOVERNMENT DEPTS., LODGE MANAGERS 5 VILLAGE CHIEFS, CECT CHAIRPERSON AND CONSTITUENCY COUNCILOR IN-DEPTH INTERVIEW PROTOCOL

Dissertation research title: Protected Areas, Tourism and Rural Community Livelihoods in Botswana

1. Since the inception of Chobe National Park as a protected area what is its relationship with the CECT community?
2. Has the introduction of community-based tourism benefitted the community?
3. Does the community have the capacity to run tourism and related businesses?
4. Community needs are not static but dynamic in nature, how do you reflect on this in reference to CECT community? (probe)
5. What are some of the changes that have occurred in community needs over time?
6. Are these changes in community needs consistence with conservation measures for the CNP? (Probe).
7. What are the main challenges you are facing to balance changes in community needs and conservation measures? (Probe).
8. Looking at the future, what impacts do these changes in community needs have on Chobe National Park as a protected area?

9. Is tourism a sustainable option for communities especially looking at changes in community needs over time?

10. Does Chobe National Park as a protected area being a barrier by not allowing CECT communities to naturally follow their changes in community needs?

11. Community development is linked to 7 community capitals - in reference to CECT, which forms of capitals are abundant and which ones are scarce?

12. Do you think the abundant form of capitals have been used to substitute the scarce ones?

ASSESSMENT OF TOURISM BENEFITS, TRADE-OFFS AND VULNERABILITY CONTEXT

1. What benefits do you accrue as a result of participating in tourism? (list) [probe]

2. What costs do you accrue as a result of participating in tourism? (list) [probe]

3. Which forms of community livelihoods are you no longer pursuing because of participating in tourism (list) [probe]

4. How does the community balance the trade-offs (coping strategies) between tourism benefits and costs?

5. What has been the government's response to counteract the vulnerability to both community livelihoods and conservation?

6. Do changes in community needs have an impact on accentuating or reducing the vulnerability context?

7. Which forms of community capital in the context of CECT are more vulnerable to trade-offs between different forms of community capital?

APPENDIX B

ASSET MAPPING AND FOCUS GROUP DISCUSSION PROTOCOL

Dissertation research title: Protected Areas, Tourism and Rural Community Livelihoods in Botswana

Research Question 1: To map community capitals trends in a successional approach so as to determine implications on sustainability [successional: past, now and future].

1. ASSET BASED-MAPPING

    a) What is CECT?

    b) Why was CECT as a community project formed?

    c) What assets do you think you have as a community?

2. MAPPING THE PAST

    a) Look back maybe up to before the commencement of CECT. Then Draw the map of your community and indicate assets the community had.

    b) The discussion will focus on the maps and assets drawn.

    - Which assets/capitals the community had in abundance in the past?
    - Which assets/capitals were scarce?

    c) How was capital scarcity solved? (Any relationships or links between capital scarcity and abundance?)

    d) How have they changed, has this change been positive or negative?

3. MAPPING THE PRESENT

a) Draw the map of your community and indicate assets your community currently has.

b) What is the relationship between you current and past maps?

- Which assets/capitals the community has in abundance now?
- Which forms of capital have dwindled now?

c) Are there any linkages/relationship that can be explained by asset abundance on the one hand vs. dwindling on the other?

d) What does this asset abundance and dwindling mean to:

i) CECT as a community project (Discussions)

ii) Community livelihoods (discussions)

iii) Chobe National Park (Discussions)

e) Let's assume now we stop use one of the natural capital, for example; specifically wildlife, do you think (CECT, community livelihoods, Tourism and Chobe National Park would continue to serve their purpose as usual

4. FUTURE MAPPING ASSESSMENT

a) Draw your community map and show how you would like your community to look like in the future.

b) With the current forms of capital you have now, do you think your future map and assets you have drawn is attainable?

c) Which forms of capital are important in determining the future of:

i) Community of livelihoods;

ii) Chobe National Park;

iii) CECT as a community project

iv) Tourism in the area

APPENDIX C

HOUSEHOLD INTERVIEW PROTOCOL

Dissertation research title: Protected Areas, Tourism and Rural Community Livelihoods in Botswana

Research Question 2**:** To assess whether changes in community needs have altered the character of protected areas and community livelihoods.

A. INFORMATION ABOUT THE HOUSEHOLD

1. Where you born in this village? (If no probe to find out place of origin, why did you come to settle here?)
2. For how long have you been living here?
3. What is your ethnic group?
4. What are your main sources of livelihoods (provide a list).
5. How many people are formally employed in this household and where?
6. Are you engaged in any form of farming (pastoral/arable)

B. ASSESSMENT OF GROWTH OF HOUSEHOLD IN TERMS OF SOCIO-ECONOMIC ACTIVITIES

1. How much did you plough (hectares) in the past and how much land do you plough now? (If there are some differences, explain why?)
2. If you want to increase your land for plowing, is it easy to do that?
3. What form of draught power have you been using for the last 10 years?
4. Since the introduction of CECT what changes has CECT brought to your community (provide a list).

5. Which changes are most important and as well as least important to you?

6. What aspirations do you want to see brought by CECT now and in future?

C. HOUSEHOLD RELATIONSHIP WITH THE CHOBE NATIONAL PARK

1. Does living in the park improved or not improved your life in general.

2. What are the specific benefits are you getting from CNP?

3. What are the limitations imposed on you by the fact that you are living in a park?

4. Do you have any specific needs that you would want to pursue but you cannot because you are not allowed? [probe]

D. ASSESSMENT OF CHANGES IN HOUSEHOLD NEEDS

1. Do you see your household in generally living a better life than before the commencement of CECT?
2. What would be the most notable change that has occurred to your household that may reflect your changes in household needs? (list them)
3. Are there any developments within your community that you can pinpoint as new indications showing that your community is changing?
4. What are other developments that you would like to see taking place in your community in future?
5. Comparing your community needs with other villages, do you see your village doing better than other villages? (probe)

Research Question 3: To assess whether the introduction of tourism has led to the spiraling up or down of community capitals

ASSESSMENT OF TOURISM BENEFITS, TRADE-OFFS AND VULNERABILITY CONTEXT

8. What benefits do you accrue as a result of participating in tourism? (list) [probe]

9. What costs do you accrue as a result of participating in tourism? (list) [probe]

10. Which forms of community livelihoods are you no longer pursuing because of participating in tourism (list) [probe]

11. How does the community balance the trade-offs (coping strategies) between tourism benefits and costs?

12. What has been the government's response to counteract the vulnerability to both community livelihoods and conservation?

13. Do changes in community needs have an impact on accentuating or reducing the vulnerability context?

14. Which forms of community capital in the context of CECT are more vulnerable to trade-offs between different forms of community capital?

APPENDIX D

INFORMATION LETTER FOR INTERVIEWS

Research Title: Protected Areas, Tourism and Rural Community Livelihoods in Botswana

Date:

Dear Participant:

I am a graduate student under the guidance and supervision of Professor Gyan Nyaupane, PhD, in the School of Community Resources and development at Arizona State University, USA. I am conducting a study to assess and understand the linkages between protected areas, tourism and community livelihoods in Botswana.

Your experience and perceptions on the linkages of protected areas, tourism and community livelihoods give an important perspective we would like to include in our report. Your participation represents a unique opportunity to voice your opinion about how protected areas, tourism and community livelihoods relate. Your time commitment at this meeting would be between 40 and 120 minutes. You have the right not to answer, skip some of the questions and to stop the interview at any time. We would like to audiotape this interview. The interview will not be recorded without your permission. The audio records will be transcribed later to extract information. The audio and transcribed text will be stored in the computer of the principal and co-investigators. The audio records and transcribed texts will be destroyed after the research is published.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study. Your responses will be anonymous. Your audio responses will

not be known to any other except the principal and co-investigators. Your answers will be used with many others in an aggregated form. The results of this study may be used in reports, presentations, or publications but your name and personal information will not be revealed.

If you have any questions concerning the research study, please contact the research team at: gyan@asu.edu and mtstone@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. Please let us know if you wish to be part of the study.

Your acceptance to be interviewed will be considered your consent to participate and record your interview.

Sincerely,

Moren T. Stone

Arizona State University

School of Community Resources & Development

ASU mail code: 4020

411 N. Central Ave., Ste. 550, Phoenix

AZ 85004-0690, USA

Ph (480)241-8160, Fax (602)496-0953

Email: mtstone@asu.edu

APPENDIX E

ASU INSTITUTIONAL REVIEW BOARD EXEMPTION CERTIFICATE

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Gyan Nyaupane UCENT
From:	Mark Roosa, Chair Soc Beh IRB
Date:	05/17/2012
Committee Action:	**Exemption Granted**
IRB Action Date:	05/17/2012
IRB Protocol #:	1205007786
Study Title:	Protected Areas, Tourism and Rural Community Livelihoods in Botswana

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX F

REPUBLIC OF BOTSWANA RESEARCH PERMIT

TELEPHONE: 3914955
TELEGRAMS: MEWT
TELEX:
TELEFAX: 3908076

REPUBLIC OF BOTSWANA

MINISTRY OF ENVIRONMENT,
WILDLIFE AND TOURISM
PRIVATE BAG BO 199,
GABORONE
BOTSWANA

REFERENCE: **EWT 8/36/4 XVIV (108)**

ALL CORRESPONDENCE MUST BE ADDRESSED TO

THE PERMANENT SECRETARY

31 May 2012

MOREN TIBABO STONE
SCHOOL OF COMMUNITY RESOURCES & DEVELOPMENT
ARIZONA STATE UNIVERSITY
411 N.CENTRAL AVENUE
SUITE 550
PHOENIX 85004, ARIZONA

Tel: (602) 496-0550 Fax: (602) 496-0953
Email: moren.stone@mopipi.ub.bw or mtstone@asu.edu

APPLICATION FOR RESEARCH PERMIT: "PROTECTED AREAS, TOURISM AND RURAL COMMUNITY LIVELIHOODS IN BOTSWANA".

We are pleased to inform you that you are granted permission to conduct a research entitled: **"Protected Areas, Tourism and Community Livelihoods in Botswana."**

The research will be conducted at **the CECT villages-Mababe, Parakarungu, Satau, Kachikau and Kavimba and the Chobe National Park.**

This permit is valid for a period effective from **1st June 2012 to 31st July 2012.**

This permit is granted subject to the following conditions:

1. Signing and submission of an Agreement between Government of Botswana and Independent Researchers (enclosed).

2. Progress should be reported periodically to the **Department of**

Tourism.

3. The permit does not give authority to enter premises, private establishments or protected areas. Permission for such entry should be negotiated with those concerned.

4. You conduct the study according to particulars furnished in the approved application taking into account the above conditions.

5. Failure to comply with any of the above conditions will result in the immediate cancellation of this permit.

6. The research team comprises of **MOREN TIBABO STONE, LESEGO SENYANA STONE and TAPIWA CAIPHUS.**

7. The applicant should ensure that the Government of Botswana is duly acknowledged.

8. Copies of videos/publications produced as a result of this project are directly deposited with the Office of the President, National Assembly, Ministry of Environment, Wildlife and Tourism, Department of Tourism, National Archives, National Library Service, and the University of Botswana Library.

Thank you.

Yours faithfully

Mable Bolele
For/Permanent Secretary

CC. Department of Tourism