



An institutional framework for the sustainable co-existence of tourism and agriculture in Botswana

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DECLARATION

I, Patricia Kefilwe Mogomotsi, declare that the contents of this study represent my own work and that I have not previously, in its entirety or part, submitted it at any university for a degree. The discussion herein is based on my observations and conclusions, except where due reference is acknowledged.

Signature _____ Date _____

DEDICATIONS

To Fish and Deborah Madigele, my sleeping angels, and to Goemene Jr and Goemeone Sr, my living angels.

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ABSTRACT

The tourism industry has been identified as an industry to diversify the economy away from capital-intensive and vulnerable diamond mining sector. In Botswana, the industry is mainly concentrated around the Okavango Delta. The Okavango Delta is endowed with a vast variety of natural resources. The area is thus home for many tourism facilities, and thriving businesses for many engaged in the tourism industry, be it individuals and multinational corporations. However, there seems to be a dichotomy between the considerable presence of the tourism industry in this area and the benefit of individual households from tourism. The sector has largely failed to make significant contributions to rural development in Botswana, particularly in the Okavango Delta where it is concentrated. The failure is attributed to factors such as the weak linkages of tourism with the domestic economy, and the conflict between tourism and the agricultural sector. Generally, the Okavango Delta has experienced negative natural resource dynamics, increasing competition and conflict over natural resources, biodiversity loss and some cases of natural resource depletion.

There is an imminent need to develop and implement approaches to ensure the balance between conservation of natural resources in and around the Okavango Delta and sustainable use of resources for socio-economic benefits of rural communities in the delta in the midst of inherent conflicts. The attainment of a mutually beneficial balance is dependent on the establishment of quick access and occupancy rights and the creation of a robust institutional environment with the core aim of helping to attain sustainable land use. The aim of this study is, therefore, to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana, using the Okavango Delta as a case study.

The study adopted frameworks of two bodies of knowledge, namely; the New Institutional Economics (NIE) and sustainable tourism theories. Through literature, this study made a distinction between 'institutions' and organisations. Essentially, institutions are rules of the game while organisations as players of or in the game played. This study adopts the 'rule of the game

definition of institutions and defines organisations as structural, institutional arrangements that serve as a framework for structuring relational actions between agents. Veblen, Commons and other old institutional economists refined economic analysis by incorporating institutions and institutional change arguments within the economics discipline. While Veblen and other old institutional economists succeed in redefining efficiency in the context of transaction costs reduction, their discipline displayed some weaknesses. The old institutional economics lacked systematic and rigorous theoretical foundations. The NIE emerged as an attempt to incorporate institutional analysis into mainstream economics by systematically operationalising the insights of neoclassical economics.

The conventional, sustainable development paradigm encompasses economic, environmental or ecological, and social and cultural dimensions. The interaction of the three pillars is often referred to as the TBL framework of sustainability. However, several studies have argued that the failure to acknowledge the importance of the fourth dimension of institutional sustainability is likely to contribute to the failure to achieve the other three dimensions. Institutional sustainability emphasises participatory decision-making processes and public involvement in natural resources management processes. An enabling institutional environment is hence necessary for strategically linking to the agricultural sector to enhance synergies, as well as to improve the contribution of the sector in agrarian communities.

This study uses both secondary and primary data sources to analyse the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta, to determine the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta and to analyse the conflict and coexistence of agriculture and tourism in the Okavango Delta. The literature study and document analysis in this study depended on a systematic reviewing technique. Villages reflective of natural resource conflict and coexistence were identified from literature sources and through site visits in July 2017. Subsequently, four villages were conveniently sampled. These four villages are Shorobe, Matsaudi, Gumare and Shakawe. Eighteen (18) key informants with knowledge on land use conflicts and the socio-

economic issues reflecting tensions between agriculture and tourism in the Okavango Delta were selected using expertise-oriented approach. Moreover, four focus groups were held, one in each village. A total of 221 randomly selected farming households responded with a rate of 96.1%.

The study finds that post-independence, the institutional framework governing the country's land resources is a combination of common and customary laws. Therefore, there is an interactive relation between formal and informal institutions in the country. Despite the generally good intentions of land management institutions and the accommodative land tenure systems that aim to contribute to good land use management, the reality is land use issues are still marred with challenges. The study concludes that the changing institutional landscape of natural resources management imposed trade-offs between land uses, sustainability goals and ecosystem services. The institutions oscillate between promoting coexistence and igniting conflicts between agrarian communities and contemporary land uses, primarily conservation and tourism. The study further concludes that economic benefits derived by the farmers through employment are generally low. Furthermore, there are low and weak linkages of tourism with local small-scale farmers in the region.

Based on these findings, this study recommends viable and sustainable conceptual frameworks for creating a mutually inclusive environment for the economic growth of both tourism and agriculture in the Okavango Delta. The first frameworks aim at promoting the linkages between tourism and agriculture, while the second conceptual framework proposes a sustainable institutional environment premised on four key activities, which are a continuous process.

Keywords: institutions, sustainable tourism, conflicts, livelihoods, agriculture, tourism

ABBREVIATIONS AND ACRONYMS

ADR:	Alternative Dispute Resolution
AfDB:	African Development Bank
BIDPA:	Botswana Institute for Development Policy Analysis
BTO:	Botswana Tourism Organisation
CAR:	Centre of Applied Research
CBNRM:	Community Based Natural Resource Management
CBO:	Community Based Organisation
CBT:	Community Based Tourism
CECT:	Chobe Enclave Conservation Trust
CHA:	Controlled Hunting Area
DFID:	Department for International Development
GATS:	General Agreement on Trade in Services
GDP:	Gross Domestic Product
ILO:	International Labour Organisation
LIMID:	Livestock Management and Infrastructure Development
LWDP:	Livestock Water Development Programme
NES:	National Ecotourism Strategy
NIE:	New Institutional Economics
NGO:	Non-governmental Organisation
NPAD:	National Policy of Agricultural Development
NTRAs:	Non-tourism-related activities
ODMP:	Okavango Delta Management Plan
OIE:	Old Institutional Economics
PoS:	Prism of Sustainability
SADC:	Southern African Development Community
SLFT:	Sustainable livelihoods framework for tourism
SLOCA:	Services to Livestock Owners in Communal Areas

SPSS:	Statistical Package for Social Sciences
STMT:	Sankuyo Tshwaragano Management Trust
TIES:	The International Ecotourism Society
TBL:	Triple bottom line
TRAs:	Tourism-related activities
UNCSD:	United Nations Commission on Sustainable Development
UNEP:	United Nations World Commission on Environment and Development
UNESCO:	United Nations Educational, Scientific and Cultural Organisation
UNWTO:	United Nations World Tourism Organisation
VDC:	Village Development Committee
WCED:	World Commission on Environment and Development
WCNPA:	Wildlife Conservation and National Parks Act
WFDCS:	'Working farm, direct contact, staged' agritourism
WFIC:	'Working farm, indirect contact' agritourism
WFPC:	'Working farm, passive contact' agritourism
WMA:	Wildlife Management Areas
WTTC:	World Travel and Tourism Council
WTO:	World Tourism Organisation

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CHAPTER 1

INTRODUCTION, PROBLEM STATEMENT AND METHOD OF RESEARCH

“Our livelihood is intimately tied to the food we eat, water we drink and places where we recreate. That's why we have to promote responsibility and conservation when it comes to our natural resources.” - Mark Udall

1.1. Introduction

Botswana is perceived as an all rounded success story in sub-Saharan Africa, both economically and politically. When the country attained independence in 1966, the social and economic infrastructures were underdeveloped. It was one of the poorest countries in the world at independence (Taylor, 2006). However, Botswana's economy boomed at impressive rates following the discovery of diamonds to an ‘upper-middle- income country’ (Martin, 2008). Its economy has been among the fastest growing in the world during the last 50 years (World Bank, 2015). The economy has enjoyed rapid growth based on the exploitation of minerals and the use of revenues derived from mineral production for investment in economic and social infrastructure. The country is the world’s largest producer of gem diamonds. The Gross Domestic Product (GDP) increased fourfold in real terms from 1966 to 1991. It is argued that Botswana’s economic transformation, although heavily reliant on mineral resources, was possible because of good leadership and sound policy decisions (Sebudubudu and Batlhomilwe, 2011).

However, the 2007/8 world economic recession proved the vulnerability of the *de facto* mono commodity-based economy of Botswana. The weakness of a single product dependent economy was exposed by the decline in export demand for diamonds, which led to the loss of jobs and reduced public revenue (Throup, 2011). The economy contracted by 3.7% in 2009 mostly due to a sharp decline in diamond demand (Khama, 2010). It is succinctly argued that this dependence on the diamond sector explains the long strategy of the government of economic diversification based on private sector investment. Furthermore, the vulnerability arising from over-reliance on

diamond mining and the inability of this enormous resource to absorb a large pool of unemployed and underemployed labour underpins the crisis of deepening unemployment and poverty. The failure to diversify the economy to create jobs has been used to draw links with the government adoption of the neoliberal reforms as a desperate measure to develop local businesses and attract foreign investors (Sekwati, 2010).

It is worth noting that while mining is the leading national economic activity, ordinary rural Botswana do not practice it. Though neglected as an economic sector by the government, agriculture, especially subsistence farming, is practised by the majority of rural Botswana including the rural community in the Okavango Delta. Livestock farming and flood recession arable farming are widely practised by villagers in the Delta (Kgathi et al., 2006). However, there has been declining agricultural productivity among smallholder farmers in the Okavango Delta (Molefe et al., 2014). This has been, in part, due to an unfavourable policy environment. Contemporary regulatory frameworks, policies and institutions crafted by the government to influence the direction of economic activities in wetlands have changed the landscape of customary and agricultural land access in order to accommodate other competing land uses such as tourism.

The tourism industry has been identified as an industry to diversify the economy away from capital-intensive and vulnerable diamond mining sector. The industry is mainly concentrated around the Okavango Delta. The Okavango Delta is endowed with a vast variety of natural resources. The area is thus home to many tourism facilities, and thriving business for many engaged in the tourism industry, be it individuals and multinational corporations. A vast body of literature on the socio-economic and environmental impacts of tourism in the Okavango Delta has emerged over the past decade (Mbaiwa, 2004 and 2005, Mbaiwa et al., 2008, Harrison and Maharaj, 2013, Manwa and Manwa, 2014).

However, there seems to be a dichotomy between the massive presence of the tourism industry in this area and the benefit of individual households from tourism (Mbaiwa and Stronza, 2010).

There appears to be a little, if nothing at all, trickling down at the local level of the economic diversification drive from over-dependence from a single industry, tapping on the potentials of sustainable tourism (Mbaiwa, 2017). Sustainable tourism is dependent on relevant institutions that provide unambiguous guidelines (Neto, 2003) that regulate access and rights to resource use by communities in the Okavango Delta.

Over the years, institutional economics has been used to determine how institutions influence public choice and human behaviour. The debates over the nature of institutional arrangements that should account for the effective, equitable, efficient and sustainable management of competitive natural and land resources have undergone a notable shift (North, 1990; Ostrom, 1990; Bandaragoda, 2000; Brousseau and Glachant, 2008; Kirsten et al., 2009). The shift has occurred in part as a response to the emergence of new academic ideas of non-cooperative game theory (Agrawal, 2001a), and partly because of development and expansion of the body of literature on new institutionalism (North, 1990; Ostrom, 1992 and 2005; Agrawal, 2001b; Brousseau and Glachant, 2008).

There is a need, therefore, to understand the institutions and institutional arrangements that govern natural resource utilisation between various users with divergent and competing interests. This chapter aims to provide a background to the study and to outline the problem. The chapter also presents an overview of the theoretical framework that was adopted by the study and outlines the study's goals and objectives.

1.2. Background to the study

Notwithstanding that tourism as an economic sector has played a considerable role in growing various economies around the world, it has affected social and economic development negatively, as well as the environment (Roger and Aitchison, 1998; Mbaiwa 2004; Archer et al., 2005; Kuvana and Akan, 2005; Kim et al., 2015). With specific reference to agriculture, it has been observed that since most tourist resorts and activities are located in rural areas, tourism

development may affect local agricultural production (Liu et al., 2008). This leads to conflicts over land use between tourism and agricultural activities. The relationship between tourism and agriculture is often referred to as ranging from the opportunity to conflict (Telfer and Wall, 1996).

According to the economics theory, there are two primary sources of conflict over natural resources use. Firstly, the scarcity of resources necessitates allocations with trade-offs which are seemingly challenging with dynamic demand and supply needs of resources (Powelson, 1972; Bennett, 2000). Bennett (2000) argues that after reaching the ecological boundary of a natural resource, the possibility of attaining equitable resource allocation to satisfy all resource users diminishes. The second source of conflict is the self-seeking attitude of resource users to satisfy short-term personal gains at the expense of long-term social benefits (Bennett, 2000). An understanding of the latter is usually derived using game theory to identify socially optimal land and other natural resource use outcomes (Gibbons, 1992; Bennett, 2000).

Increasingly, the literature on environmental and natural resource management issues such as environmental policies, natural resource scarcity and resource conflicts has diverted the focus of natural resource and environmental economists from the neoclassical economics approach (Leach et al., 1999; Deacon and Mueller, 2006; Hackett, 2011). Scholars now use the theoretical underpinnings of institutional economics to seek clarity on how institutions influence public choice, transaction costs and human behaviour (Leach et al., 1999; Deacon and Mueller, 2006).

Open-access and common-pool resources are often prone to overconsumption, misuse and competition. These eventually compound to 'tragedy of the commons' – a phenomenon defined as the depletion of a shared resource by rational individuals with full knowledge that overuse of the resource is against long-term interests of the group (Hardin, 1968).

In economics, the land is considered a scarce natural resource (Swallow et al., 2006). Economists, therefore, argue that land use policy and other institutions generally address the inherent allocation problems associated with land resources through the viewpoint of trade-offs, choices

and incentives (Swallow et al., 2006). From this backdrop, land use institutions are crucial in directing human behaviour and influencing individual or group choices including public policy-formulation.

According to Kironde (2009), about 60% of Africa's population derives their income and livelihood from land utilisation through various agricultural activities. However, it is argued that such factors as contemporary land use practices pose a threat to the benefits of land to traditional farmers and agrarian societies in Africa (Torres and Momsen, 2004). This in part due to the delayed incorporation of contemporary land use strategies such as tourism within the countries' overall rural development and poverty reduction strategies (Ashley, 2000; Torres and Momsen, 2004). The primary focus of tourism in most countries was to generate private sector profit and generate macroeconomic growth, until recently (Torres and Momsen, 2004).

Over the years, some developing countries have devised various strategies to improve the economic benefits of tourism at national and microeconomic levels such as communities and households (Neto, 2003; Saner et al., 2015). For instance, in Namibia, policies have been enacted to enable exclusive wildlife-based tourism in farms as an effort to increase sustainable economic output from land through land use diversification (Krugmann, 2001). Honey and Gilpin (2009) argue that the government is mandated to create a link between tourism and agriculture through developing relevant institutions and creating an enabling institutional environment to promote the effective contribution of tourism in agrarian communities. It is argued that the link between agriculture and tourism could contribute to the stimulation of local agricultural returns (Torres and Momsen, 2004).

Generally, the strategies that advocate for maximising the benefits of tourism in rural or poor communities are referred to as 'pro-poor' tourism development strategies in various literature sources (Ashley et al., 2007; Chok et al., 2007; Harrison, 2008). Such strategies are argued to be vital in addressing the adverse environmental and socio-cultural impacts of tourism in

communities, as well as in promoting coexistence between tourism and other rural livelihoods (Chok et al., 2007; Harrison, 2008).

In Botswana, a few studies define traditional and contemporary land use patterns as well as socio-economic activities (Behnke, 1987; Sebege and Gwebu, 2013). The Okavango Delta is not an exception (Bendsen and Meyer, 2003; Kgathi, 2002; Mbaiwa, 2004 and 2005, Mbaiwa et al., 2008). Even fewer studies on the institutions managing natural resources in the delta have been carried out (Darkoh and Mbaiwa, 2005). Darkoh and Mbaiwa (2005), however, did not analyse natural resources institutions and the role such institutions play in promoting coexistence and creating conflict between several users with diverse interests. The authors used the concept of sustainable development as their theoretical framework and the framework for ecosystem assessment as their conceptual framework. Furthermore, their study was conducted over a decade ago before the registration of some community based natural resource management (CBNRM) groups. Table 1.1 summarises the studies that have been conducted in the Okavango Delta and their main findings.

Table 1.1: A summary of studies on land use in the Okavango Delta and their main findings

Author(s)	Title of the study	Main findings of the study
Mbaiwa and Mbaiwa (2006)	The Effects of Veterinary Fences on Wildlife Populations in Okavango Delta, Botswana	The authors conclude that veterinary fences erected for livestock disease control have a direct negative impact on wildlife numbers in the Okavango Delta.
Mbaiwa (2005)	Enclave tourism and its socio-economic impacts in the Okavango Delta, Botswana	In this study, it is noted that tourism in the Okavango Delta can be viewed as unsustainable from a socio-economic perspective. This is primarily due to the existence of weak linkages of tourism with agriculture and the general domestic economy.

Darkoh and Mbaiwa (2005)	Natural Resource Utilisation and Land Use Conflicts in the Okavango Delta, Botswana	In this study, it is concluded that land use conflicts in the Okavango Delta are primarily influenced by pressures on natural resources reactionary policies that encourage unsustainable use of natural resources.
Kgathi et al. (2005)	Natural resources assessment in the Okavango Delta, Botswana: Case studies of some key resources	The paper concludes that an increase in population in communities in the Delta and scarcity of land resources have prompted competition in the Okavango Delta. Furthermore, there have been changes in agricultural land use pattern due to a shift to <i>molapo</i> arable farming.
Mbaiwa and Darkoh (2005)	Sustainable Development and Natural Resource Competition and Conflicts in the Okavango Delta, Botswana	In this paper, it is argued that natural resource competitions and conflicts are more pronounced between emerging land users, especially tourism, and traditional stakeholders. The inherent competition poses a threat to the sustainable utilisation of the Okavango Delta.
Rutina et al. (2016)	Challenges Facing Natural Resources Management: Human-Wildlife Co-Existence In The Okavango Delta, Botswana	Through the analysis spatiotemporal trends in wildlife and livestock populations, it was concluded that the encroachment of livestock into Wildlife Management Areas (WMA) and the general increase in both livestock and

		wildlife biomass have contributed to the existence of human-wildlife conflict in the Okavango Delta.
Brown et al. (2016)	The Acceptance of Traditional Authorities in the Okavango Basin - An Experimental Study in Namibia and Botswana	This paper investigates the role of customary law institution in two countries in the Okavango Basin. Both the countries under investigation have a dual legal system. The study found that harmonisation of these two systems of laws might be helpful in the administration and management of land and natural resources use as well as in addressing conflicts in the Okavango Delta.
Motsumi et al. (2012)	Indigenous knowledge and land use policy: Implications for livelihoods of flood recession farming communities in the Okavango Delta, Botswana.	This article discusses informal institutions in the form Indigenous Knowledge Systems in the Okavango Delta. It concludes that notwithstanding the importance of Indigenous Knowledge Systems in land management and usage in the Okavango Delta, there is no policy framework supporting its implementation.
Harrison and Maharaj (2013)	Tourism Impacts on Subsistence Agriculture: A Case Study of the Okavango Delta, Botswana	The authors note that a significant challenge facing the Okavango Delta region is the need to support the tourism industry without compromising

		<p>the traditional livelihoods of its local inhabitants. Of great interest, it has been noted that the Okavango Delta presents a unique opportunity to study the impact of tourism on rural agriculture and to observe the negotiation and competition that occurs between global tourism and local agriculture.</p>
Poteete (2009)	Defining Political Community and Rights to Natural Resources in Botswana	<p>This paper gives a general political discussion of management of natural resources with specific reference to wildlife management. It argues that the centralised model of managing these resources give rise to conflict in that the local communities feel disempowered yet expected to forego their livelihood subsistence for the interest of everyone else. The article posits that although centralised management treats wildlife resources as national resources, it alienates people by associating the nation with burdens and constraints rather than benefits.</p>
Darkoh and Mbaiwa (2014)	Okavango Delta – A Kalahari Oasis Under Environmental Threats	<p>This article notes that the increased population and influx of different and users has resulted in competition for resources and resulting unsustainable land use practices and land use conflicts in the Okavango Delta. It argues that</p>

		<p>the answers to these problems partially lie in the Okavango Delta Management Plan (2005-2029). This plan provides for aims at addressing conflicting and contradictory policies, human-wildlife conflicts among others.</p>
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Over the years, the Okavango Delta has experienced negative natural resource dynamics, including water pollution, biodiversity loss and some cases of natural resource depletion (Darkoh and Mbaiwa, 2005). There has also been increased competition over natural resources in the Delta, resulting in land use conflicts (Darkoh and Mbaiwa, 2014). Notably, there is a conflict between livestock and wildlife. A veterinary fence has been erected around the Delta to contain the growing livestock and protect the livestock by blocking the migratory routes of wildlife (Mbaiwa and Mbaiwa, 2006). Consequently, the fence has contributed to the death and decline of wildlife species around the Delta (Darkoh and Mbaiwa, 2005). This decline has potential adverse effects on tourism, especially wildlife-based tourism, in the area.

Ferguson and Hanks (2012) argue that veterinary fencing and expansion of agriculture and communal land was done without prior assessment of the impacts of various prevailing land use options on the environment and the broader biodiversity. Arguably, the existence of abundant wildlife in northern Botswana despite the region's low rainfall precedence created a rare window of opportunity for the country to benefit substantially from the tourism industry and diversify from the diamond mining industry and commercial livestock farming, which is economically inefficient (Child and Barnes, 2010).

Various scholars have suggested different ways of mitigating or managing natural resource conflicts (Buckels and Rusnak, 1999; Thakadu, 2005; Mbaiwa, 2015). The results of implementing the suggested solutions proposed by studies, however, vary from case to case. For example, the probability of the success of Alternative Dispute Resolution (ADR) in addressing natural resource conflicts is dependent on the magnitude of environmental or resource conflicts and the

participation of stakeholders (Andrew, 2001). However, the applicability of the ADR approach has not been established in the Okavango Delta.

The other suggested approach to manage natural resource conflicts to promote coexistence and sustainable utilisation of resources is the CBNRM. Some communities in the Okavango Delta have instituted CBNRMs in the form of community trusts and venture projects to participate in tourism development and to promote sustainable use of resources (Mmopelwa, 2006; Mbaiwa, 2015). While some CBNRM projects have succeeded in improving rural livelihoods and biodiversity conservation, others have failed in the Delta. Mbaiwa (2015) argues that some CBNRM may have failed due to ineffective institutional frameworks. However, this hypothesis has not been theoretically or empirically proved.

Another way to promote coexistence and reduce conflict between tourism and agriculture in rural communities is through agritourism development (Das and Rainey, 2010; Wang et al., 2012; Kurnianto, 2013). Wang et al. (2012) argue that agritourism serves a crucial role in contributing to the growth of the agricultural sector by promoting optimisation and increasing revenue. There are successful cases of agritourism, such as Toscana and southern Thailand, where both tourism and agriculture flourished (Kurnianto, 2013).

It is generally accepted that the expansion of the tourism sector increases the market for the local agricultural produce, notwithstanding often little empirical evidence to support this assumption (Mwaijande, 2007). Nonetheless, in some other regions in the world, there is evidence that tourism supports agriculture growth (Telfer and Wall, 1996; Mwaijande, 2007). To date, no study has been carried out in the Okavango Delta to establish the linkages between agriculture and tourism. It is, therefore, unknown whether the increased market for agricultural products is in respect to producing from the areas within which tourism takes place, such as the Okavango Delta. This study intends to investigate whether tourism activities in agrarian and sensitive ecological areas in Botswana using the case study of the Okavango Delta, complement the local subsistence agriculture.

New institutional economists argue that the success, or lack thereof, of natural resource management institutions to attain their mandates is in part dependent on the ability of policies, enactments and regulations to incorporate social rules, norms and behaviours, as well as traditional customs during formulation (North, 2000; Lieberherr, 2009). Furthermore, the failure of institutions can be attributed to the failure to recognise the interconnectedness of levels of economic institutions during the critical stages of formulation and implementation stages (Williamson, 2000; Menard and Shirley, 2005; Joskow 2008). The four interconnected and interdependent levels through which the roles of economic, political, social and cultural institutions of economic activity can be examined are related to embeddedness and informal institutions (social theory), primary institutional environment, institutions of governance and institutions of resource allocation and employment. The four levels of economic institutions shall form the conceptual framework of analysis for this study, within the New Institutional Economics (NIE) theoretical viewpoint.

While neoclassical economists have recommended the assigning of private property rights as one of the essential ingredients for promoting sustainable resource use (Hackett, 2011: 100), new institutional economists extend this argument by arguing that institutions have to define the physical restrictions to common pool resources such as land (Ostrom, 1990; Hackett, 2011). According to the scholars, such restrictions should specify the method of financing the natural resource system, how the system should be monitored, how conflicts will be resolved and so forth (Ostrom, 1990; Bromley, 1992; Hackett, 2011). Furthermore, according to neoclassical economics theory, the enforcement of property rights leads to optimal allocation of resources resulting from the price and demand of the resources (Williamson 1998; Saleth and Dinar, 2004; Hodgson, 2009).

Generally, Pareto optimality is regarded as a necessary but not sufficient condition for attaining maximum social welfare (Reinhardt, 2001). The view of the Pareto-optimal allocation of resources in the absence of price misinterpretation has been criticised by proponents of NIE as being too abstract, where allocations of resources based on property rights may not be “optimal”

due to the presence of competing agents in the economy (Ollila, 2009). The analysis of agriculture and tourism as competing sectors in this study, therefore, necessitates the adoption of NIE theoretical framework.

1.3. An overview of the theoretical framework

The study will adopt and apply the frameworks of two bodies of knowledge; the NIE and sustainable tourism theories. The NIE theory will be used in determining the barriers that hinder linkages between the two sectors. On the other hand, sustainable tourism philosophy will provide a framework for creating linkages between the agriculture and tourism sectors in the Okavango Delta.

1.3.1. New Institutional Economics

Scholars such as John Rogers Commons, Thorstein Bunde Veblen and Gustav von Schmoller pioneered the “old” institutional economics to address the shortcomings of the neoclassical economic theory. The key propositions made by institutional economists are; first, “institutions do matter”; and second, “the determinants of institutions are susceptible to analysis by the tools of economic theory” (Matthews, 1986: 903).

The main difference between the “old” and the “new” institutional economics, however, is that the latter fails to embrace the concept of self-interest, thereby earning itself a label of a theoretical (Castle, 1999). It is argued that the “old” institutional economics lack rigorous and systematic foundations (Joksow, 2004).

In this study, both formal and informal institutions and institutional frameworks were analysed. The NIE seeks to determine how formal and informal institutions such as property rights, contracts, firms and other social arrangements may lead to positive social outcomes and a reduction in transaction costs (Williamson, 1998).

1.3.2. Sustainable Tourism

The theory of sustainable tourism development has become the focus of increasing attention among tourism theorists and practitioners alike (Sharpley, 2009). Its origins can be traced to the concept of sustainability in environmental resources management that grew to prominence in the 1970s. The International Union for the Conservation of Nature and Natural Resources first highlighted the definite idea of sustainable development in 1980 (Liu et al., 2008). Sustainable tourism development theory takes the concerns of countries and regions where the tourism industry drives the economy in respect of the environment into consideration, as well as the socio-cultural problems associated with unsustainable tourism (Neto, 2003).

This concept should be seen as an adaptive paradigm that is part of the parental concepts of development and sustainable development (Mbaiwa, 2005). The notion of sustainable tourism development arose due to the dissatisfaction with entrenched policies of continuous economic growth and unequal distribution of benefits and costs (Hardy et al., 2002). It refers to long-term economic sustainability within a framework of long-term ecological sustainability coupled with equity (Woodley, 1992). Further, sustainable tourism development theory gives a framework for the promotion of minimising the negative environmental impacts of tourism while maximising socio-economic benefits at tourist destinations (Neto, 2003).

Various tourism scholars have undertaken studies to investigate factors that influence local community support for sustainable tourism development (Yoon et al., 2001; Lai and Nepal, 2006; Dyer et al., 2007; Lepp, 2008; Lee, 2013). Some of these factors have been identified to include attitudes, perceived effects, community attachments and perceived effects (Yoon et al., 2001; Lai and Nepal, 2006; Dyer et al., 2007; Lepp, 2008; Nicholas et al., 2009).

1.4. Problem statement

Botswana takes pride in its diverse and abundant wildlife and natural resources, including the renowned Okavango Delta and Chobe River Plains in the North to the Kalahari Desert in the South (Leechor, 2005). Tourism has played a very significant role in the national economy and society, accounting in 2002 for an estimated share of 5% of GDP or about 8% of non-mining GDP (Leechor, 2005). When Botswana attained independence, tourism was almost non-existent. However, by 2007 tourism had grown to become the second largest economic sector after diamond production regarding contribution to GDP. The total contribution of travel and tourism amounted to BWP6, 278.9 million (USD573.5 million), 3.9% of total GDP in 2016 (World Travel & Tourism Council (WTTC), 2017).

Tourism is often perceived as an easy way to generate income. This sector contributes to the household economy of most rural communities in Botswana in various ways. The sector employs some Batswana especially around the areas where operators are concentrated. However, the benefits vary from one community to the other, and thus the contribution of tourism to the household economy varies from one household to another. In its effort to diversify the economy from being mineral based, Botswana has identified tourism as an alternative source of growth and diversification (Stone et al., 2017). Notwithstanding its general contribution to the GDP, Mbaiwa (2017) argues that tourism has mostly failed to make a significant contribution to rural development in Botswana, particularly in the Okavango Delta where it is concentrated. The same author attributes the failure of the sector to make significant contributions to rural development, to the weak linkages of tourism with the domestic economy, particularly the agricultural sector (Mbaiwa, 2017).

The overall contribution of agriculture to GDP has fallen significantly over the years. When the country attained independence in 1966, agriculture dominated the economy with over 40% contribution to GDP (UNDP, 2012). Subsequently, the overall share of agriculture had fallen to 1.9% in 2008 (UNDP, 2012) and 2% in 2011 (BIDPA, 2012). For this reason, the country is committed to its agricultural development in order to increase agricultural productivity in both arable and livestock production in order to increase farm incomes and thus help to make

agriculture a sustainable activity. Despite numerous efforts to improve agricultural production to use the sector as a significant alternative source of employment in rural areas, the high poverty headcount is a source for concern in rural communities in the Okavango Delta (Statistics Botswana, 2015).

The general objective of the Tourism Policy of 1990 is to obtain the highest possible net social and economic benefits for Botswana from their tourism resources. This policy was developed because the tourism sector had not been given due prominence, had the potential to create more economic benefits, and because Botswana were not likely to benefit from the sector in the absence of an enabling policy (Keatimilwe and Mpotokwane, 2006). However, poverty levels and unemployment rates in the Okavango Delta show that the policy has not attained its goals.

In light of the preceding, there is a need to develop and implement approaches to ensure the balance between conservation of natural resources in and around the Okavango Delta and sustainable use of resources for socio-economic benefits of rural communities in the delta in the midst of inherent conflicts. The attainment of a mutually beneficial balance is dependent on the establishment of apt access and occupancy rights and the creation of a robust institutional environment with the core aim of helping to attain sustainable behaviour (Ceddia et al., 2015). Therefore, the research questions for the study were;

- a) What are the institutional arrangements currently in place to manage natural resource conflicts and govern natural resource utilisation in the Okavango Delta?
- b) Do the current institutional arrangements adequately recognise nature-based systems while improving socio-economic conditions for people in the Delta?
- c) What are the economic benefits of tourism on local subsistence farmers in the rural Okavango Delta?
- d) What are the factors that will contribute towards the coexistence of sustainable agriculture and successful tourism activities in the Okavango Delta?

In light of these questions, the main aim of this study, therefore, is to develop a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture with minimal conflicts over land use in the Okavango Delta, Botswana. This framework can be extended to the other countries and areas that face similar issues.

1.5. The goal of the study

The overall goal of this study was to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in ecologically sensitive areas. To obtain the relevant results, this study used a case study of the Okavango Delta, Botswana.

1.5.1. Goal

The specific goal of this study was to develop an effective institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana.

1.5.2. Objectives

To address the general goal, the specific objectives of the study were:

Objective 1

To evaluate the literature on New Institutional Economics and natural resource management.

Objective 2

To synthesise the literature on sustainable tourism theories and rural livelihoods.

Objective 3

To analyse the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta.

Objective 4

To determine the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta.

Objective 5

To analyse the conflict and coexistence of agriculture and tourism in the Okavango Delta.

Objective 6

To recommend viable and sustainable options for creating a mutually inclusive environment for the economic growth of both tourism and agriculture in the Okavango Delta.

1.6. Research design

Despite the extensive use of the positivist research approach to economic research, this study applied a post-positivist research approach. A post-positivist research paradigm is an interpretive research approach that is based on the assumption that the considered research methods employed take into consideration the form of research question being addressed (Wildemuth, 1993).

This study is an exploratory study aiming at establishing the linkage between sustainable tourism and agriculture through a thorough analysis of the institutions governing natural resources and land usage in the Okavango Delta using a mixed methods approach. By collecting data for a specific investigation from a subset of the population at a specific point in time, this study is a cross-sectional survey.

The study adopts a case study research method. A case study is defined as an exploratory method that seeks the answers to research questions in a single entity (Cohen et al., 2000; Yin, 2003), using relevant data gathering techniques. The following section provides an extensive overview of the research methods used in this study.

1.7. Method of research

Research methods used to address the research questions of this thesis and the rationale for selecting specific research methods are addressed in this section. The method of research is divided into two subsections, namely: literature study and an empirical survey. The subsections are discussed in detail in this section.

1.7.1. Literature Study

A narrative approach using literature and document analysis provides an insight into the institutional relationship between tourism and agriculture, firstly worldwide and then applied to the Okavango Delta. Some of the policies analysed at depth in this study include the Tourism Policy of 1990, The Wildlife Conservation Policy of 1986 and the Agricultural Development Policy of 1991. In addition to these documents, available literature sources were systematically identified in electronic databases such as Google Scholar, EBSCO Discovery Service, African Journal Index and Environment Index using the keywords: sustainable tourism, agriculture, Okavango Delta, land use conflicts, natural resource institutions, and traditional stakeholders, among others.

Systematic reviewing techniques influence the methodological doctrine upon which this study was developed. Systematic reviewing techniques entail employing a rigorous and transparent approach to identification, quality appraisal and synthesis of studies (Best et al., 2014). According to MacDonald (2003), a systematic review is “designed to provide a reliable picture of ‘current best evidence’ relevant to a particular question”.

A systematic review process designed by Best et al., (2014) was adopted to collate and catalogue available data directly related to the objectives of this study. Systematic cataloguing of available literature sources is crucial for addressing policy-based questions (Dicks et al., 2014). The selected papers were then screened, and relevant papers were selected using the systematic search strategy outlined in Figure 1.1.

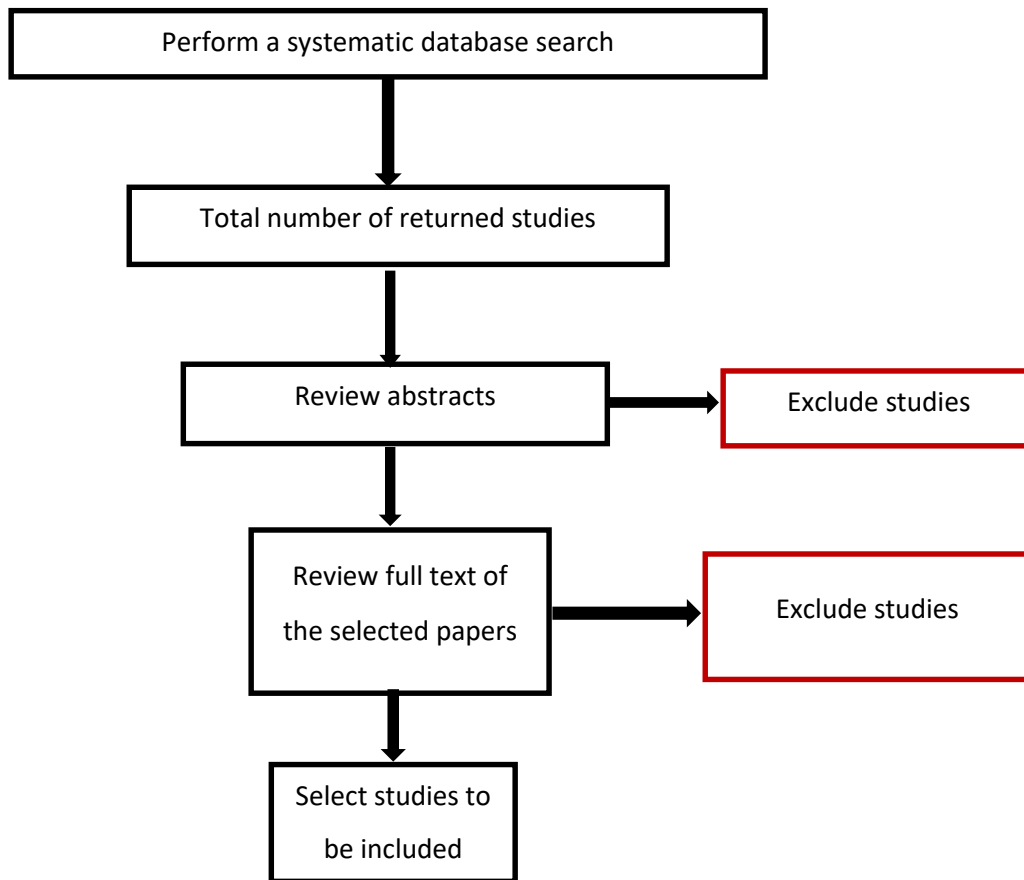


Figure 1.1: Systematic search strategy (Source: Adapted from Best et al., 2014)

1.7.2. Empirical survey

This section provides an overview of research design and the sampling method used in data collection. Furthermore, the section discusses in detail data collection instruments and data analysis approaches that were adopted in this study.

1.7.2.1. Method/s of collecting data

Although the study mostly requires qualitative data, addressing some aspects of the main aim of the study requires quantitative data. Therefore, this study used the mixed methods approach. According to Creswell (2008 and 2012), the mixed methods approach has the advantage of

providing a comprehensive analysis of the research problem where one particular method or data type cannot address the study's indicators fully. The study also relied on a multimethod data gathering approach to minimise flaws and to increase the accuracy of research results (Brewer and Hunter, 2006). Oosthuizen et al. (2005:72) argue that "By using a combination of observations, (e.g. interviewing and document analysis) the field worker can use different sources to validate and crosscheck findings".

In-depth crucial face-to-face informant interviews with representatives from Botswana Tourism Organisation, Department of Wildlife National Parks, Department of Animal Health and Production, Department of Crop Production, and community representatives, specifically *Dikgosi* (chiefs) and Village Development Committee (VDC) members were conducted to provide insights into the research matter. Furthermore, focused group discussions were held to facilitate conversations between the interviewer(s) and a determined number of groups of various stakeholders including both modern and traditional land users.

1.7.2.2. Sampling

Key Informant Interviews

The critical informant interviewees were purposively selected using the expertise-oriented approach. The selection of respondents was based on their knowledge of socio-economic issues reflecting tensions between agriculture and tourism, such as farmers' compensations for crop raiding. It was also based on the respondents' expertise in documents and policies that inform agriculture and tourism.

Focus Group Discussions

The focus groups contained a maximum of ten participants conveniently selected with the help of VDC members. The average time for each focus group discussion was one hour. To avoid dominant member syndrome and patriarchal society biases, each group constituted an equal number of males and females. In total, four group discussions were held, one in each village.

Household Surveys

Villages reflective of land use conflict and coexistence were identified from literature sources and through site visits. After identifying the villages with land use conflicts, four villages were conveniently sampled. These four villages are Shorobe, Matsaudi, Gumare and Shakawe.

Using the 2011 Botswana Population and Housing Census results, the total sample size obtained for this study was 228 out of 2976 estimated farming households at 95% confidence level and 80% estimated response rate. This was calculated using Raosoft sample size calculator, which is survey software. Simple random sampling was used to select households in each village. In simple random sampling, each farming household had a positive or non-zero probability of being selected. In total, 230 households were sampled. However, 221 responded while nine of the sampled households did not participate.

1.7.2.3. Development of measuring instrument

This study used three data collection instruments; a semi-structured questionnaire, a focus group discussion guide and a key informant guide (appendices 1 to 4). A semi-structured questionnaire was administered to household heads or representatives aged 21 years and above. The questionnaire had three sections. It is contended that framing the questions around sections is vital for reducing the ambiguity of information obtained during the data analysis stage (Malhotra, 2004). The first sections collected data on the demographic characteristics of households. The second section collected data on the quantitative aspects of the study, such as the economic distribution of tourism and agriculture to households. This helped to address the second specific objective of the study. The last section collected data on the perceptions of households towards tourism in order to formulate possible scenarios of coexistence of sustainable agriculture and successful ecotourism activities in the Okavango Delta.

A focus group discussion guide was used to facilitate focus group discussions. The guide was formulated to address objectives 4 and 5 of the study. Discussion topics included perceptions and experiences on tourism-agriculture conflicts, as well as perceptions on the benefits of tourism to local communities and the role of communities in the formulation of formal natural resource management institutions.

Key informant interview guides were used to interview the critical informants mentioned in 1.8.2.1. The interviews provided clarity and verification of quantitative data collected of perceptions regarding issued of interest in the study.

To minimise bias, the study used both the criteria for assessing the trustworthiness of naturalistic inquiries proposed by Guba (1981) and data triangulation to ensure reliability and validity of qualitative data. Triangulation is defined as “the combination of methodologies in the study of the same phenomenon” (Denzin, 1970: 291). A Cronbach's alpha was calculated as part of the reliability test to assess how consistent the results are. Additionally, a preliminary administration of the data collection instruments served as a reliability assessment in this study.

1.7.2.4. Survey/Collation of data

The researcher and two trained field assistants conducted face-to-face interviews and physical administration of questionnaires throughout two weeks after receiving the research permit. These methods of data collection are preferred in order to create an atmosphere of trust and offer clarity through discussions. The study, however, acknowledges that slight variations in the way in which the interviews are conducted are expected. For example, variations in respect to the ordering of the questions to allow the interview to be adapted to suit the respondent better may have occurred. To reduce interviewer bias and to ensure that the responses were comparable across all the interviews, the interview process guidelines proposed by Merriam (1998) were adopted.

1.7.3. Data Analysis

By using mixed data types, the analysis of data needed to address the research questions of the study required a combination of various steps, depending on the nature of the data. A thematic content analysis was used to examine the qualitative data. According to Braun and Clarke (2006), the thematic content analysis is necessarily a method of data analysis that can be used systematically to identify, analyse and report themes within any given dataset. This approach has the main advantages of flexibility and ability to be applied in relatively large datasets (Braun and Clarke, 2006). The qualitative data was organised, cleaned, coded and categorised into relevant themes. A concept-driven coding approach was used to identify patterns and similarities among the various pieces of information reported as well as to establish how the patterns relate to the concepts identified in advance by the researcher (Brinkmann, 2013). The data were then entered into the Statistical Package for Social Sciences (SPSS version 25.0) for analysis.

Similarly, quantitative data were analysed in SPSS. Before analysis, data were tested for normality using the Shapiro-Wilk test for normality in order to determine whether to use a parametric or non-parametric tests. The results are reported in the form of tables and graphs in Chapters 6 and 7.

In analysing data using game theory, this study utilised two dimensions that characterise each game, namely; gameplay and game structure. Gameplay included factors such as the players' actions, strategies and motives, given scenarios of household experiences on tourism-agriculture conflicts. The game structure is defined by creating simulation rules for the given scenarios. In this study, data that were used in game theory analysis were qualitative. Cooperative and non-cooperative game theory was used. According to Carraro et al. (2005), in most cases, natural resource management issues depict the features of a Prisoner's Dilemma game. The Prisoners' Dilemma concept of the game theory is said to have had a major influence in the collective action argument coined by new institutional economists (Robin and Staropoli, 2008; Brousseau and

Glachant, 2008). In the game, the players' dominant strategy is not cooperative. This hence results in an equilibrium that is not Pareto-optimal (Carraro et al., 2005).

1.8. Defining the concepts

The following concepts are used throughout the study and therefore need some clarification:

1.8.1. Institutions

According to North (1991: 97), institutions are “the humanly devised constraints that structure political, economic and social interactions; they consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)”. They are essentially ‘rules of the game’ that constrain and enable common pool resource utilisation and governance to avoid the occurrence of the tragedy of the commons. In particular, natural resource institutions are defined as “mutually shared codes and prescriptions that regulate human actions and their relationships by constraining and enabling people's choice sets regarding a particular biophysical element; as well as the means and strategies for ensuring compliance” (Yeboah-Assiamah et al., 2017:2).

1.8.2. Institutional Economics

Institutional economics is understood as the branch of economics that uses a wide variety of literature from other fields of study such as law, sociology, ecology, socio-biology and many others, in order to establish the role played by institutions in directing the economic development and human behaviour (Brousseau and Glachant, 2008).

1.8.3. Sustainable Tourism

The United Nations World Commission on Environment and Development (UNEP) adopted the concept of sustainability in 1987. Sustainable development is loosely defined as development that can meet the current needs without eroding the ability and possibility of future generations to have their needs met (UNEP, 1992). More narrowly, sustainable tourism is defined as tourism

that promotes the “...management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining sustainability in cultural integrity, essential ecological processes, biological diversity and life support systems” (World Tourism Organisation (WTO), 2004).

1.8.4. Agritourism

In some literature, farm tourism, rural tourism and agritourism are used as synonyms (see Wall, 2000; Roberts and Hall, 2001; Barbieri and Mashega, 2008). Some literature sources, on the other hand, reflect that the concepts are similar yet distinct (Sharpley and Sharpley, 1997; McGehee and Kim, 2004). There is a lack of synthesis of various definitions and conceptualisations of agritourism in literature. For example, Wall (2000) defines agritourism as the type of tourism that provides touristic opportunities on farms, while Kizos and Iosifides (2000) refer to agritourism as small-scale tourist activities that are developed in people involved in agriculture in rural areas. This study fuses various meanings of agritourism and defines it as tourism that contributes positively to the socio-economic development of rural areas, within which it is situated and promotes positive interactions between the local traditional stakeholders and tourists without compromising the sustainability of natural resources and social values.

1.9. Ethical considerations

This study has ethical issues by involving human subjects in the data collection process. The confidentiality of the information provided by respondents was respected, and their anonymity was protected. Before answering questions, the respondents were informed about the purposes of the study and the overall meaning of the participation.

Equally, focus group participants were given the background of the study, its purpose and the overall meaning of their participation. The focus group guide was translated to Setswana in order to allow for a better understanding of questions in vernacular (Appendix 3). A professional translator was used. All of the respondents consented by filling up a consent form in either

Setswana (Appendix 5) or English (Appendix 6). Before the collection of empirical data, a research permit was obtained from the Ministry of Land Management, Water and Sanitation (Appendix 7).

1.10. Chapter classification

This first chapter has established the nature of the study, provided a background to the study, outlined the objectives of the thesis and provided an overview of methods used. The second chapter presents a review of the literature on the role of institutions in natural resource management while the third chapter synthesises the literature on sustainable tourism theories and rural livelihoods. Essentially, chapters 2 and 3 provide a thorough analysis of the theoretical and conceptual frameworks of the study.

The fourth chapter provides a detailed description of research methods and paradigms used to address the research goal and questions of this study. The justification and rationale for selecting such methods and methodologies are provided in the chapter. The substantive issues of the research and analysis of results are dealt with in three chapters after the fourth chapter. Chapter 5 uses document analysis to evaluate both formal and informal institutions that govern tourism and agriculture in Botswana, with specific reference to the case study. The chapter also analyses how such institutions influence the existence and the relationship between tourism and agriculture.

Chapter 6 analyses the economic benefits of tourism on local subsistence farmers in the Okavango Delta. The seventh chapter uses empirical data to analyse the conflict and coexistence of agriculture and tourism in the Okavango Delta. The discussions in Chapters 5 to 7 are used in developing a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in the Okavango Delta in Chapter 8. The eighth chapter also presents the conclusion and policy recommendations from the preceding chapters.

CHAPTER 2

NEW INSTITUTIONAL ECONOMICS AND NATURAL RESOURCE MANAGEMENT

“The continuous interaction between institutions and organizations in the economic setting of scarcity, and hence competition, is the key to institutional change”.

(Douglass North, 1998: 15)

2.1. Introduction

Over the years, mainstream economics broadly, and orthodox neoclassical economics particularly have become abstract and divorced from reality (Coase, 1992). This is mostly because orthodox neoclassical economics has virtually ignored and continue to ignore the role of institutions within the economic system (Drobak and Nye, 1997; Rossiaud and Locatelli, 2010). Furthermore, the detachment of orthodox neoclassical economics from reality is attributed to three other reasons. Firstly, orthodox neoclassical economics emphasises on empirical observation over deductive reasoning (Gruchy, 1972 and 1987). Secondly, orthodox neoclassical economics leans towards an evolutionary as opposed to a mechanical approach to the economy (Klein, 2000). Lastly, orthodox economics focuses mainly on collective rather than individual action (Klein, 2000; Ritcher, 2008). These shortcomings have prompted economists and other scholars from various disciplines to shift towards the development of paradigms necessary for reviewing and defining such problems as natural resource scarcity and resource misallocation within a complex interconnected system using the institutional lens (Saleth and Dinar, 2004; Rossiaud and Locatelli, 2010).

The mid-1980s were characterised by the emergence of academic and scholarly work on how institutions can influence sustainable natural resource allocation, use and management (Schotter, 1981; Fudenberg and Maskin, 1986; Agrawal, 1999 and 2001b). While some of the literature tends to situate institutions within a wide range of theoretical approaches applied in natural resources management policy scenarios, others define the influence of such specific

theories as Common Pool Resource (CPR) theory and New Institutional Economics (NIE) theory on natural policy context (Mehta et al., 1999). This chapter analyses the NIE about environmental and natural resource management. The chapter sets off by defining institutions and giving an overview of institutional economics.

2.2. Defining Institutions

The term 'institutions' has a long history in social sciences. It can be traced back to Vico in his *Scienza Nuova* of 1725 (Hodgson, 1989 and 2006). Despite its long history, there is no clear consensus on the definition of institutions (Commons, 1931; Mehta et al., 1999; Hodgson, 2006). The conceptualisations of the term vary greatly over history and across academic disciplines. Perhaps the widespread use of the term in several disciplines, such as economics, sociology, politics and philosophy, among others, is a contributory factor for lack of unanimity in the definition of this concept.

Commons (1931: 648) defines an institution as "... collective action in control, liberation and expansion of individual action. Its forms are unorganised custom and organised going concern". According to Commons (1931), individual action entails such economic activities as bargaining and rationing of transaction costs. The latter activity implies that individuals are faced with greater-than-zero transaction costs. Mehta et al. (1999), however, argue that the conceptualisation of collective action derogates from such issues as power differentials while promoting a homogenous view of the community, which is not necessarily an accurate reflection of reality.

Furthermore, it is argued that the description of institutions within rigid lines of formal or informal presupposes that there is a non-interactive divide between formal and informal while downplaying the "messy middle" (Mehta et al., 1999: 6). Formal institutions, on the one hand, are defined as consciously written rules (such as legislative enactments, bye-laws, regulations and contracts) which structure the political, social and economic interactions of agents in the

society (North, 1990). Informal institutions, on the other hand, are understood as self-imposed, self-monitored conventions and norms that structure the interactions and relations between agents and their environment. Informal institutions are often deeply embedded in culture and societal ideology (Colding and Folke, 2001). Table 2.1 summarises the characteristics of formal and informal institutions.

Table 2.1: Characteristics of formal and informal institutions

Characteristics	Formal	Informal
Laws	+	
Conventions and norms		+
Written	+	
Consciously designed	+	
Self-imposed		+
Self-monitored		+
Third-party enforced	+	
Costly to enforce	+	
Hard to change		+

(Source: Colding and Folke, 2001: 585)

Colding and Folke (2001) highlight that even though formal and informal institutions can be defined using their respective features, distinguishing the two is not always feasible. In reality, there is a possibility of overlaps between different institutional domains. This is because societal norms and conventions may be formalised into rules, warranting enforcement through state laws (Colding and Folke, 2001). Moreover, formal institutions often depend on informal institutions for their efficacy (Bromley, 2008b). The process of emergence of new formal institutions is often a secondary process that uses data or knowledge from already existing informal institutions to set the precedence of common law (Bazzoli, 2000; Bromley, 2008b).

In defining institutions, it is essential to understand the distinction between ‘institutions’ and ‘organisations’. The distinction is, however, marred with entanglements and contradictions. North (1990) distinguishes institutions from organisations by defining institutions as rules of the game, and organisations as players of or in the game played. However, Hodgson (2006) clarifies

that organisations should not necessarily be holistically defined as players, but rather ‘organisations as players’ should be adopted as an abstraction for particular analytical purposes. In an attempt to distinguish organisations from institutions, Ménard (1994) states that institutions are stable rules, crystallised in customs, laws and traditions, while organisations are institutional arrangements. Hodgson (2007), on the other hand, visualises organisations as subsets of institutions. Ménard and Shirley (2008: 283) conceptualise an organisation as a “nexus of contracts”, where contracts are institutions. Similarly, Linarelli (2010) defines organisations as institutions. For this study, organisations are defined as structural, institutional arrangements that serve as a framework for structuring relational actions between agents.

Institutions are also defined as “enduring regularities of human action in situations structured by rules, norms, and shared strategies, as well as by the physical world. The rules, norms, and shared strategies are constituted and reconstituted by human interaction infrequently occurring or repetitive situations” (Crawford and Ostrom, 1995, 582). Within this context, rules are understood to be prescriptions that constraint, permit or require a specific action, enforceable through formal or informal sanctions. There needs to be a shared understanding of the rules in order to attain stability of rule-oriented interactions (Ostrom et al., 1994).

The rules that structure the interactions between human beings and natural resources are organised at three primary levels, namely operational rules, collective action rules and constitutional-choice rules (Kiser and Ostrom, 1982; Imperial, 1999; Yeboah-Assiamah, 2017). Collectively, the three levels of rules provide parameters to guide and direct human actions concerning natural resources utilisation by defining the cost of deviation and boundaries of permissible and restricted access. The descriptions of each of the levels are summarised in Table 2.2 as follows:

Table 2.2: Levels of rules

Type of rule	Description
Operational rules	Decisions about when, where, and how to do something, who should monitor the actions of others, how actions should be monitored, what information should be exchanged or withheld, and what rewards and sanctions will be assigned to combinations of actions and outcomes (e.g., appropriation, provision, monitoring, and enforcement).
Collective action rules	They influence operational activities by determining how operational rules can be changed and who can participate in these decisions (e.g., policy-making, management, and adjudication).
Constitutional-choice rules	They influence operational rules by determining who is eligible to participate and collective choice rules by determining how they are changed (e.g., governance and modification of constitutional decisions).

(Source: Imperial, 1999: 453)

North (1986: 231) describes institutions as “... regularities of repetitive interactions among individuals”. They serve as a framework used to constrain and guide human behaviour by providing a set of incentives and disincentives for human actions (North, 1986). Numerous scholars argue that for institutions to guide human behaviour, an authority system is required (Hodgson, 2007; Bromley, 2008a). The sovereign system is necessary for enforcing the institutions’ proscriptions and prescriptions. North (1986) further defines institutions as rules and customs that govern and regulate human action. These descriptions may be understood to mean that institutions are not only crucial in restraining human or social action, but also in enforcing punishment for economic agents who act against the outlined constraints. Further, the definitions imply a bidirectional causal relationship between institutions and individual agents.

In light of the latter argument, Hodgson (2007: 108) states “... any single individual is born into a pre-existing institutional world, which confronts him or her with its rules and norms.” Primarily, individuals are instituted agents from birth. They have instituted agents because they are born

into societies with complex webs of power, conversions, norms, taboos and other institutions that define their very existence. They are born already embedded in an existing set of rules, traditions and customs (Bazzoli, 2000). Hodgson (2015) cautions that the causal relationship between institutions and individuals does not imply that institutions entirely or uniformly determine the boundaries of the individual's aspirations.

Wang et al., (2012) description of institutions concurs with that of North (1986), wherein institutions are described as humanly devised constraints that guide social, economic and political interactions of agents in a system. However, limiting the definition of constraints leans more towards the discussions of institutions in neoclassical economics where constraints are emphasised over mutual acceptance (Dequench, 2006). Mehta et al. (1999: 7) define institutions as "... sites of social interaction, negotiation and contestation comprising heterogeneous actors having diverse goals". The diversity in goals necessitates participatory and inclusionary decision-making processes. It also requires the promotion of institutional flexibility (Mehta et al., 1999). Institutional flexibility appreciates the dynamism of institutions. Leach et al. (1997) succinctly argue that institutions must be flexible enough to confront issues of conflict, power and uncertainty. Therefore, institutional arrangements must be dynamic.

The primary objective of institutions is to create certainty and improve the predictability of human behaviour (Pejovich, 1995). They also facilitate order in human interactions by stabilising expectations (North, 1990; Galiani and Sened 2014). These objectives depend on the broader appreciation of the dynamic nature of the agents' responses to uncertainty (Mehta et al., 1999). Institutions propagandise the realisation of positive outcomes "by helping actors resolve 'social dilemmas' produced when individually rational actions aggregate to produce socially irrational outcomes" (Imperial and Yandle, 2005: 494). They curb the effects of the free-rider problem, self-interest and irrationality in natural resource use and management.

Natural resources, especially those characterised by limited or total lack of excludability and rivalry need to be protected by robust, effective, efficient and equitable institutions to ensure

sustainability. The institutions need to clearly define the boundaries of exploitation and use of such resources to prevent the problem of overharvesting and overexploitation inherent in CPR. This argument stems from the definition of institutions as:

“the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions” (Ostrom, 1990: 51).

Both institutionalists and neoclassical economists coincide at the supposition that in the absence of restraints on CPR use, undesirable outcomes such as overexploitation and ultimately depletion may result (Ostrom, 1990; Baland and Platteau, 1996; Bandaragoda, 2000; Agrawal, 2001b; Libecap, 2009). The constraints should not only make regard of the social costs and benefits of resource use to allow for broader and more inclusive net benefit (Agrawal, 2001b; Libecap, 2009) but also appreciate the working or operational institutions within different settings (Ostrom, 1990).

2.3. Institutionalism and Institutional Economics

Walton Hamilton first announced the term ‘institutional economics’ at the American Economic Association in 1918 (Hodgson, 2000). Hamilton (1919: 318) states that “neoclassical economics ... neglected the influence exercised over conduct by the scheme of institutions”. Between the 1920s and 1930s, Thorstein Veblen and John Commons, among others, made institutional economics one of the most prominent paradigms by incorporating institutions and institutional change arguments within the economics discipline (Hodgson, 1989). Their views largely critiqued the orthodox economics assumptions.

According to Rutherford (2001), institutional economics was considered more ‘scientific’ than orthodox economics. This is because, insofar as empirical research was concerned, institutional economics embraced it better than orthodox economics (Rutherford, 2001). Institutional

economists, notably Veblen, influenced the methodological shift with an emphasis on the need to use inductive empirical generalisation and historical approach in economic analysis (Hebert, 1947). The shift was viewed as a transformation of economics into modern science. Furthermore, institutional economics appeared to be more aligned with other related disciplines and their respective research (Calliess and Zumbansen, 2010).

In his description of institutional economics, Hamilton (1919) made five main propositions that he believed were the basic tenet of institutionalism. Some of such propositions are, (i) institutional economics is a multidisciplinary discipline which borrows ideas and data from such fields as anthropology, sociology and psychology, among others, to enrich economic analysis concerning human behaviour, (ii) since institutions are an integral element of any economy, economists need to study and analyse institutional change, and institutional processes, (iii) the assumption of orthodox economics that individuals in a society are utility-maximising agents is inadequate, and (iv) the economy is deeply embedded in political, social, cultural and power relations, therefore it is an open and evolving system (Hamilton, 1919; Hodgson, 1989; Rutherford, 1995).

In its prime days, institutional economics succeeded in drawing interconnections between law and economics (Hale, 1923; Commons, 1924; Hamilton, 1938). Institutional economics helped in illustrating how legal apparatus such as contracts and property rights may lead to positive economic growth and a reduction in transaction costs (Williamson, 1997). The success of institutional economists lied in their ability to decipher how market transactions took place within the boundaries of bargaining and hierarchy (Rutherford, 2001), as well as with the economic and legal context (Samuels, 1973). One of the notable successes of institutional economics was redefining efficiency in the context of transaction costs reduction (Rutherford, 2001). However, past its prime days, institutional economics failed to develop grounded theories of transactions, legislature and social norms beyond Veblen and Commons' stage (Rutherford, 2001). The discipline also lacked proper theoretical foundations to sufficiently define human behaviour (Koopmans, 1947).

At the centre of institutional economics are two research paradigms (Rutherford, 1995) or traditions of institutionalist thought in economics (Rutherford, 1997), namely the “old” institutional economics (OIE) and the “new” institutional economics (NIE). The central tenet of these schools of thought is pillared on two propositions. First, “institutions do matter”, and second, “the determinants of institutions are susceptible to analysis by the tools of economic theory” (Matthews, 1986: 903). While these share a common concern that institutions and institutional change should be incorporated in economic analysis, they are distinguishably dissimilar in approach. The following sections give an overview of the OIE and the NIE.

2.4. Old Institutional Economics and the Veblenian Viewpoint

The most important defining attribute of the OIE is the interpretation of economic agents. The OIE strongly opposes the neoclassical economists’ conceptualisation of human behaviour and individual agents’ choices. Veblen (1919) characterises the neoclassical economics characterisation of human nature as faulty. In his writing, Veblen (1919: 73) emphasises that:

“The hedonistic conception of man is that of a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area but leave him intact. He has neither antecedent nor consequent. He is an isolated, definitive human datum, in stable equilibrium except for the buffets of the impinging forces that displace him in one direction or another. Self-imposed in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down upon him, whereupon he follows the line of the resultant. When the force of the impact is spent, he comes to rest, a [self-contained] globule of desire as before. Spiritually, the hedonistic man is not a prime mover.”

Based on their vehement opposition to the description of the economic agents as rational actors, old institutional economists abandoned this neoclassical economics conceptualisation. OIE rejects the rationality and self-interest hypothesis from the neoclassical economics framework (Castle, 1999; North, 1990, 1991; Rutherford, 1995 and 2001). They replaced the Newtownian

conceptualisation of the economic agent as an inert matter with the proposition that human beings are a product of culture (Mayhew, 1989). The argument is that its cultural context guides economic behaviour. These institutionalists worked within a framework that emphasised the path-dependent nature of institutional change (Rutherford, 2001). Essentially, institutions serve as an embodiment of ways of behaving and thinking through varying timeframes. In their argument, institutional change is an ever-evolving process, and hence, economic agents' values and preferences sway within the boundaries of inherent institutions.

Veblen and other old institutionalists labelled the neoclassical economics theory as a formal grand theory that fails to give answers needed in a complex and complicated economy (Colander, 1996). They proposed a shift from formalism to anti-formalism. It is argued that OIE displayed little to no interest in cumulative theory building (Shepsle, 1989). Instead, the critical focus of OIE was neither on theory building nor theory explanation, but rather on theory description (Easton, 1971; Eckstein, 1979). This school of thought thereby earned itself a label of 'atheoretical' (Castle, 1999). Coase (1984:230) argues that "Without a theory [old institutional economists] had nothing to pass on except a mass of descriptive material waiting for a theory, or a fire mass of descriptive material waiting for a theory, or a fire." Similarly, Langlois (1989:271) postulates that "the [OIE] lacks methodological consistency and overall persuasiveness because of the preconceptions it took from the philosophy of pragmatism and its late nineteenth-century attitude towards science." These inadequacies in the OIE ultimately led to the failure of the school of thought in its bid to shape the direction of modern economics (Nee, 2003).

While describing why OIE failed, Williamson (2000:596) quotes Kenneth Arrow as follows:

"Why did the older institutionalist school fail so miserably, though it contained such able analysts as Thorstein Veblen, J. R. Commons, and W. C. Mitchell? I now think that . . . [one of the answers is in the] important specific analyses . . . of the New Institutional Economics movement. But it does not consist of giving new answers to the traditional questions of economics-resource allocation and the degree of utilisation. Rather, it consists of answering new questions, why economic institutions emerged the way they did and not otherwise; it merges into economic history, but brings sharper [micro-analytic] . . . reasoning to bear than had been customary".

Veblen, Commons and other institutionalists “adopted [a] posture of methodological hostility” (Williamson, 1990a:64) to neoclassical economics, whereas NIE systematically operationalised the insights from predecessor theories. The greatest strength of NIE arguably lies on its emphasis that institutions are predisposed to analysis using various tools of economic analysis. As this study adopts and applies the NIE framework, it is, therefore, essential to discuss the NIE in detail in the next section.

2.5. The New Institutional Economics

While some literature traces the roots of NIE to Coase’s analysis of the firm (Klein, 1999), other sources trace the discipline back to Adam Smith and David Hume (Hodgson, 1989). The latter argument stems from the premise that the fundamental NIE’s assumption of individuals as economic agents is also fundamental to classical liberalism. On the other end of the spectrum are some scholars who attest that Carl Menger’s organic theory gave rise to NIE (Langlois, 1986; Vanberg, 1989). In support of this claim, Langlois (1986:5) states, “Menger has perhaps more claim to be the patron saint of the New Institutional Economics than any of the original institutionalists.”

Nonetheless, there seems to be a consensus that NIE, as it is today, is a merger of ideas from different scholars working towards pieces of the whole. For example, Ronald Coase and Oliver Williamson are viewed to be at the forefront of governance economics using micro-institutional analysis. Andrew Schotter is argued to be at the realm of game theory development, macro-institutional economics is believed to be led by Douglass North, and Elinor Ostrom is argued to be the leader of an integrative school of thought (Ménard and Shirley 2011 and 2014). Another point of convergence is that the term ‘New Institutional Economics’ was coined by Oliver Williamson (Hodgson, 1989; Ménard and Shirley 2011 North, 1992; Williamson, 1975).

The focus of NIE, like its older predecessor, is to systematically extend the economic analysis by explaining institutions using multidisciplinary and interrelated approaches (Vanberg, 1989; Groenewegen et al., 1995). NIE, however, disdains holism methodology that was upheld by OIE. Klein (1999:457) explicitly states that the main difference between the two institutionalism is that “NIE follows strict methodological individualism”. The fundamental precept of methodological individualism is an individual with a given set of preferences (Groenewegen et al., 1995). In contrast, according to the neoclassical approach, “individuals are pictured abstractly as given, with given interests, wants, purposes, needs, etc.” New institutionalists argue that an individual is a fundamental unit. Asch (1952:257) rejects the assumption of the ‘abstract individual’ by classical economists by remarking that, “the unit is not an individual but a social individual, one who has a place in the social order . . . To understand the individual, we must study him in his group setting; to understand the group we must study the individuals whose interrelated actions constitute it.” According to new institutional economists, in reality, preferences are somewhat inclined to the institutional environment (Groenewegen et al., 1995). Therefore, legal, economic and historical institutions shape human behaviour and choices.

Another point of nonconformity between OIE and NIE is that when the former is opposition to the neoclassical economics foundations, the latter emerges within the neoclassical economics theoretical foundations (Vanberg, 1989). Instead of rejecting neoclassical assumptions like its older counterpart, the NIE relaxes three neoclassical assumptions. These assumptions are “costless exchange, perfect information and unlimited cognitive ability” (North 1993: 36). In essence, NIE argues that factors such as transaction costs that are greater-than-zero, the opportunistic behaviour of agents and the existence of information asymmetries should be infused into the economic analysis as they could affect the conclusions of the study (Rossiaud and Locatelli, 2010; Madigele, 2015). Information production organisations and marketing networks exemplify the existence greater-than-zero transaction costs and costliness of information (Stiglitz, 1986). Similarly, mental sieves such as beliefs, culture, taboos and norms, among others, come into play leading to bounded rationality when economic agents are faced

with information asymmetries and costly transactions (Williamson, 1975; Hodgson, 1989; North, 1992; Ménard and Shirley 2011).

At the core of NIE, Williamson (1997) asserts, is the role played by the institutional environment in inducing changes in the governance structure and in guiding human choices and economic behaviour. Klein (1999: 458) defines 'institutional environment as "background constraints, or 'rules of the game', that guide individuals' behaviour". Similarly, Davis and North (1971) refer to the institutional environment as a set of fundamental doctrines that regulate the production, exchange and distribution processes in the economy (Davis and North, 1971; Williamson, 1995).

In the causal model theorised by NIE adapted from Williamson (1995:213) and Nee (2003:4) (Figure 2.1), the rules of the game can be the explicit and formal rule or implicit and informal rules. The distinction between formal and informal institutions is made in Section 2.5.1. Institutional arrangements are subject to a set of shift parameters. These parameters include sanctions, conventions, traditions, contract laws, property rights, ideologies, norms and customs (Williamson, 1995; Nee, 2003; Menard and Saleth, 2011).

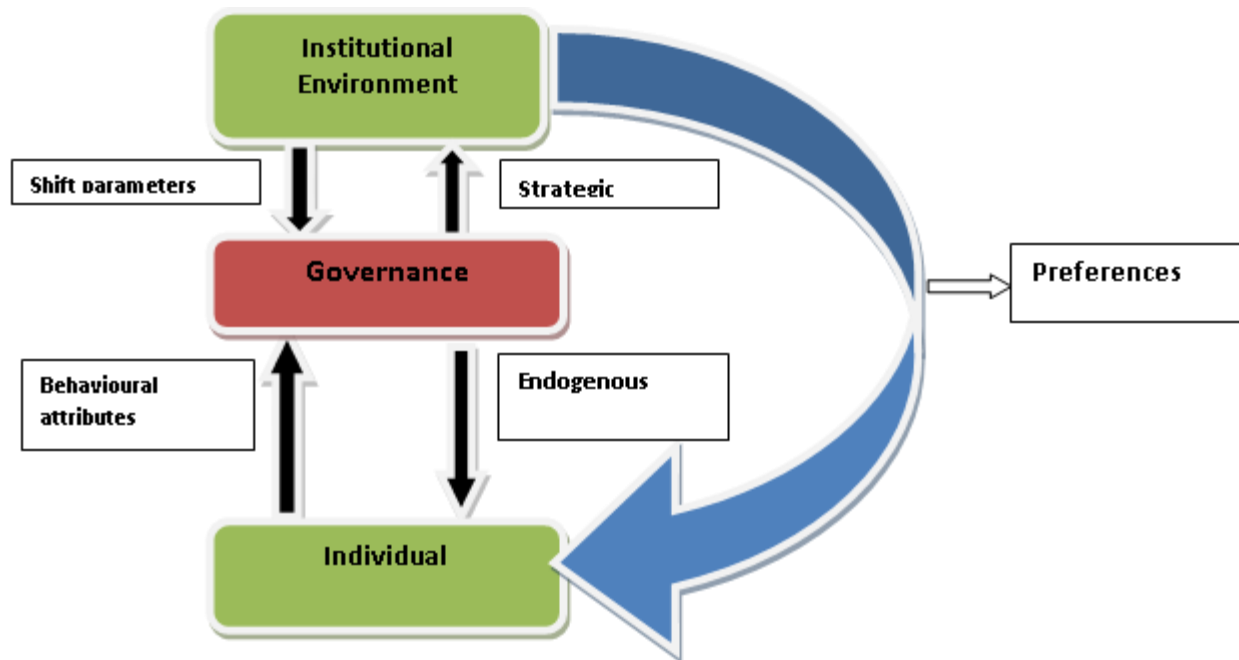


Figure 2.1: A causal model hypothesised by the new institutional economists (Sources: Williamson, 1995; Nee, 2003; Madigele, 2015)

The second row of the model consists of specific guidelines referred to as governance structures (Williamson, 1995; Nee, 2003). Groenewegen et al. (1995: 470) define the governance structure as “the institutional matrix within which transactions are negotiated and executed”. There are three generic forms of governance structures, namely market governance, hybrid governance and hierarchies (Williamson, 2005). Market governance deals with market and quasi-market arbitrated transactions. The disputes or conflicts that arise from these transactions are settled through court ordering (Williamson, 1975).

Hybrid governance works in transitional arrangements “among legally autonomous entities doing business together, mutually adjusting with little help from the price system, and sharing or exchanging technologies, capital, products, and services, but without unified ownership” (Ménard, 2004: 348). Hybrid governance works where there is a mix of competition and cooperation. It neither leans towards the command of hierarchies nor the role of price in markets. Private ordering is used to ensure order between the conflicting or cooperating parties

(Williamson, 2005). In hierarchies, the roles of the courts are limited to resolving conflicts related to fraud and conflict of interest (Richter, 2008).

Governance structures serve as mediators, for instance, in the incidence of conflict between two parties with divergent interests over scarce natural resources. An example of institutional arrangements is contractual agreements (Williamson, 1995; Klein, 1999). In instances where the government offers inadequate or unreliable protection for property and resources, bilateral private ordering is needed to preserve order and to enable adaptation to disturbances (Williamson, 2005). The relevance of contractual agreements in natural resources management is expanded in Section 2.6. The role played by governance structure in crafting order and mitigating conflict over limited resources is critical in ensuring the realisation of mutual gains among conflicting parties. In natural resource management, the governance structure is essential for regulating the relationships between agents with conflicting natural resource uses in order to offset conflict, provide stability and maximise their gains accrued by the agents at the least possible cost.

In the causal model, preferences are not exogenously outlined. The model assumes that the preferences are endogenously influenced by the institutional environment (Groenewegen et al., 1995). According to new institutionalists, individual agents make decisions rationally in consideration of the constrictions and incentives created by the institutional environment (Williamson, 1993; Groenewegen et al., 1995). Consequently, there are considerable variations on the preferences depending on the incentives and created by the governance structure and the institutional environment.

The causal model hypothesised by the new institutional economists in Figure 2.1 does not explicitly define the interconnectedness of the NIE with neoclassical economics. New institutional economists argue that the roles of economic, political, social and cultural institutions of economic activity can be expounded through four interconnected and interdependent levels of social analysis illustrated in Figure 2.2 (Williamson, 2000; Menard and Shirley, 2005; Lieberherr, 2009).

The new institutionalists' inclination to define NIE using predominantly levels 2 and 3 (Williamson, 2000) makes them overlook the role of informal institutions in shaping the outcomes of formal institutions. As argued by Helmke and Levitsky (2004:75), "informal institutions, ranging from bureaucratic and legislative norms to clientelism and patrimonialism, shape even more strongly behaviour and outcomes. Scholars who fail to consider these informal rules of the game risk missing many of the most incentives and constraints that underlie political behaviour". Therefore, in this study, NIE is defined regarding levels 1, 2 and 3. The significance of level 4 in this study is to reflect the relationship of mainstream neoclassical economics with NIE.

New institutional economists integrate the study of institutions into neoclassical economics and explore the implications for human behaviour, economic development and policy reform. Level four institutions in Figure 2.2 are continuous institutions that allow for the regular operations of the economy given the preceding institutions encompassed by the other three levels (Glachant, 2008; Lieberherr, 2009). These comprise of institutions of resource allocation and employment creation (Williamson, 2000; Brousseau and Glachant, 2008; Lieberherr, 2009). New institutionalism, through the conceptualisation of levels of economic institutions, examines and analyses the processes and interactions that lead to a coordinated exchange between agents (North, 2005).

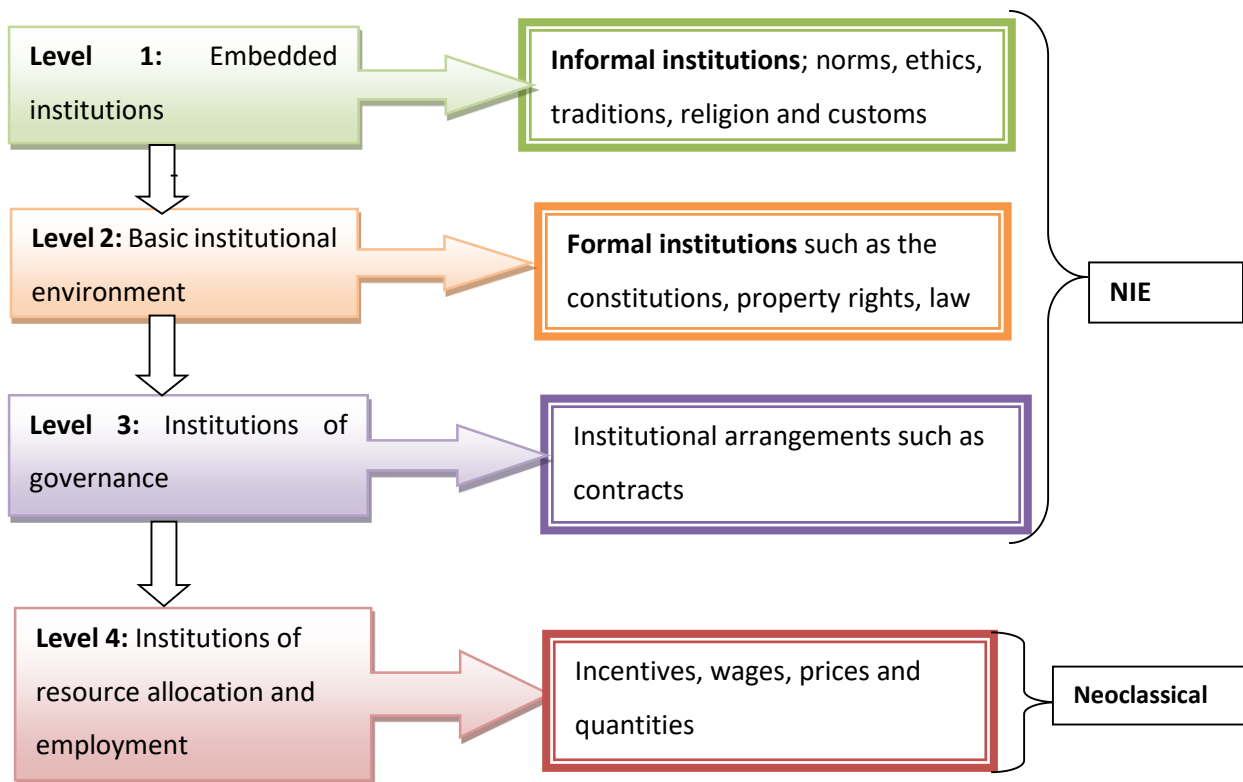


Figure 2.2: Levels of economic institutions. (Sources: Williamson, 1998 and 2000; Brousseau and Glachant, 2008; Lieberherr, 2009; Madigele, 2015)

The value of the contribution of NIE is not only in the advancement of an overarching theoretical grounding. Through clearly defining the links between neoclassical economics and NIE in four levels of social analysis, new institutionalists are argued to have significantly progressed in baring and “explicating the microanalytic features to which Arrow refers and by piling block upon block until the cumulative value added cannot be denied” (Williamson, 2000: 596). Having defined institutions in-depth, the following subsection will make a distinction between formal and informal institutions.

2.5.1. Distinguishing between formal and informal institutions

Over the years, several scholars have given increasing attention understanding the role of institutions in natural resource (Drobak and Nye, 1997; Smith, 1998; Saleth and Dinar, 2004;

Rossiaud and Locatelli, 2010). Their studies have focused on developing paradigms necessary for evaluating problems of resource mismanagement, misallocation and scarcity within a complex interconnected system. Although the studies differ in approach, the fundamental postulation is that institutions needed for efficient, effective and equitable natural resource management fall in either of, or somewhere in between, the two broad categories of institutions, namely formal institutions and informal institutions. In essence, NIE analyses the interactions between formal and informal institutions, and their influence in economic and environmental outcomes when the transaction costs are favorable. The analysis of these interactions can be done through the Institutional Analysis and Development (IAD) framework illustrated in Figure 2.3.

According to the IAD, there are three categories of variables that influence the pattern of interactions among individuals in an action arena (Ostrom et al., 1994; Imperial, 1999). Imperial (1999: 454) states the categories as follows:

“First, interactions are influenced by the explicit and implicit assumptions about the rules used to order relationships between individuals... Second, the IAD framework suggests that to be effective, rules must also be compatible with the underlying physical and biological setting... Finally, the IAD framework argues that inter-organisational relationships will be influenced by the attributes of the community where the actors are located.”

In the model, the action arena is the social space within which agents “interact, exchange goods and services, solve problems, dominate one another and fight” (Ostrom 2011: 11). Imperial (1999) argues that in natural resource management, the institutional analysis is a necessary tool. The institutional analysis illustrates how groups of individuals can adopt the rules to solve problems in natural resource use. The evaluation criteria of natural resources institutions are discussed in Section 2.6.

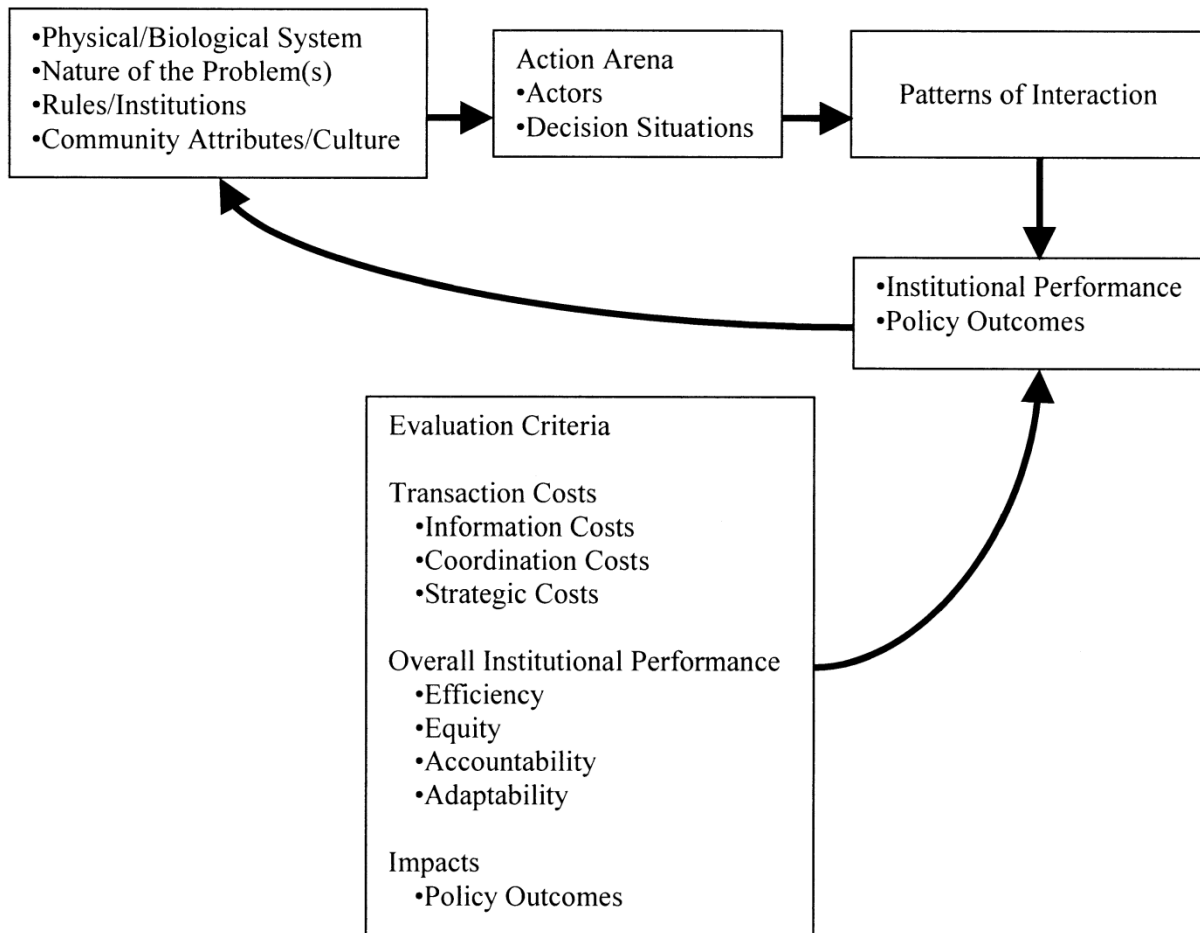


Figure 2.3: Institutional Analysis and Development (IAD) Framework. (Source: Ostrom, 2009)

The rules often operate configurationally and are nested within a set of different rules (Ostrom, 1986; Imperial, 1999). Therefore, there is often interdependency and interactions in the operation of the rules. In order to appreciate how natural resources are managed within a setting, it is essential first to understand how the operational formal and informal institutions interact with one another (Imperial, 1999). The distinction between the two is discussed in the following sections, with a bias towards their application and relevance in natural resource management.

2.5.1.1. Formal institutions in natural resource management

Insofar as natural resources management is concerned, there needs to be formal or informal apparatus for sanctioning the behaviour and choices of the users. These are crucial in ensuring that the resources are used with no or limited conflict, and for safeguarding their sustainability. Lauth (2000: 24) describes formal institutions as “openly codified” institutions. Helmke and Levitsky (2004: 726) expand this definition by defining formal institutions as “rules that are openly codified, in the sense that they are established and communicated through channels that are widely accepted as an official”. Formal institutions receive their legitimacy through the state (Lauth, 2000). That is, the state sanctions deviations from formal rules, laws, regulations and norms. Formal institutions derive their power of sanction from both social mechanisms of exclusion or limiting access (Lauth, 2000). Examples of formal institutions include laws, political systems, contracts, organisations and markets.

Formal institutions as used in the context of natural resources governance are, therefore, characterised by:

- “(i) National and federal constitutions, statutes, laws, directives and local government laws regarding natural resources,
- (ii) The activities, procedures and operations sanctioned by state agencies and officials,
- (iii) Rules that are authoritatively passed [with public or state power] to govern a particular resource and to shape relationship between stakeholders and the resources,
- (iv) Rules that are generally binding with prescribed enforcement complementarities,
- (v) Adequate certainty of outcomes when one deviates from such rules and generally not borne out of discretion” (Yeboah-Assiamah et al., 2017:2).

The nature of formal institutions can be influenced and altered by actors with rule-making authority (Lauth, 2000) and is subject to little or no discretion. The latter is especially crucial in creating certainty and uniformity in decision-making processes while leaving no room for corruption and rent-seeking tendencies for those in rule. The rules can be enforced through two main approaches, namely centralised and decentralised policy-making. The quality of policy outcomes mostly relies on the approach employed in policy-development.

In a centralised policy-development system, a top-down hierarchal approach where policy-formulation and sector planning is designed by ministries using information gathered from natural resource users' associations and local government structures is adopted (Saleth and Dinar, 2000). The central system relies on the appointment of central bureaucrats at each level to exercise a prescribed form of authority through liaison, coordination, monitoring, and control. The authority is exercised *ex-ante* with a bulk of decision-making responsibilities on central authorities because these institutions are enforced by a third party, usually the state. The benefits of using a centralised policy-development system include equity in the provision of public goods, stabilisation of macroeconomic policies, the creation of a single market through trade barriers, and redistribution of resources across citizenry (Tabellini, 2003; Madigele, 2015). However, the one-size-fits-all approach of the centralised system neglects the diversity and complexity of natural resources utilisation and needs in various communities (Plummer and Slaymaker, 2007).

Conversely, the decentralised system permits local communities to have structures of state and personnel to act for and enforce the deeds of the central authority (Yeboah-Assiamah et al., 2017). The decentralised system involves local governments and users of natural resources in policy-formulation through encouraging networking, building relationships and emphasising negotiation and collective action (Tropp, 2007). However, conclusions on the efficiency of decentralised natural resources management from studies in developing countries revealed that this system is yet to uniformly yield the efficiency gains or the anticipated environmental benefits (Gleick and Wolff, 2002; Wilder and Lankao, 2006; Calabrese et al., 2012).

Generally, formal institutions provide the weight of authority in the governance of natural resources. They also create harmonisation and standardisation of the practices and customs in order to ensure equity in their enforcement by central authorities. The degree of effectiveness of formal institutions is defined by the extent to which written rules and procedures are enforced and complied with in practice (Helmke and Levitsky, 2004). Ineffective formal institutions often have low chances of enforcement and low probability of enforcing the consequences of deviation.

2.5.1.2. Informal institutions in natural resource management

Through a state-societal conceptualisation lens, informal institutions comprise of “civic, religious, kinship, and other ‘societal’ rules and organizations” (Helmke and Levitsky, 2003:8). This conceptualisation fails to account for informal rules that govern agents’ behaviour within state institutions as well as for formal rules that govern non-state organisations (Helmke and Levitsky, 2003 and 2004).

Alternatively, informal institutions can be conceptualised through the rule enforcement lens. Through this lens, informal institutions are defined as self-enforcing institutions constituting of members with reciprocally best responses to one another (Knight, 1992; Lauth, 2000; Helmke and Levitsky, 2003). This implies that informal institutions through self-enactment. Lauth (2000) argues that this definition implies that informal institutions receive their legitimacy through auto-licensing, and subsequently through self-assertion. However, this conceptualisation fails to accommodate the occurrence of third-party enforcement of informal institutions (Calvet, 1995; Helmke and Levitsky, 2003 and 2004).

In order to address the deficiencies above in the conceptualisation of informal institutions, Helmke and Levitsky (2004: 724) define informal institutions as “socially shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels”. Using a similar line of argument, Yeboah-Assiamah et al. (2017) conceptualise informal institutions using several indicators, some of which include; “(i) social and cultural beliefs and norms, (ii) mostly not codified, (iii) non-state sanctioned regulations, [and] (iv) systems enforced by actors [local people] themselves” (pp. 3).

Although informal institutions are not laid down in writing, they are known, enforceable and recognisable publicly (Lauth, 2000). While formal institutions are guaranteed by state authorities, “informal institutions are based solely on the fact of their existence and their effectiveness” (Lauth, 2000: 24). Generally, informal institutions play an essential role in ensuring access of

individual agents and communities to natural capital (Berkes et al., 2000). The rules, obligations, norms and knowledge embedded in the traditional communal management of natural resources, for instance, lead to a degree of sustainability in the utilisations and access to natural resources. Berkes et al. (2000) argue that the knowledge is a reflection of human capital, while Paavola and Adger (2002) advance that the traditional management of natural resources is a reflection of the society's social capital.

NIE literature submits that the presence of strong and legitimate informal institutions and traditional leadership often leads to conservation of natural and environmental resources, as well as their overall sustainability (Shackleton et al., 2002; Larcom et al., 2016). The taboos, cultural beliefs and traditional norms serve as customary rights and generationally transferred rules that protect, sustain and direct the use of natural resources. Although they are not codified like formal institutions, they are controlled and regulate the interactions of people in specific settings with their natural environmental resources. Miller's (2003) study on the value of traditional and informal institutions on the sustainable use of natural resources concluded that combining informal institutions with contemporary democratic elements is especially important for conservation and sustainability of natural resources.

When formal and informal institutions coexist and mutually reinforce each other, the relationship is referred to as a complementary relationship (Lauth, 2000). In this case, informal institutions coexist with effective formal institutions and "fill in the gaps either by addressing contingencies not dealt with in the formal rules or by facilitating the pursuit of individual goals within the formal institution's framework" (Helmke and Levitsky, 2004: 728). Complementary informal institutions are crucial for enhancing effectiveness and efficiency in the management of natural resources. In instances where formal institutions 'exist merely on paper', complementary informal institutions are essential for strengthening the incentive for compliance with formal institutions (Lauth, 2000; Helmke and Levitsky, 2004). The outcome of complementary relationships is convergence as indicated in Table 2.2.

Contrariwise, when the two types are incompatible, they are said to be in a conflicting or competing relationship (Lauth, 2000; Helmke and Levitsky, 2004). Conflicting informal institutions thrive where formal institutions are not systematically enforced (Helmke and Levitsky, 2004). When there is lack of systematical enforcement of informal rules, natural resource users have no incentive of complying. They may choose to either violate or ignore the institutions (Helmke and Levitsky, 2004). In case of conflicting relationships, courts are mandated to create order through interpreting, codifying, formalising, sanctifying and canonising the best practice out of existing contradictory practices (Bromley, 2006).

Other types of formal-informal relationships are substitutive and accommodative relationships. On the one hand, the former exist when compatible outcomes of informal institutions are combined with ineffective formal institutions (Lauth, 2000; Helmke and Levitsky, 2004) as reflected in Table 2.3. Substitutive informal institutions emerge where formal institutions are not systematically enforced to effectively manage natural resources. They bloom where formal institutions fail to achieve their mandated objectives (Helmke and Levitsky, 2004). Accommodative relationships, on the other hand, emerge as a result of combining different outcomes with effective formal institutions (Lauth, 2000; Helmke and Levitsky, 2004). The resulting informal institutions from accommodative relationships “create incentives to behave in ways that alter substantive effects of formal rules, but without directly violating them; they contradict the spirit but not the letter, of the formal rules” (Helmke and Levitsky, 2004: 729).

Table 2.3: Types of formal-informal institutions relationships

Outcomes	Effective informal institutions	Ineffective informal institutions
Convergent	Complementary	Substitutive
Divergent	Accommodating	Conflicting or competing

(Source: Helmke and Levitsky, 2004)

Considering the complications and complexities of the relationships with human actors and their natural environment, there is a need to develop appropriate approaches suitable for managing

complex systems. This, in turn, necessitates a thorough understanding of the relationships between various stakeholders using natural resources and various institutions managing the resources. The adoption of a “one-size-fits-all” approach by the state in the imposition of formal institutions on a large number of communities occupying different areas with varied ecological, geological and sociological features, often leads to adverse impacts on the conditions of natural resources (Ostrom, 2004).

Ostrom (2004), therefore, argues that achieving a successful allocation efficiency of natural resources depends on recognising, appreciating and respecting informal institutions that communities have in place. “A proper understanding of the nature and functioning of local structures serves as a strong foundation for predicting the incentive shifts and responses to [formal institutions] enforced by the government” (Madigele, 2015: 22). Therefore, it is necessary to establish formal-informal relationships that; (1) promote the efficient and effective use of available information and natural resources; and (2) avoid duplication and fragmentation of the responsibilities and authorities of existing institutions. Coordinated efforts and complementarity of institutions have the potential of improving natural resources governance and addressing complex natural resource management issues (Imperial, 1999). The following section discusses the indicators used for evaluating the level of governance within natural resource management institutions.

2.6. Evaluation Criteria of Natural Resource Management Institutions

Through the IAD framework (see Figure 2.3) new institutionalists seek to lay out a framework that can be used to analyse and evaluate institutional governance, effectiveness and overall institutional. According to institutionalists, ineffective institutional governance exposes natural resources to overuse, overharvesting and mismanagement (Dietz et al., 2003). However, the heterogeneity of locations, resources, resource needs and institutional governance systems in place make it difficult, and almost impossible, to have a unique conceptualisation of ‘suitable’ or ‘model’ institutional arrangement (Agrawal, 2001b; Griffiths et al., 2007; Libecap, 2009).

Therefore, the evaluation criteria for assessing natural resource institutions proposed by the IAD framework should be taken as a principle rather than a rule.

The following section discusses transaction costs and overall institutional performance indicators. In this thesis, adaptability and accountability are classified as indicators of effectiveness. Therefore, the overall institutional performance indicators of natural resource management institutions indicators of interest in this thesis are effectiveness, efficiency and equity.

2.6.1. Transaction costs and natural resource governance

Ever since Coase (1937 and 1960) argued that the processes of carrying out a market transaction entail favorable transaction costs, there has been a growing interest among new institutional economists to apply transaction cost economics in public policy and regulation (Joskow, 1991; Masten, 1993; Thompson, 1996; Challen, 2000; Saleth and Dinar, 2004). North (1990: 6) defines transaction costs as “all those costs incurred in operating an economic system”.

Although an array of studies have focused on designing tools for environmental cost abatement and natural resource management incentive boost (see generally Aldy et al., 2010; King, 2012; Zilberman and Segerson, 2012), there is dearth of literature that marries transaction costs with natural resource governance (Paavola, 2007; McCann, 2013). This study adopts Marshall’s definition of transaction costs, wherein transaction costs are defined as “... the costs of the resources used to define, establish, maintain, use and change institutions and organisations; and define the problems that these institutions and organisations are intended to solve” (2013: 188). The definition proposed by Marshall (2013) is more comprehensive than that of McCann et al. (2005), where the latter define transaction costs as resources needed and expended in defining, establishing, maintaining and transferring property rights. This definition has a narrowly constrained application in natural resource governance.

Despite their narrow definition of transaction costs, McCann et al. (2005) established that transaction costs account for a significant proportion of the overall costs of natural resource governance and environmental management initiatives. By implication, transaction costs play a nontrivial role in the design of policy instruments and the overall attainment of optimal choice. Notwithstanding the significant role of acknowledging transaction costs in natural resource governance, it has been established in practice, empirical evaluations of natural resource policies and environmental governance initiatives often exclude transaction costs (McCann et al., 2005). Consequently, this hinders comparative policy evaluation (Marshall, 2013).

In his argument, Coase (1937) highlights that institutions often face several *ex-ante* costs of information and contract negotiation. According to William (1997), the primary emphasis of NIE is to apply rationality and self-interest propositions in illustrating the role of transaction costs and information in shaping human and economic behaviour. Williamson (1990 and 1997) focuses on *ex-post* transaction costs associated with the enforcement of contracts. Challen’s (2000) framework places *ex-ante* transaction costs under dynamic transaction costs, and *ex-post* transaction costs under static transaction costs. The following table summarises the classification of transaction costs modified by Hanna (1995), McCann et al. (2005) and Challen (2000).

Table 2.4: Classifications of transaction costs

Classes modified by Hanna (1995)	Classes modified by McCann et al. (2005)	Classes modified by Challen (2000)
<i>Ex-ante</i> transaction costs	Research and information Enactment or litigation Design and implementation	Dynamic transaction costs
<i>Ex post</i> transaction costs	Support and administration Contracting Monitoring and detection Prosecution and enforcement	Static transaction costs

(Source: Marshall, 2013)

Dynamic transaction costs are defined as “the costs incurred as a result of effecting institutional change” (Marshall, 2013: 188). They comprise of institutional transition costs and institutional lock-in costs. Institutional transition costs are defined as “[t]he transaction costs incurred in effecting change from existing institutional arrangements to a new institutional option” (Marshall, 2013: 188). Institutional lock-in costs are defined as:

“[t]he additional institutional transition costs incurred by ‘successor’ institutional options (i.e. those eventually chosen as adaptations, transformations or replacements of the option under consideration) due to the impact on institutional path dependencies of the institutional option under consideration” (Marshall, 2013:188).

The concept of path dependence is one of the critical concepts in NIE (Challen, 2000; Heinmiller, 2009; Garrick and Ayward, 2012). New institutionalists acknowledge that natural resource governance may rely on an adaptation of historical experiences, behaviours and identities that once proved to be effective and efficient in contemporary tasks and challenges associated with the resource (Heinmiller, 2009). In neoclassical economics, the concept of increasing returns is used to describe path dependency (Sehring, 2009). There seems to be some degree of convergence between ideas of both NIE and neoclassical economics on describing institutions as the carriers of history. Seemingly, both schools of thoughts propose that “[t]he longer an institution exists, the greater are the investments and adaptations in the institution, and the more difficult it is to undertake major institutional change” (Heinmiller, 2009: 135). According to NIE, constraints associated with path dependencies on adapting to natural resource needs and the inherent power relations emerging from vested interests in predecessor institutional arrangements need to be acknowledged in the design of successor institutions.

NIE argues that the degree of the institutional changes effected in natural resource governance determines the level of transaction costs incurred (Heinmiller, 2009). Therefore, transaction costs need to be considered and incorporated in the design of institutional frameworks and policy instruments for natural resource management and governance. For instance, transaction costs

often decrease in institutional environments where; (i) the legal system is effective, (ii) property rights are assigned to those who cannot easily make changes, (iii) market structures foster economies of scale and scope, (iv) predecessor institutions are well-designed, (v) there is appropriate sequencing and timing of policy interventions, and (vi) there is social capital and trust (McCann, 2013: 260). Similarly, transaction costs tend to heighten where institutions are aimed at increasing lobbying and when there is a misalliance between physical and administrative boundaries (McCann, 2013). It is, however, worth noting that these triggers in transaction costs increase and decrease are treated as principles, rather than rules in this thesis. This thesis acknowledges that the governance of natural resources operates in a complex setting with an array of wicked problems.

Alford and Head (2017) describe wicked problems as problems that “are complex, intractable, open-ended, [and] unpredictable” (pp. 397) often “relying on political judgements rather than scientific certitudes (pp. 399). Similarly, Rittel and Webber (1973) describe wicked problems as multifaceted and multi-layered problems, which often result in unpredicted effects and some degree of uncertainty when solved. Examples of such problems include natural resource allocation, distribution, management and governance issues (Hearnshaw et al., 2011). The problem of conflict between tourism and agriculture in the Okavango Delta can be described as a wicked problem similar to Coase’s (1960) example of neighbouring property owners with conflicting interests. McCann and Garrick (2014) propose that transaction costs should be a fundamental consideration in policy design for wicked problems, as these increase the degree of uncertainty in natural resource governance.

In general, risk and uncertainty increase transaction costs (Williamson, 1985; McCann, 2014). Due to uncertainty, information asymmetries and bounded rationality of agents, may be faced with high ex-post transaction and incomplete contracts (Williamson, 1985; Klein, 1999). The discussions on contracts are done in the subsection below.

2.6.1.1. Transaction costs and contracts

In reformulating the economic organisation, Commons (1932: 4) highlights that “the ultimate unit of activity... must contain in itself three principles on conflict, mutuality and order. This unit is a transaction”. Williamson (2007) interprets Commons’ statement to mean two important things concerning governance. Firstly, it highlights that the study of governance and contracts regards transactions as the basic unit of analysis. Secondly, “governance is viewed as the means by which to infuse order, thereby to mitigate conflict and realise mutual gains” (Williamson, 2007: 3).

The discipline of NIE accentuates the need to determine the most suitable way of offsetting conflict emerging from completion and maximising the benefits of natural resource use with the least transactions cost through aligning various imperfect institutional and contractual arrangements (Ostrom et al., 1994; Brousseau and Glachant, 2002; Lieberherr, 2009). Within the resource allocation paradigm, Buchanan (2001) makes a distinction between the science of choice and the science of contract by highlighting that the latter deserves to be given more prominence than the former because it promotes “mutuality of advantage from voluntary exchange” (pp. 29).

Contracts serve as tools necessary for improving the quality of services exchanged by the contracting parties as well as a mechanism for mitigating transactional hazards. However, contracts entail costs (Coase, 1937; North; 1990). The magnitude of the transaction costs incurred varies according to several factors, such as the amount of uncertainty about the future, the amount of time require to adjust contracts to suit the interests of both parties, and the complexities associated with the existing institutional arrangements, among other factors (Williamson, 1985; North; 1990; Brousseau, 2008; Mihau et al., 2010). In addition to these factors, this thesis hypothesises that the embedded personal economic interests and high sunk costs towards a natural resource in conflict lead to high transaction costs in contract design.

Therefore, the contracting agents need to choose the arrangements that promote mutual benefits from the natural resource in conflict at the least possible cost.

NIE acknowledges that economic agents in conflict are exposed to contractual hazard due, though not exclusively, to uncertainty, asymmetric information and bounded rationality (Klein, 1999; Williamson, 1985). Other sources of contractual hazard include;

(1) bilateral dependence; (2) weak property rights; (3) measurement difficulties and/or oversearching; (4) intertemporal issues that can take the form of disequilibrium contracting, real-time responsiveness, long latency and strategic abuse; and (5) weaknesses in the institutional environment (Williamson, 1996: 14 Klein, 1999: 468).

These factors not only impose maladaptation costs (Klein, 1999) but also lead to incomplete contracts (Williamson, 1985 and 1996). Consequently, contracts are designed before all events of the future are known and with limited and no knowledge of the behaviour of parties (Williamson, 1985). One party may choose to disclose private information about the natural resource in conflict selectively. Similarly, one party may entirely withhold crucial information, creating information asymmetry to the other party. In the event of information asymmetries, the benefits of contractual agreements to resolve natural resource conflicts arguably tilt in favour of the agent with complete information. In order to minimise the cost of maladaptation, the contracting agents need to identify a suitable governance structure that ensures mutual benefit at the least cost (Brousseau, 2008). The success, or lack thereof, of contractual agreements, is contingent to the nature of the institutional environment within which they have been endorsed (Brousseau, 2008).

However, Williamson (2000) and other new institutional economists caution while changes in governance may happen at the end of a contract, embedded institutions (Figure 2.2), particularly culture, are often amenable to change (Brousseau and Glachant, 2008; Lieberherr, 2009). The transaction costs associated with attempting to effect change on embedded institutions are high and prohibitive (McCann and Garrick, 2014). While Williamson (2000) assumes that the contract

conflicts and economic agents' conflicts are resolved within a well-functioning legal system, other new institutionalists' views are on the contrary (Ostrom, 1990; Birner and Wittner, 2004; McCann and Garrick, 2014). Ostrom (1990) proposes that informal and local level institutions need to be acknowledged and be used as drivers of collective action. According to Ostrom (1990), collective action institutions are capable of being low-cost conflict resolution mechanisms at the local level.

Collective action institutions are described as natural resource management institutions whose aim is to offset the cost of control, promote coexistence and increase efficiency and the gains from the natural resource through creating a cooperative atmosphere (Ostrom, 1990; Menard and Shirley, 2005; Lieberherr, 2009). Contrary to the assumption of the existence of a well-functioning legal system for resolution of contractual conflicts, proponents of collective action argue that collective action limits information asymmetries and thereby promotes mutual gains in contractual arrangements (Kirsten et al., 2009; Lieberherr, 2009). It is further argued that the agents operating within cooperative governance can maximise efficient resource use and promote coexistence through shared learning and reciprocity of trust (Ostrom, 1990, 2004).

This thesis acknowledges that land use conflicts may be exasperated by uncertainty about the future value of land, opportunistic land users, and fragmented legal and institutional exasperate land use conflicts. These factors require well-informed cooperative arrangements and decision-making mechanisms. These assumptions inform the game theory analysis of this study. The following subsection discusses game theory analysis in NIE.

2.6.1.2. Transaction costs, property rights and game theory

One of the central arguments that highlight the possibility of natural resource depletion is 'the tragedy of the commons' by Hardin (1968). Hardin (1968) defines 'tragedy of the commons' as overuse and depletion of a shared natural resource. The latter argues that rational agents using the natural resource want to maximise their immediate utility with full knowledge that an overuse of the resource is against long-term interest of the collective. As a remedy to 'tragedy of

the commons', neoclassical economists propose that users should be allocated private property rights to give the owner the right to exclude others from use of the resource (Tregarthen and Rittenberg, 2000), thereby attaining greater efficiency of natural resource allocation (Saleth and Dinar, 2004; Hodgson, 2009). According to neoclassical economics, the allocation of private ownership rights promotes optimal allocation of natural resources (Hodgson, 2009). The emphasis of neoclassical economics is, however, premised on the assumption that misinterpretation of prices is eliminated.

The NIE equally advocates for the allocation of property rights as institutional instruments necessary to define the physical restrictions to the natural resource, such as land rights (see Ostrom, 1990; Bromley, 1992; Hackett, 2011). The scholars of institutions propose that the rights should not only serve as restrictions but should also stipulate information of management, such as how the system should operate, how the system should be monitored, how conflicts will be resolved and so forth (North, 1990; Ostrom, 1990; Bromley, 1992; Hackett, 2011). Hackett (2010) highlights that the challenge of natural resource scarcity can be addressed through the well-defined property. However, the success, or lack thereof, of property rights is often dependent on the approach used to impose them (Ostrom, 2004).

Ollila (2009) cautions that institutions are cost-minimising and interdependent arrangements, whose apparatus, such as property rights, operate within a complex system. Often, a 'blanket' or 'one-size-fits-all' approach by macro-institutions fails to account for varying degrees of heterogeneity of ecological, geological and sociological features, as well as the intensity of natural resource conflicts within geographical settings. To address this problem, Ostrom (2004) argues that there is a need to acknowledge indigenous property rights and to develop a proper understanding of the complexion of existing both formal and informal local structures. The acknowledgement and understanding of the existing traditional arrangements in communities are argued to serve as a cornerstone of correctly predicting the responses to property rights enforced by the state (Heltberg, 2002). Property rights, however, serve as a necessary but

insufficient institutional tool for addressing natural resource conflict and promoting net social welfare.

In addition to property rights analysis, various scholars use game theoretic approach to analyse the behaviours of, and relationships between, economic agents. In economics, it is argued that the contemporary application of game theory can be traced as to Adam Smith (Aoki, 2001; Agrawal, 2001b). In “The Theory of Moral Sentiments”, Adam Smith (1759: 234) notes that:

“[I]n the great chessboard of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might choose to impress upon it. If those two principles coincide and act in the same direction, the game of human society will go on easily and harmoniously and is very likely to be happy and successful. If they are opposite or different, the game will go on miserably, and the society must be at all times in the highest degree of disorder.”

Several studies have since used game theory to illustrate how natural resource conflicts could be managed, and how allocative efficiency could be promoted (Aoki, 2001; Agrawal, 2001b; Carraro et al., 2005; Parrachino et al., 2006; Madani, 2010). However, the studies are biased towards water conflicts, while land conflict issues remain narrowly researched. New institutional economists and other scholars of natural resource management use game theory to address “multi-criteria multi-decision-maker problems” (Madani, 2010: 226). The theory defines the strategic interactions among agents with divergent and convergent interests towards a natural resource and outlines the probable outcomes from such interactions based on preferences of the agents. Game theory strives to understand the behaviour and actions of economic agents, “based on a careful analysis of the ordinary everyday interpretation of economic facts” (von Neumann and Morgenstern, 1944). The theory itself is comprised of a collection of models. Wei (2008:18) summarises the broad classes of games as follows:

- a. “binding agreements: non-cooperative and cooperative games;
- b. numbers of players: single player game (decision problem), two-person game and multi-persons game;
- c. order of actions (moves): static and dynamic games;

- d. elements of actions (moves) set: finite and infinite games;
- e. the sum of payoffs: zero sum and non-zero sum games;
- f. information set: complete information and incomplete information games;
- g. numbers of the same play in a game: single game and repeated game”.

According to Kreps (1999:127), the transaction costs argument within NIE and game theory analysis share “a good deal of common ground”. This is because in both concepts, the economic agents want to position themselves favourably upon having an understanding of the strategic situation (Kreps, 1999; Williamson, 2007). They make choices that provide high net benefits at the least possible cost. The set of payoffs faced by the economic agents play a crucial role in determining the choices made in the game. The games played differ, and they yield various payoffs. The game can either be a cooperative game or a non-cooperative game.

Non-cooperative game theory deals with games in which players make independent decisions and compete (Madani, 2010). In non-cooperative games, players cannot make binding agreements. It is argued that non-cooperative games are primarily driven by the structure of incentives available to the players (Albiac et al., 2008; Dinar, 2009). Such games have theoretical underpinnings of the tragedy of the commons, the prisoner’s dilemma and the free-rider problem (Hardin, 1968; Axelrod, 1984; Dinar, 2007; Albiac et al., 2008). Scholars of collective action and social relations within NIE usually use the prisoner’s dilemma concept of game theory to analyse possible outcomes (Penard, 2008). In a classic example of the prisoner’s dilemma, two prisoners suspected of a crime are questioned simultaneously in separate interrogation rooms, and communication is prohibited. The example is expanded by Cole and Grossman (2008: 220 – 221) continue the example as thus,

“The police have enough evidence to convict both prisoners of a minor offence, but a confession by one or both of the prisoners would allow conviction for a more serious offence, with a longer prison sentence. To improve the chances of obtaining a confession from one or both of the prisoners, the judicial system structures the incentives of the prisoners by deliberately adjusting the penalties as follows: If neither prisoner confesses (both remain silent), each will be imprisoned for 3 years; if either one of the prisoners confesses, while the other remains silent, the confessing

prisoner will go free, and the non-confessing prisoner will be sentenced to 10 years in prison; finally, if both prisoners confess, each will be sentenced to 6 years in prison.”

In light of this example, Cole and Grossman (2008: 221) formulate the payoff matrix as summarised in Table 2.5.

Table 2.5: Example of the payoff matrix of the prisoner’s dilemma

		Prisoner 2	
		Silent	Confess
Prisoner 1	Silent	(-3,-3)	(-10,0)
	Confess	(0,-10)	(-6,-6)

Schelling (1960: 214) defines the prisoner’s dilemma as “a configuration of payoffs that gives both players dominant incentives—in the absence of an enforceable agreement to the contrary—to choose strategies that together yield both players a less desirable outcome than if both had made opposite choices.”

Although some studies treat the tragedy of the commons as a variant of the prisoner’s dilemma (see Alcock and Mansell, 1977; Richards, 2001), the two are different (Cole and Grossman, 2008). They differ significantly in institutional structure. As argued by Cole and Grossman (2008), the tragedy of the commons’ game called the ‘herder problem’ does not have institutional barriers to communication and cooperation that define the prisoner’s dilemma. As such, the dominant strategy of defection inherent in the prisoner’s dilemma is absent in the herder problem (Cole and Grossman, 2008).

Relevant to this thesis, if the owners of tourism and agriculture land in the Okavango Delta do not cooperate and communicate with each other, then that would be referred to as a non-cooperative game. Both owners of land manage their respective segments of land resources on their own, governed by tourism and agricultural institutions in place. The landowners make

decisions that promote their utility. Each landowner does not have an incentive to alter his strategic objectives given the other owner's strategy. Similarly, each landowner has the optimal strategy of maximising his benefits from land resources by using the game rules. Even though the owners do not communicate with each other, the assumption is they "think vicariously" (Ambrosino, 2013: 139), and are aware that the other landowner is reasoning in a similar way of utility maximisation at the least possible cost. Some empirical studies conclude that non-cooperation worsens natural resource conflicts (Turocy and von Stengel, 2001; Zara et al., 2006). They further argue that the conflicts extend beyond the payoffs for the landowners to the overall quality of the environment (Turocy and von Stengel, 2001; Zara et al., 2006).

Jobin and Lawal (2017) define a cooperative game as one where players can communicate and form coalitions. The players collaboratively make decisions to derive allocation benefits that are mutually favourable. Cooperative game models are used to analyse optimal resource allocation problems as well as coalition problems (Madani and Hipel, 2011). In cooperative games, competition is not between individual players, but rather between coalitions of players (Madani, 2010; Madani and Hipel, 2011). Cooperative are argued to be more beneficial to players when there is; (i) complementarity in the roles played by each player, (ii) synergies between abilities, (iii) synergies between goals; (iv) shared goals, and (v) special rules that promote and facilitate cooperation (El-Nasr et al., 2010).

In addition to cooperative and non-cooperative games, there is another class of games called mixed-motive games or coordination games (Schelling, 1960; Ambrosino, 2013). According to Schelling (1958), other forms of games emerged due to the failure of cooperative game theory and non-cooperative game theory to handle the coexistence of conflict and common interest entirely. On the one hand, mixed-motive games are used to represent the highlight of how "mutual accommodation is needed to avoid mutual disaster" (Ambrosino, 2013: 138). In mixed motive games, the agents have the burden of developing composite expectations and perceiving mutual expectations using their intuition (Ambrosino, 2013). In a simple game with two players (Table 2.6), the results may be two equilibria, which are both not preferred by the agents.

Table 2.6: Example of a simple mixed-motive game

		Player 2	
		Strategy I	Strategy II
Player 1	Strategy I	(10, 10)	(0, 0)
	Strategy II	(0, 0)	(10, 10)

(Source: Ambrosino, 2013)

As a result of land use conflicts, users with divergent interests may establish either informal or formal agreements which are susceptible to enforcement (Prates, 2013). In both forms of agreements, the parties in conflict are encouraged to use their interdependencies to craft solutions which are social, economically and environmentally sustainable (Baland and Platteau, 1994 and 1997; Prates, 2013). Interdependence is one of the central concepts of NIE. Accordingly, NIE argues that economic agents with either convergent or divergent interests regularly compete for scarce resources (Paavola and Adger, 2002; Ollila, 2009). As such, the choices made by one economic agent are likely to have a direct influence on those of the other due to their inherent interdependencies (Paavola and Adger, 2002; Ollila, 2009). Therefore, institutions should serve as cost-minimising and interdependent arrangements that operate within a complex system (Madigele, 2015). In some studies, game theory is applied to define the levels of interdependencies, the intensity of conflict and the potential for interactions depending on the strategic behaviour (Ostrom, 1990; Baland and Platteau, 1997; Madani, 2010; Madani and Hipel, 2011). In environmental and natural resource problems, game theory is applied to analyse problems stemming from “interdependence among agents, through their interrelated actions and strategies” (Dinar, 2008: 3).

2.6.2. Overall institutional performance indicators

In NIE literature, there is a consensus that no two institutions are identical. Therefore no two institutions will function in the same way (Birnbaum, 1988; Griffiths et al., 2007). New institutionalists also acknowledge that often, institutional arrangements have many layers and

hierarchies (Agrawal, 2001b; Libecap, 2009). These contribute to the overall complexity and diversity of institutional arrangements. While the scholars concur that effective governance institutions are necessary to avoid misuse and promote equitable of natural resources, there is no standard way of defining the shape, scope, scale and overall complexion of an ideal institution or institutional arrangement.

Anderies et al. (2003) argue that institutions designed, monitored and enforced to counteract the resource users' incentives can lead to overuse. According to the authors, natural resources, such as land, are a component of a complex social-economic system. The safeguarding process of natural resource, therefore, requires the existence of a robust social-economic system. Carlson and Doyle (2002: 2538) define robustness of a system as "the maintenance of some desired system characteristics despite fluctuations in the behaviour of its parts or its environment". In order to determine how institutional arrangements contribute to robustness of the system, Anderies et al. (2003) propose that there should be a thorough understanding of the variety of games played among resource users. As well as the array of existing linkages among resources users and the providers of public infrastructure, and the potential linkages between resource users and the public infrastructure. Table 2.7 summarises the linkages, their examples and potential problems as stated by Anderies et al. (2003: 7). However, the table is slightly modified to suit the needs of this thesis.

Table 2.7: Linkages involved in the social-economic system

Linkages	Examples	Potential problems
Between resource and resource users	- Availability of land - Allocation of land rights	- Physical land shortage - Too much land with little economic value
Between users and public infrastructure providers	-Contributing resources -Recommending policies -Monitoring performance of providers	-Freeriding Rent seeking Lack of information
Between public infrastructure providers and public infrastructure	- Building the initial structure - Regular maintenance - Monitoring and enforcing	- Over- or under-invest - Shirking - Cost / corruption

	rules	
Between public infrastructure and resource	- Impact of infrastructure on the resource level	- Ineffective
Between public infrastructure and resource dynamics	Impact of infrastructure on the feedback structure of the resource-livelihood dynamics	-Ineffective, -Unintended consequences
Between resource users moreover, public infrastructure	-Coproduct of the infrastructure itself - Maintenance of works - Monitoring and sanctioning	No incentives / free riding
External forces on resource users	Major changes in the political system -Economic prices, -New roads, and infrastructure	-Conflict - Uncertainty - Outmigration - Greatly increased demand

(Source: Anderies et al., 2003)

The linkages between resource and resource users, public infrastructure and resource, and between public infrastructure and resource dynamics are argued to be sources of fluctuations within the system (Anderies et al., 2003). If not addressed well, these linkages may undermine the robustness of the system (Anderies et al., 2003).

Other scholars have identified several general principles for sound natural resource management institutions (Ostrom, 1990; Dietz et al., 2003; Gandhi and Crase, 2009). According to such scholars, robust natural resource institutions should; (i) device rules that are congruent with natural resource conditions, (ii) have clearly defined boundaries of resources and resource groups, (iii) devise accountability mechanisms for monitors, (iv) apply graduated sanctions for violations, and (v) use low cost mechanisms for conflict resolution (Ostrom, 1990; Dietz et al., 2003; Gandhi and Crase, 2009). The poor institutional performance is associated with the lack of clear boundaries and monitoring efforts (Ostrom and Nagendra, 2006). It has also been observed that failure to recognise the users' rights to the resource, lack of clear definition of the owner(s) and the lack of overall enforcement are associated with the overall poor institutional performance (Gibson et al., 2005). Other models of institutional performance, such as the IAD

use indicators of efficiency, effectiveness and equity to evaluate institutional performance. The indicators are described in the subsequent subsections.

2.6.2.1. Efficiency

The fundamental proposition of zero transaction costs in neoclassical economics renders institutional efficiency meaningless as it leads to the conclusion that institutions are “allocative efficient” (Richter, 2012: 2). In NIE, efficiency serves as one of the pivotal arguments (Brousseau and Glachant, 2008). The main offering of greater-than-zero transaction costs in NIE prompts new institutionalists to think of scenarios where transaction costs could be minimised, and thereby promote efficiency. NIE, therefore, seeks to evaluate institutional arrangements that yield the intended goals at the least possible cost of the transaction. The argument for obtaining the intended results as minimal costs is summarised by Frank Knight (1941: 252) as follows;

“Men in general, and within limits, wish to behave economically, to make their activities ... “efficient” rather than wasteful. This fact does observe the utmost emphasis; and an adequate definition of the science of economics ... might well make it explicit that the main relevance of the discussion is found in its relation to social policy, assumed to be directed toward the end indicate, of increasing economic efficiency, of reducing waste.”

Institutional efficiency is defined as the ability of the institutions to large shocks it faces from time to time (North, 1990). This definition of useful adaptability is also referred to as adaptive efficiency (Richter, 2008). In this study, institutional efficiency is defined as the ability of institutions to deliver their mandate today with an outlook of the future at the least possible cost. This definition encompasses useful adaptability and economic efficiency. Institutional efficiencies are often results of accessible information and low transaction costs, among other factors (Engle et al., 2011). Corruption is one of the factors that undermine institutional efficiency (Engle et al., 2011). There are two broad types of efficiency, namely allocative efficiency and technical efficiency. Boyne (2002: 17-18) defines technical efficiency as “the per unit output”, and allocative efficiency as the “responsiveness of service to public preferences”.

Birner and Wittmer (2004) illustrate how different natural resource management and governance scenarios lead to the attainment of various levels of efficiency. Some of the main findings of the study are; the participation of local communities in decision-making reduces transaction costs, induced compliance reduces the need for monitoring and promotes efficiency, the hybrid natural resource governance structure between the government and profit-making enterprises have lower transaction costs and higher efficiency levels.

Imperial (1999) argues that efficiency can be viewed from two perspectives. Firstly, it can be viewed regarding the effect that the institutional arrangements have on wealth generation and productivity (Imperial, 1999). Secondly, it can be viewed regarding the cost of administration of the institutional arrangement (Imperial, 1999). However, the author cautions policy-makers and academics that there is no direct causal linkage between institutional performance and policy outcomes (Imperial, 1999: 458). By implication, efficient institutional arrangements could have undesired policy outcomes and vice versa. Such instances require trade-offs, such as high efficiency for less than optimal policy outcomes. The concept of efficiency is crucial in determining the desirability of social and public institutions (McGinnis and Ostrom, 2014). It does not only determine the cost and benefits of institutional arrangements but also indicate how altering institutional arrangements may influence behaviour and resource allocation.

2.6.2.2. Effectiveness

The conflicts between tourism and agriculture as livelihood activities emerge from the conflicts between national parks, protected areas and their surrounding human communities. These conflicts are dysfunctional (Hough, 1988). According to Van der Auweraert (2013), the resolution of such conflicts is dependent on effective institutional choice. Elebring et al. (2012) loosely define 'effectiveness' as doing the right thing. In a quest to do the right thing when addressing land use conflicts, institutionalists need to first determine whether conflicts "are a problem merely in and of themselves or are also an expression of a broader structural problem, such as land scarcity or incoherent or otherwise inadequate land regulation, management, or

administration systems” (van der Auweraert, 2013: 357). If the conflicts are a problem in and of themselves, a suitable solution is to establish low-cost mechanisms of conflict resolution. Similarly, if the conflicts are a product of broader structural problems, then the institutional question needs to not only address the institutions but also address the underlying structural issues (van der Auweraert, 2013).

Amidst the conflicts, the parties in conflict have the incentive to either resolve or reduce the conflict (Hough, 1998). Both of these incentives create a window of opportunity for establishing or enforcing institutions that promote communication and trust between tourism land management authorities and local communities. To achieve effectiveness, local participation in decision-making is necessary. To reiterate, Hough (1998: 129) highlights that,

“Because of their greater power, the national park authorities are in the best position to take the first steps towards establishing trust—by making some positive concessions, and binding themselves in some way to real, rather than token, local participation in decision-making.”

Local and civil society participation is applied as one of the effectiveness indicators in several studies (Ostrom, 1990; Ostrom et al., 1994; Bandaragoda, 2000; Agrawal, 2001b, Grafton et al., 2011). Other indicators of effectiveness include transparency, communication, accountability and regulation. Gandhi and Crase (2009), effective natural resource management institutions should be adaptive, have unambiguous objectives, be technically rational, maintain good relations with other institutions, have compliance ability with the appropriateness of scale and scope.

2.6.2.3. Equity

According to Bardhan (1989), the concept of equity deals with the structures of ownership and property relations. Boyne (2002) and Aderies et al. (2013) associate the concept with impartiality and fairness. In NIE, it is argued that neoclassical economics models, such as the general equilibrium model, do not sufficiently define the concept of equity (Richter, 2008). This is

because, in such models, Pareto efficiency is the main focus even though it is not necessarily socially equitable (Richter, 2008). New institutionalism views equity from two perspectives, namely fiscal equivalence and re-distributional equity (Imperial, 1999; Crothers, 2010; Ostrom and Ostrom, 2014). In this thesis, the third perspective of knowledge equity will also be considered. Madigele (2017: 101) argues that the “recognition of knowledge equity necessitates the upper-regime level institutions to acknowledge empowerment of ... disadvantaged groups”. Such groups can be empowered through information provision and sharing as a means of promoting efficiency.

In fiscal equity, it is proposed that those who derive more significant benefits from the utilisation of a natural resource should pay more (Imperial, 1999; Ostrom and Ostrom, 2014). Fiscal equity can be assessed in two ways. Firstly, it can be assessed by “the equality between individuals’ contributions to an effort and the benefits they derive” (Ostrom and Ostrom, 2014: 73). This definition is concerned about equating the equality of the process with the results or outcome. Secondly, it can be assessed on the “basis of abilities to pay” (Ostrom and Ostrom, 2014: 73). The latter emphasises the separability of equity and efficiency. For efficiency, more resources should be allocated and utilised where the most significant benefits can be derived. However, efficiency does not necessarily imply equity or fairness. Boyne (2002) argues that public institutions have the responsibility of ensuring equity through allocating resources by need rather than the ability to pay. This implies that there should be trade-offs between efficiency and equity in social institutions.

Re-distributional equity policies are designed to redistribute resources between individuals and generations (Young and Tilley, 2006; Ostrom and Ostrom, 2014). The policies aim at achieving allocation goals that benefit the disadvantaged or needy groups. In NIE literature, some of the indicators used to evaluate the degrees of equity in natural resource management institutions are; (i) responsiveness to the needs of disadvantaged groups, (ii) the sensitivity of institutional arrangements to local needs, and (iii) an enhanced opportunity for social inclusion (Ostrom, 1990;

Ostrom et al., 1994; Bandaragoda, 2000; Agrawal, 2001b; Grafton et al., 2011; Haldane et al., 2010).

2.7. Conclusion

This chapter presented the theoretical framework of NIE about environmental and natural resource management. The neoclassical economics' emphasis is on empirical observation over deductive reasoning as well as market and price mechanisms with little or no regard to the influence of institutions in the economic system. The theory also focuses predominantly on collective rather than individual action. These shortcomings increasingly made neoclassical economics inapplicable in tracing wicked problems such as natural resource allocation, distribution, management and governance issues, among others in a complex, interconnected system. Veblen, Commons and other old institutional economists refined economic analysis by incorporating institutions and institutional change arguments within the economics discipline.

These economists notably succeeded in redefining efficiency in the context of transaction costs reduction. However, the OIE displayed some weaknesses. The framework lacked systematic and rigorous theoretical foundations. The approach of methodological hostility by OIE contributed to its failure. The NIE emerged as an attempt to incorporate institutional analysis into mainstream economics by systematically operationalising the insights of neoclassical economics. It is premised on the assumptions that economic agents are faced with favorable transaction costs and information asymmetries. The NIE also assumed that economic agents had bound rationality and opportunistic behaviour.

The chapter also discussed that institutional arrangements such as property rights and contracts could be used in natural resource management and conflicts resolution. However, the multi-layers and hierarchies of institutional arrangements contribute not only to the diversity of the arrangements but also to the overall complexity of the system. Therefore, this chapter

acknowledges that NIE is not the panacea to natural resource conflicts. The following chapter synthesises the literature on sustainable tourism theories and rural livelihoods.

CHAPTER 3

SUSTAINABILITY, SUSTAINABLE TOURISM AND RURAL LIVELIHOODS

“It is natural for tourism scholars to abstract tourism from the broader context in which it occurs in order to focus on their specialisation but, if the links between tourism and other sectors are not adequately appreciated, and if the context in which tourism occurs is overlooked, then understanding is likely to be partial.” (Tao and Wall, 2009: 90)

3.1. Introduction

Increased urbanisation, natural resource dynamics and increasing competition over natural resources have generally exerted pressure on the natural environment. According to Albrechet (2004), an introduction of a dominant economic sector within a region often results in shocks on, and shifts from, the traditional economic base. In the context of the Okavango Delta region, that dominant economic sector is tourism. The tourism sector competes for scarce resources such as labour and land with the other potential uses of those resources, predominantly the agricultural sector.

Various scholars have consistently over the years, proposed an array of recommendations to address divergence of interests towards natural resources and to promote equity, economic growth, environmental protection and general coexistence of conflicting land use activities (see Foglesong, 1986; Owens, 1994; Torres and Momsen, 2004; Farrell and Twining-Ward, 2004; Harrison, 2008; Tao and Wall, 2009; Honey and Gilpin, 2009; Rutina et al., 2016). One school of thought proposes that the tourism sector should be strategically linked to the agricultural sector to enhance synergies through the creation of an enabling institutional environment to promote the effective contribution of tourism in agrarian communities (Honey and Gilpin, 2009; FAO, 2012). The other school of thought emphasises the need to promote sustainable tourism as a tool to attain sustainable development, that as being used as a means of a rural livelihood activity and as an avenue to safeguarding the natural environment (Ashley, 2000; Ashley and Haysom, 2006; Tao and Wall, 2009; Mowforth and Munt, 2015). However, the findings and

recommendations of the studies vary across geographical settings because “the manifestations of tourism likely vary with the form that it takes and the situations in which it occurs, making findings, of necessity, contingent” (Tao and Wall, 2009:90).

This chapter synthesises the literature on the concepts of sustainability and sustainable development broadly, and sustainable tourism narrowly. It also provides an in-depth discussion on rural development and the sustainable livelihood framework. The chapter is structured to define the concepts of sustainability and sustainable development, and to give a description of sustainable tourism. It then discusses the sustainable livelihoods framework and its inapplicability to the tourism context, while it discusses the Sustainable Livelihoods Framework for Tourism as an alternative framework.

3.2. Defining Sustainability and Sustainable Development

The concepts of sustainability and sustainable development can be traced to the steady-state economic model of the 1960s (Owens, 1994). Sustainable development was explicitly defined in the so-called Brundtland report as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (The World Commission on Environment and Development (WCED, 1987:7). According to Cooper et al. (2008) and Niedziółka (2012:159), this definition of sustainable development encompasses some of the fundamental principles of sustainability because it;

- a. takes a holistic approach to planning and strategy;
- b. protects the environment (biodiversity) and human-made heritage;
- c. preserves the essential ecological processes;
- d. facilitates and engages public participation;
- e. ensures that productivity can be sustained in the long-term future;
- f. provides for a better level of fairness and opportunity between different countries.

The WCED (1987:9) narrowly described sustainable development as a type of “development [that] requires that those who are more affluent adopt lifestyles within the planet's ecological

means” and “development [that] can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem”. After the Brundtland definition of sustainable development, there have been extensive academic discussions of the concept and debates on its definition and used (see Holmberg, 1992; Owens, 1994; Reed, 1997; Diesendorf, 1999; Harris et al., 2001). Along with these debates, there has emerged multiple definitions, with no single operational definition. The concept has become mostly pliable.

Owens (1994) argues that there are two broad conceptualisations of sustainability. The first one describes sustainability by giving environmental considerations paramount importance, and the second definition lies on the far extreme of the preservationist position (Hunter, 1997; Owens, 1994). The former is regarded as a very weak definition of sustainability, while the latter is considered a very strong conceptualisation of sustainability that places environmental concerns over economic activity. The very weak conceptualisation of sustainability is anthropocentric (Hunter, 1997), with bias in favour of economic agents. The robust description, on the contrary, is ecocentric (Hunter, 1997) as it ostensibly places the environment principally to all other considerations, including economic growth. Table 3.1 summarises the descriptions of sustainability.

Table 3.1: Summary of descriptions of sustainable development

Sustainability description	Defining characteristics
Very weak	Anthropocentric and utilitarian; growth oriented and resource exploitative; natural resources utilised at economically optimal rates through unfettered free markets operating to satisfy individual consumer choice; infinite substitution possible between natural and human-made capital; continued wellbeing assured through economic growth and technical innovation.

Weak	Anthropocentric and utilitarian; resource conservationist; growth is managed and modified; concern for distribution of development costs and benefits through intra- and intergenerational equity; rejection of infinite substitution between natural and human-made capital with recognition of some aspects of the natural world as critical capital (e.g., the ozone layer, some natural ecosystems); human-made plus natural capital constant or rising through time; decoupling of negative environmental impacts from economic growth
Strong	(Eco)systems perspective; resource preservationist; recognises primary value of maintaining the functional integrity of ecosystems over and above secondary value through human resource utilisation; interests of the collective given more weight than those of the individual consumer; adherence to intra- and intergenerational equity; decoupling important but alongside a belief in a steady state economy as a consequence of following the constant natural assets rule; zero economic and human population growth
Very strong	Bioethical and ecocentric; resource preservationist to the point where utilisation of natural resources is minimised; nature's rights or intrinsic value in nature encompassing non-human living organisms and even abiotic elements under a literal interpretation of Gaianism; anti-economic growth and reduced human population.

(Source: Hunter, 1997: 853)

According to Hansmann et al. (2012), sustainability is considered to be an integrative concept with three main principles or pillars, namely; ecological sustainability, social and cultural

sustainability, and economic sustainability. Ecological sustainability is concerned with balancing development with the wellbeing of ecological systems, processes, biological resources and biological diversity (McNeely and Scherr, 2001). This pillar characterises the need to utilise the natural environment within its ecological parameters. Social and cultural sustainability “ensures that development increases people's control of their lives is compatible with the culture and values of people affected by it, and maintains and strengthens community identity (McNeely and Scherr, 2001:10). It facilitates the alignment of people’s skills and experiences to a dignified life that does not distort the community’s distinctive character and individuality.

Economic sustainability advocates for development that ensures that resources are used efficiently to ensure that they can support future generations (McNeely and Scherr, 2001). The economic sustainability pillar focuses on the material needs of households and communities and calls for economies to support livelihoods within a competitive, equitable and sustainable scale. Cumulatively, these pillars argue for development that considers the natural environment, human capital and economic capital. Some literature sources refer to the interplay of the three pillars (Figure 3.1) as a triple bottom line (TBL) framework of sustainability (Elkington 1998 and 1999; Stoddard et al., 2012), while others refer to it as the triangle of the three Ps of planet, people, and profits (Elkington, 1998; Seghezzeo, 2009; Schoolman et al., 2012).

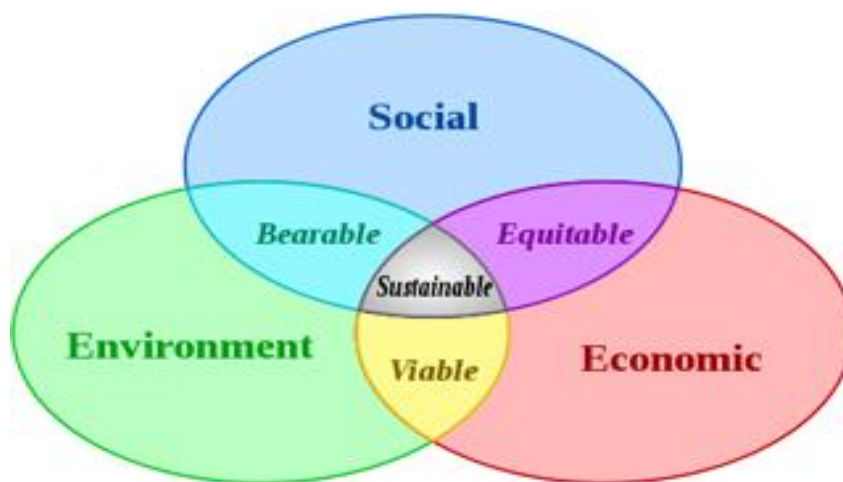


Figure 3.1: The three pillars of sustainability (Source: <http://www.thwink.org/sustain/glossary/ThreePillarsOfSustainability.htm>)

The TBL framework has faced criticism over the years. Some scholars argue that the diversity of interests of users of natural resources often leads to conflicts due to the divergence of interests as well as nonconformity against a single pillar of sustainability (Kyburz-Graber et al., 2006; Hansmann et al., 2012). These conflicts create complexities when attempts are made to balance the divergent interests against all of the three pillars. In the midst of such complexities, “balancing [user’s] interests regarding one pillar is sometimes more in the foreground than to balance social, economic, and environmental aspects” (Hansmann et al., 2012:451). The other source of criticism is that inherent in the pillars are values, such as profit against equity, which are primarily asymmetrical about each other (Mieg, 2010; Hansmann et al., 2012). In essence, attaining sustainability within complex systems marred with interrelations is difficult. It is, however, possible to conclude on sustainability, or lack thereof, through analysing synergies between the goals of sustainable development.

The TBL framework, however, is silent on institutional sustainability. As a response to such a shortcoming, the institutional sustainability dimension was added as the fourth principle by the United Nations Commission on Sustainable Development (UNCSD) in 1995 (UNCSD, 2007). The institutional principle “calls for strengthening people's participation in political governance. The mechanisms of decision-making have to integrate people’s wishes and activities. This way, the acceptance of an identification with political decisions both become broader, and democracy is strengthened” (Wuppertal Institute, 1999:2). Through improving broader participation, unbalanced government policies, such as those that are marginalising the agriculture sector and neglecting rural infrastructure, are likely to be eliminated. A model known as the Prism of Sustainability (PoS) emerged after the addition of the fourth principle. In addition to the four principles, the model (Figure 3.2) highlights six interlinkages between the four principles. These are interlinkages between;

- (i) social and environmental sustainability is equity of access to natural resources,
- (ii) social and institutional sustainability is a participatory democracy,
- (iii) environmental and institutional sustainability is care for the environment,

- (iv) economic and environmental sustainability is eco-efficiency,
- (v) institutional and economic sustainability is justice, and
- (vi) social and economic sustainability is a fair to burden sharing of costs and benefits (Wuppertal Institute, 1999; Cottrell et al., 2007; Shen, 2009).

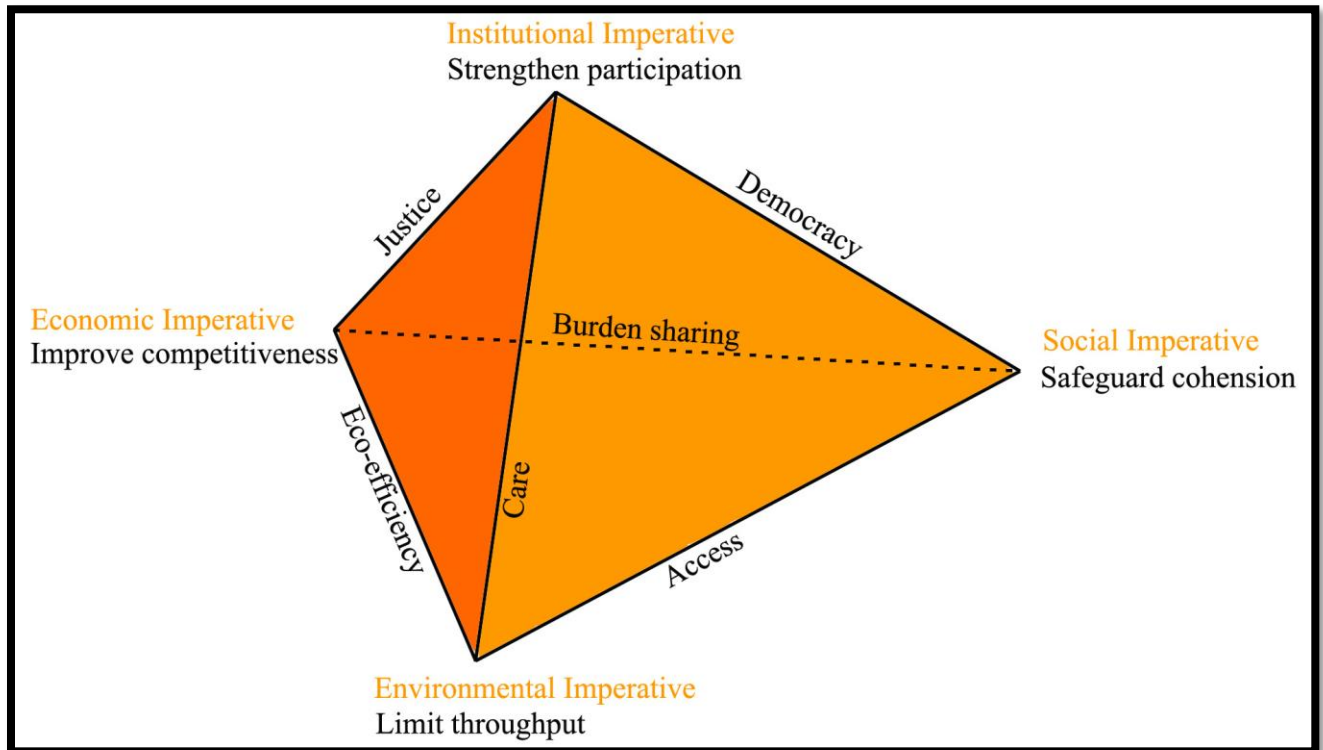


Figure 3.2: PoS model (Source: Shen, 2009:34)

The strength of the PoS lies in tracing the interlinkages between the institutional imperative and the three other sustainability spheres. The integration of institutional sustainability within the framework provides a broader and more holistic approach to mapping and understanding the interplay between and among various sustainability principles. It is argued that without sustainable institutions, the three pillars of ecological sustainability, economic sustainability, and social and cultural sustainability are likely to fail (Brown, 1998; Cottrell et al., 2007). In the model, institutional sustainability strengthens participation. Participatory development entails inclusive decision-making, devolution of power and tapping into the social capital. It has been observed

that obtaining 'user buy-in' is essential in making any change to policies or when introducing new ones (Mogomotsi et al., 2018). According to Brown (1998:57),

“Successful growth and development require a complex of effective and efficient institutions in all sectors – public, private and non-government/non-profit. Institutional sustainability is therefore no less – and in fact, one could argue, is far more important than the other notions of sustainability as all these are ultimately dependent on institutions.”

Although the concepts of sustainability and sustainable development are often used interchangeably and loosely in academic literature, some scholars argue that the concepts are idiosyncratically different (Harris and Leiper, 1995; Butler, 1999; Liu, 2010). As put bluntly by Diesendorf (2000:21), “sustainability and sustainable development are contestable concepts, like democracy, truth and justice”. At the same time, these concepts are intrinsically linked in a sense that sustainable development is traceable to the concept of sustainability in environmental resources management that grew to prominence in the 1970s (Mogomotsi et al., 2018). According to Liu (2010:460), sustainability is “broadly state-focused” while sustainable development is “process-oriented”. Accordingly, sustainability is regarded as a goal of sustainable development, while sustainable development leans more towards managed utilisation of natural resources in order to effect improved conditions for those who partake in such development (Liu, 2010). The latter is viewed argued to highlight the ethical principle of intergenerational equity more clearly, and regarded as “the long-term aspect of the concept of sustainability” (Diesendorf, 2000:22).

This thesis argues that the difference between these definitions is merely a matter of semantics. Both concepts are holistic, multi-sectoral, focused on intergenerational equity and prudent use of natural resources with a future outlook. The concepts are, nonetheless, distinctively different to 'sustainable tourism', which focuses on a particular sector in the economy. The description of sustainable tourism is given in the following section.

3.3. Sustainable Tourism

Since the 1980s and the early 1990s, there have been growing interests by governments and international organisations, such as the World Travel and Tourism Council (WTTC), United Nations Environment Programme (UNEP) and the United Nations World Tourism Organisation (UNWTO), to regulate the tourism industry. The interests have grown in part due to such factors as the pressure by stakeholders to preserve the environment, uplift communities through the sharing of tourism revenues and preserve local culture (Zolfani et al., 2015), as well as from the pressure to promote green and sustainable tourism (Bowman, 2011). The concept of ‘sustainable tourism’ is argued to have emerged as a reactive concept in response to adverse environmental, cultural and social externalities of tourism (Bramwell and Lane, 1993).

Despite its extensive use in literature for close to three decades, the concept of sustainable tourism is often loosely defined with a variety of interpretations. Stabler and Goodall (1996) are of the view that the complexity of defining the concept is catalysed by the many definitions that already exist in literature, subjecting it to an increasing range of interpretation. Consequently, there is a vast and varied usage and application of the concept. In some literature sources, the concept is applied as a mere political catchphrase (Wall, 1996) or a buzzword (Liu, 2003). Table 3.2 summarises some of the definitions of sustainable tourism found in the literature.

Table 3.2: Some of the definitions of sustainable tourism

Literature source	Definition
Eber (1992: 3)	Tourism and associated infrastructures that: both now and in the future operate within natural capacities for the regeneration and future productivity of natural resources; recognise the contribution that people and communities, customs and lifestyles, make to the tourism experience; accept that these people must have an equitable share in the economic benefits of local people and communities in the host areas

Butler (1993: 29)	Tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an infinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and wellbeing of other activities and processes
World Tourism Organisation (WTO, 1993: 7)	Tourism which meets the needs of present tourists and host regions while protecting and enhancing the opportunity for the future
WTO (1995)	Sustainable tourism development is any form of development, provision of amenities or tourist activity that emphasises respect for and long-term preservation of natural, cultural and social resources and makes a positive and equitable contribution to the economic development and fulfilment of people living, working or staying in these areas.
Nagle (1999: 127)	Sustainable tourism is what which can continue without damaging the environment, as well as integrating the local community and involving them in the planning and implementation of tourist development.
WTO (2001)	Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems.
Liu (2003: 461)	Sustainable tourism is defined as "all forms of tourism (conventional or alternative) that are compatible with and contribute to sustainable development

Niedziółka (2012: 159)	Sustainable tourism is defined as all forms of activities, management and development of tourism that preserve the natural, economic and social integrity and guarantee the maintenance of natural and cultural resources.
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(Source: Author’s compilation)

As highlighted in Table 3.2 above, the definitions of sustainable tourism, to some extent, typically emphasize attaining a balance in the use of natural resources. However, some definitions fall short in defining what exactly constitutes that balance, arguably creating room for various interpretations. As stated by Butler (1999:11), “It is unlikely, therefore, that there will ever be a totally accepted definition of sustainable tourism that is universally applied, because the very success of the term lies in the fact that it is indefinable and thus has become all things to all interested parties.”

Some scholars have criticised the scholarship of sustainable tourism, for example, Hunter (1997: 850) asserts that the dominant paradigm within the scholarship of sustainable tourism is “too parochial” as it fails to “provide a conceptual vehicle for policy-formulation which explicitly connects the concerns of tourism sustainability with those of sustainable development more generally”. There exists an argument that there is lack of progress in the scholarship in this area (Bramwell and Lane, 2005; Loulanski and Loulanski, 2011), and it has failed to be translated to practice three decades post-Brundtland (Lane, 2009; Ruhanen et al., 2015).

The action plan, dubbed the Agenda 21, which is a product of the Earth Summit held in Rio de Janeiro, Brazil, in 1992, serves as an international blueprint for sustainable development. According to Coetzee (2004:28), “Although Agenda 21 does not have any chapter specifically devoted to tourism, many of the recommendations included in Chapter 30 of Agenda 21, strengthen the role of Business and Industry as relevant to tourism activities”. Therefore, Agenda 21 applies to tourism in some important ways. First, it advocates for sustainable development that is sensitive to the natural environment (Tran, 2016). Second, the concept of sustainable development has been embraced as relevant to the tourism industry due to its inherent and

potential impacts to communities and the environment (McIntyre, 1993; Hall and Richards, 2002; Tran, 2016). Against this background, McIntyre (1993: 11) argues that tourism in the context of sustainable development should have the objectives to:

- a. “improve the quality of life of the host community,
- b. provide a high-quality experience for visitors, and
- a. maintain the quality of the environment in which both the host community and the visitors depend.”

In 1995, the WTO and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) jointly organised the World Conference on Sustainable Tourism in Lanzarote, Canary Islands, Spain (Coetzee, 2004). The Charter for Sustainable Tourism with eighteen (18) fundamental principles applicable to sustainable tourism was adopted at the conference. Some of the principles are summarised as follows;

- a. “Tourism development shall be based on criteria of sustainability,
- b. Tourism should contribute to sustainable development,
- c. Tourism must consider its effects on the cultural heritage and traditional elements, activities and dynamics of each local community,
- d. The active contribution of tourism to sustainable development must be based on efficient cooperation mechanisms at all levels,
- e. The conservation, protection and appreciation of the worth of the natural and cultural heritage afford a privileged area for cooperation, and
- f. Tourism should be fully integrated into and contribute positively to local economic development” (WTO, 1995).

There are various forms or types of sustainable tourism. These include ecological tourism (ecotourism), agritourism, rural tourism and farm tourism, soft tourism, pro-poor tourism and slow tourism, among others. This study focuses on ecotourism, agritourism, Community Based Tourism (CBT) and pro-poor tourism. The subsequent subsections summarise their descriptions.

3.3.1. Ecotourism

A Mexican environmentalist called Ceballos-Lascurain coined the term ecotourism in 1983. Initially, the term was used to describe nature-based tourism in relatively rural and less populated areas (Jamal et al., 2006). Since the conception of the term, there has emerged a vast array of literature, offering various definitions, conceptualisations and interpretations. For instance, Fennel and Dowling (2003) define ecotourism as a form of tourism that is environmentally and socio-culturally sustainable in a way that promotes natural and cultural base and enhances the appreciation of the natural environment. Similarly, Patterson (2002: 1) defines ecotourism as a form of tourism that promotes the conservation of the natural environment and “improves the welfare of local people”, while The International Ecotourism Society (TIES) defines it as a responsible tourism which promotes the well-being of local communities and conserves both the natural areas and the broader environment (TIES, 1990).

Myburgh and Saayman (2002:1) describe ecotourism as a “multifaceted science [that] incorporates the vast tourism industry with the environment and aims more at educating the tourist than at earning the maximum profit”. The authors describe ecotourism by highlighting the distinction between the core elements of tourism and factors that do not define the central mandate of ecotourism as summarised in Table 3.3.

Table 3.3: The description of ecotourism

What is ecotourism? It:	What is <i>not</i> ecotourism? It is not:
- Is responsible tourism	- Only for the elite
- Is an approach rather than an activity	- Part of mass tourism
- Is a learning experience	- Just about fauna and flora
- Is about sustainable development	- Just about community involvement
- Is about conserving fauna and flora as well as culture	- Concerned with the scale of operation, and
- Is about an interaction between the tourist, nature and culture	- Just conservation

- Is a tool for conservation	
- Provides economic opportunities	
- Is an enlightening experience	
- Aims to maintain a balance between community, conservation, tourism and culture, and	
- Tries to balance the economy and the ecology	

(Source: Myburgh and Saayman, 2002: 9-10)

Based on the definitions described above, it can be argued that a form of nature-based tourism that fails to improve the welfare of the local people is not ecotourism. The role of ecotourism in improving the welfare of local communities is buttressed by Honey (1999: 4) as follows;

“Around the world, ecotourism has been hailed as a panacea: a way to fund conservation and scientific research, protect fragile and pristine ecosystems, benefit rural communities, promote development in poor countries, enhance ecological and cultural sensitivity, instil environmental awareness and a social conscience in the travel industry, satisfy and educate the discriminating tourist, and, some claim, build world peace.”

Essentially, ecotourism has multiple aims of promoting economic wellbeing of local communities without compromising the integrity and quality of the natural environment while providing a learning and a fulfilling experience to the tourists. Myburgh and Saayman (2002:8), and van der Merwe et al. (2017) argue that there are four pillars of ecotourism, namely:

- a. Promotion and enhancement of the natural and cultural environment,
- b. Effective planning and sustainable management of the environment,
- c. Participation by the local community, and
- d. Provision of environmental education.

It is argued that the promotion of local community participation is often beneficial due to the increase of multiplier effects through the reduction of leakages, and improving social welfare and infrastructure (de Witt et al., 2014). The promotion and enhancement of the natural environment are concerned with maintaining environmental integrity (Saayman, 2009; de Witt et al., 2014).

Some scholars place emphasis on maintaining environmental integrity through undisturbed natural areas (Lawton and Weaver, 2001; de Witt et al., 2014), while others argue that “spaces that have been modified (such as agricultural lands, urban and peri-urban areas, and even devastated landscapes) can also be utilised for ecotourism purposes” (de Witt et al., 2014:182). Some of the ways of promoting environmental integrity are through limiting the number of visitors and managing the behaviour of visitors through such tools environmental education Littlefair, 2004; Powell and Ham, 2008; de Witt and van der Merwe, 2014).

Before the conception of the term ‘ecotourism’, Hetzer (1965) identified the four principles of ‘responsible tourism’ as; (i) minimising environmental impacts, (ii) respecting host cultures, (iii) maximising the benefits to local people, and (iv) maximising tourist satisfaction. These principles are used to characterise ecotourism (Bramwell and Lane, 1993; Blamey, 2001). From the definitions above and these principles, there seems to be convergence in the conceptualisation of ecotourism at least in three aspects. Firstly, ecotourism is nature-based. Secondly, it supports the conservation and sustainable use of natural resources. Lastly, it positively benefits local people and communities. In addition to these aspects, Swarbrooke (1999) notes that ecotourism is usually small-scale, with minor impact to host culture. Other features are summarised in Table 3.4 below.

Table 3.4: Characteristics of ecotourism

Feature	Description
Scale	- Small-scale, in keeping with the ability of a destination to absorb tourist without damage
Impact on physical environment	- Little extra demand on infrastructure; little new building
Host community relations	- Informal contact; interaction with all types of local people
Socio-cultural impact	- Minor impact on host culture; labour needs are wholly met from the local community
Economic impact	- Most tourist income is retained in the local economy; additional income from tourism complements traditional economic activities
The importance of location	- The specific location offers a unique experience that cannot be found elsewhere

(Source: Swarbrooke, 1999: 18)

While the emphasis on improving the welfare of local communities sounds noble, it is somewhat impractical. The questions that arise are; how do for-profit businesses balance conservation, community upliftment and making a profit? Which one of these takes priority over others? As argued by Scheyvens (1999:245), “When business is the main driving force behind ecotourism it is not surprising that the ventures which emerge may serve to alienate, rather than benefit, local communities”. Without affording local communities some degree of control over their natural resources and the tourism activities taking place, a few benefits will trickle down to local communities.

According to Akama (1996), a significant proportion of the benefits will not accrue to local communities for as long as outside operators or the government wholly own ecotourism ventures. Furthermore, if the communities are excluded from policy-making processes, the tourism industry will remain an elitist venture with power differentials. As neatly summarised by Solomon in Hall (2007:114),

For as long as the rich and powerful are going to draw up the parameters and architecture of tourism policy, nothing will change – not much, in any case. How can it? For, after all, the investor is there to make profits. Social responsibilities do not factor – evidence of this is too thin to be counted or weighed in. The occasional burst of charity is not what we are talking about and asking for. Tourism is, virtually, for all intents and purposes, one with a purely economic function insofar as the industry is concerned...

In an attempt to create a framework that ensures that ecotourism addresses the needs and wellbeing of local communities, some scholars propose that the locals must be empowered (Akama, 1996; Lew, 1996; Scheyvens, 1999). Scheyvens (1999) proposes that local communities need to be empowered through four different levels outlined in Table 3.5. It is argued that small, sporadic cash gains to local communities are signs of economic disempowerment (Scheyvens, 1999). One of the indicators for social empowerment is community cohesion, while psychological empowerment is reflected by enhanced self-esteem of many community members (Scheyvens, 1999).

Table 3.5: Framework for determining the impacts of ecotourism initiatives on local communities

	Signs of empowerment
Economic empowerment	Ecotourism brings lasting economic gains to a local community. Cash earned is shared between many households in the community. There are visible signs of improvements from the cash that is earned (e.g. improved water systems, houses made of more permanent materials)
Psychological empowerment	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. Increasing confidence of community members leads them to seek out further education and training opportunities. Access to employment and cash leads to an increase in status for traditionally low-status sectors of society, e.g. women, youths.

Social empowerment	Ecotourism maintains or enhances the local community's equilibrium. Community cohesion is improved as individuals and families work together to build a successful ecotourism venture. Some funds raised are used for community development purposes, e.g. to build schools or improve roads.
Political empowerment	The community's political structure, which fairly represents the needs and interests of all community groups, provides a forum through which people can raise questions relating to the ecotourism venture and have their concerns dealt with. Agencies initiating or implementing the ecotourism venture seek out the opinions of community groups (including special interest groups of women, youths and other socially disadvantaged groups) and provide opportunities for them to be represented on decision-making bodies, e.g. the Wildlife Park Board.

(Source: Scheyvens, 1999:246)

It has been noted that “in less developed countries of sub-Saharan Africa, afflicted by debilitating rural poverty, tourism is perceived to be one of the few options for development” (Briedenhann and Wickens, 2004: 71). Botswana is not an exception. In Botswana, the Department of Tourism conceptualises ecotourism as a form of tourism that minimises the conflict between the complex interactions between local communities, tourists, the tourism industry and the environment (Department of Tourism, 2002). More formally, Botswana has adopted the International Ecotourism Society’s definition of ecotourism, wherein ecotourism is defined as “responsible travel to natural areas that conserves the environment and sustains the well-being of local people” (Department of Tourism, 2002).

The country has developed and adopted a National Ecotourism Strategy (NES) in 2002. Through the NES, the Department of Tourism commits itself to promoting tourism that improves the financial development of communities, enhances learning and sustains the natural environment. In the NES, Botswana defines ecotourism as,

Tourism to arrears of natural and cultural heritage that is planned and managed with the objective of:

- (i) minimising negative social, cultural and environmental impacts,

- (ii) maximising the involvement in, and the equitable distribution of economic benefits to, host communities,
- (iii) maximising revenues for reinvestment in conservation,
- (iv) educating both visitors and local people as to the importance of conserving natural and cultural resources, and
- (v) delivering a quality experience for tourists (Botswana Tourism Organisation, 2008:2).

Hirtenfelder (2014:33) argues that the country uses the primary objectives as a way of “pander[ing] to a safer territory” in recognition of the debates and restrictions around the definition of tourism. These primary objectives are used as indicators for ecotourism certification in Botswana. In addition to the five primary objectives enshrined in the definition, the NES has eight subsidiary objectives, which are;

- a. To ensure that the planning, development and management of tourism in Botswana is consistent with the concept of sustainability;
- b. To facilitate the development of economically-viable and effectively managed ecotourism enterprises;
- c. To increase the number of Botswana meaningfully involved in, and benefiting from, the tourism industry;
- d. To promote marketing initiatives which support the sustainable development and diversification of the tourism industry in Botswana;
- e. To enhance the understanding of the concept of ecotourism among all stakeholder groups, and to raise awareness of the costs, benefits, opportunities and implications of ecotourism development for each;
- f. To facilitate the development of tourism infrastructure that minimises adverse impacts maximises the benefits of ecotourism and is sensitive to target market expectations;
- g. To promote consistently high-quality ecotourism standards throughout the country’s tourism industry in line with international target market expectations; and
- h. To facilitate the development of Botswana’s ecotourism industry through improved inter- and intra-sectoral coordination and collaboration (Department of Tourism, 2002).

Through these eight subsidiary objectives, the county recognises that there is a need to develop the tourism sector with vigilant environmental and cultural planning in order for the sector to be sustainable. The tourism sector should hence find a balance between economic viability and environmental sustainability. This could be achieved through, for example, reducing the high costs of green management. Through the third objective, the concentration of Batswana in low-skilled and low-pay positions is problematised. Therefore, the NES offers the solution of increasing the number of Batswana in senior and high-skilled positions.

3.3.2. Agritourism, rural tourism and farm tourism

Over the years, there have emerged various literature sources defining agritourism. As a result, a wide variety of definitions of agritourism and voluminous terms of agriculture-related tourism that are comparable to agritourism exist. It is important to note that some literature sources refer to this as 'agrotourism' (see Kizos and Iosifides, 2009; Marin et al., 2015; Gholap et al., 2016). However, for this thesis 'agritourism' is adopted. This existence of a myriad of terms has created a "somewhat chaotic picture regarding a basic conceptual understanding of what agritourism entails" (Flanigan et al., 2013:395). In some literature sources, agritourism, rural tourism and farm tourism are often used interchangeably (for example, Busby and Rendle, 2000; Getz and Carlsen, 2000; Roberts and Hall, 2001; Hegarty and Przezborska, 2005; Barbieri and Mashega, 2008).

In literature, there are distinctions between various forms of agritourism. There is agritourism that promotes the use of agricultural produce or commodities, raw and processed (Gladstone and Morris, 2000; Butts et al., 2005) and one that utilises products and services based in agricultural settings (Bowler et al., 1996; Wall, 2000; Barbieri and Mshenga, 2008). There are also "agritourism products where agriculture per se is a noteworthy feature of the product being consumed, through activities such as harvesting crops or having contact with farm animals" (Flanigan et al., 2014:396). In addition to these distinctions, Phillip et al. (2010) summarise the conceptual typology for defining agritourism as captured in Figure 3.3.

According to Figure 3.3, agritourism is described and identified in line with three discriminators and five distinct types. The activities and products of agritourism serve as discriminators listed on the left-hand column and are linked to the types on the right-hand column. Non-working farm agritourism activities include agricultural heritage where “...accommodation in a converted farmhouse..., or where agricultural practices past or present form part of the tourist product” (Phillip et al., 2010:756). In a ‘working farm, passive contact’ (WFPC) agritourism, the activities allow the farmers to exploit resources in a way that supplements their livelihoods and income without necessarily interfering with agricultural activities (Wall, 2000; Phillip et al., 2010). One of the ways of supplementing income through WFPC agritourism is through the provision of accommodation facilities such as holiday cottages in the farm (Figure 3.3).

In ‘working farm, indirect contact’ (WFIC) agritourism, the linkages between the local agricultural sector and tourism are strengthened through integrating agriculture and tourism, through the creation of avenues for making the two sectors complementary and “closely intertwined” (Gladstone and Morris, 2000: 93). This type of agritourism can also be achieved by, for example, improving the sale of agricultural produce to tourists and tourism-related businesses (Phillip et al., 2010). ‘Working farm, direct contact, staged’ (WFDCS) agritourism allows the tourists to experience local agricultural activities that have been staged for tourism, while ‘working farm, direct contact, authentic’ (WFDCA) agritourism permits the tourists to physically experience local agricultural activities first-hand (Phillip et al., 2010).

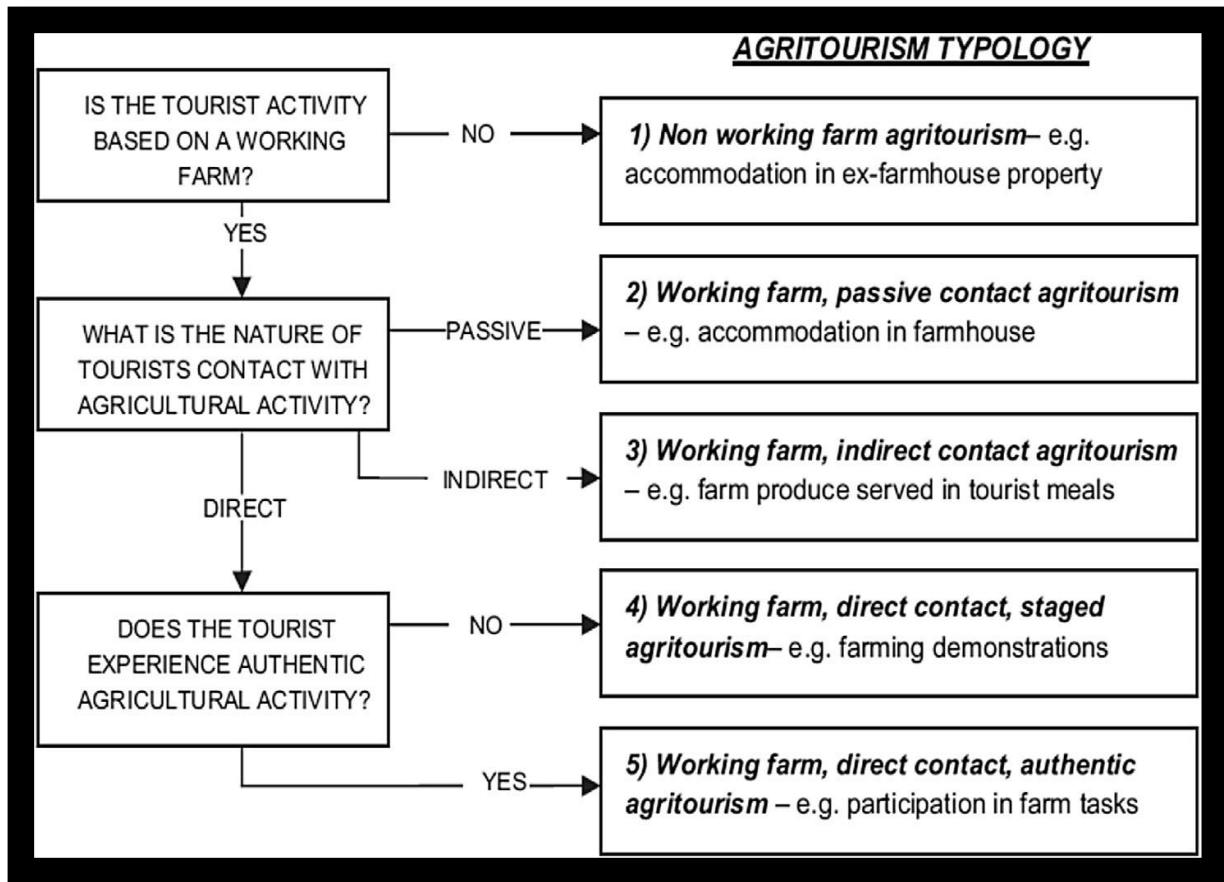


Figure 3.3: A typology for defining agritourism (Source: Phillip et al., 2010: 756)

However, the various forms of agritourism are beyond the scope of this study. This study argues that agritourism, farm tourism and rural tourism are symbiotic in that rural tourism encompasses agritourism and farm tourism. In essence, agritourism and farm tourism are subsets of rural tourism. All of these forms of sustainable tourism are related to both to agrarian activities and off-farm livelihood diversification (Roberts and Hall, 2001). As highlighted in Chapter 1, in this study, agritourism is defined as tourism that contributes positively to the socio-economic development of rural areas within which it is situated. In addition, it promotes positive interactions between the local traditional stakeholders and tourists without compromising the sustainability of natural resources and social values.

The scholarship of agritourism goes beyond studying tourism as an auxiliary and independent activity. It is concerned with understanding the degree of symbiosis between agriculture and

tourism (Fleischer and Tchetchik, 2005). The relationship between these two livelihood activities oscillates between conflict and coexistence, with the potential of effecting change in favour of the latter through creating reciprocity of benefits. For instance, “reallocating farm labour results in the more efficient use of this resource as tourism employs idle farm manpower, and visitors’ exposure to the farm products helps market those products” (Fleischer and Tchetchik, 2005: 494).

3.3.3. Community-Based Tourism

Over the years, Community Based Tourism (CBT) has been identified as a sustainable tourism model for attaining maximum socio-economic benefits while minimising the environmental impacts of tourism (Russell, 2000; Blackstock, 2005; Moscardo, 2008; Tolkach and King, 2015). It is also argued to be a way of fulfilling the dual responsibility of achieving economic and social regeneration “while protecting local cultures against the rising tide of globalisation” (Russell, 2000: 89). CBT is aligned with the view that community participation and stakeholder cooperation should form the cornerstone of sustainable tourism development (Tolkach and King, 2015). According to Russell (2000: 89), CBT must fulfil three criteria, namely;

- i. It should have the support and participation of local people;
- ii. Much of its economic benefit should go to people living at or near the destination, and
- iii. The act of tourism must protect local people's cultural identity and natural environment.

CBT is premised on the central tenet that “healthy, thriving communities are the touchstone for a successful tourism industry (Murphy, 1988:105). It entails the incorporation of the community’s values, needs and visions in tourism planning and implementation (Murphy, 1988; Blackstock, 2005). CBT also advocates for empowerment and capacity building as tools for attaining community development objectives (Tolkach and King, 2015). However, Giampiccoli and Mtapuri (2012:32) caution that empowerment in reference to CBT “must be seen as a community (or class) conscientisation process” and must be “be understood as intrinsically associated with issues of community development, as a social transformative process through (in

Gramscian/Freirian terms) the understanding and opposing of hegemonic structures and working towards alternative development solutions". Essentially, it extends beyond the premise that local community participation is confined to the locals' role as employees or the communities' goodwill towards tourists (Blackstock, 2005; Laws, 1995). As argued by Arnstein (1969), for participation to be meaningful, communities should be empowered to redistribute costs and benefits equitably. This necessitates power redistribution in favour of communities. "Practical participation requires both the right and the means" (Okazaki, 2008:512).

CBT is concerned with consensus-based decision-making, local control of tourism development and the equitable flow of benefits (Blackstock, 2005; Murphy, 1988). Therefore, the act of participation embedded in CBT is "not only about achieving the more efficient and more equitable distribution of material resources: it is also about the sharing of knowledge and the transformation of the process of learning itself in the service of people's self-development" (Blackstock, 2005:52). It extends to the provision of the local with "the resources, opportunities, vocabulary, knowledge and skills to increase their capacity to determine their own future, and to participate in and affect the life of their community" (Ife, 2002: 208).

Despite the general nobility of CBT, it has been faced with criticism (Okazaki, 2008). For instance, Blackstock (2005:52) argues that viewing the community as a homogeneous group is a stereotypical idealisation, leading to the "presentation of community is an *ideal* masquerading as social *fact*". In most cases, the supporters of CBT fail to acknowledge that the communities are heterogeneous, with elements of power dynamics and power relations (Hoggett, 1997; Blackstock, 2005). The failure to acknowledge the heterogeneity of communities and power relations that exist therein, in turn, ignores that fact that communities are capable of acting out of self-interest (Silk, 199). As argued by Reed (1997: 567), "power relations may alter the outcomes of collaborative efforts or even preclude collaborative action".

Other scholars argue that CBT tends to imply that local control of natural resources and tourism automatically leads to participatory decision-making, which is usually not the reflection of the

truth (Reed, 1997; Wyllie, 1998; Blackstock, 2005). It has been established that in some cases, CBT has benefited the ‘more powerful’ within some communities (Farrelly, 2011; Litka, 2013; Tolkach and King, 2015). Nonetheless, CBT is regarded as one of the best approaches for sustainable tourism for some reasons (Pearce, 1994; Okazaki, 2008). When carefully planned and implemented, CBT presents a “win-win situation for most rural communities” (Blackstock, 2005: 39), and it serves as a “counterweight to neocolonialism, neo-liberalism and conventional mass tourism” (Tolkach and King, 2015:389). As neatly summarised by Esposito (2009:1),

“Nothing seems more appropriate today than thinking community; nothing more necessary demanded and heralded by a situation that joins in a unique epochal knot the failure of all communisms with the misery of new individualism. Nevertheless, nothing is further from view; nothing so remote, repressed, and put off until later, to a distant and indecipherable horizon.”

Over the years, there has emerged a small body of literature that attempts to characterise CBT specifically, and sustainable tourism broadly, for purposes of monitoring and evaluation (Tanguay et al., 2011; Mtapuri and Giampiccoli, 2014; Giampiccoli et al., 2015). A study by Giampiccoli et al. (2015:1200) proposes and outlines eight fundamental pillars at the core aim of evaluating a CBT “for purposes of support, monitoring and evaluation”. The eight pillars are referred to as the “eight Es model”, and they include;

“**Endogenous** (emphasising a reliance on local resources); **Environment** – (reflecting the importance of caring for the environment, and broader environmental conditions and infrastructure); **Education** – (to advance skills and education); **Empowerment** – (which embraces economic, psychological, social and political empowerment); **Equity** – (for equitable distribution and redistribution of both benefits and resources); **Evolving** – (always improving and changing to take advantage of dynamic opportunities); **Enduring** – (for long-term sustainability) and supporting **Entrepreneurship** – (for innovation, creativity and viability)” (Giampiccoli et al., 2015:1200).

3.3.4. Pro-poor tourism

In the 1970s and early 1980s, research in tourism studies and management focused on using tourism as an apparatus for economic development (see De Kadt, 1979; Lea, 1988). The focus was broadened by integrating economic development in sustainability in the 1990s (see Smith and Eadington, 1992; Hall and Lew, 1998; Murphy, 2000). During this time, studies also expanded the debate of the role of tourism in sustainable development by establishing contemporary forms of tourism that ensure that communities benefit from the industry. In the 2000s, the studies further broadened to include the revisions of conceptualising tourism to include the equity dimension to the broader debate of sustainable development and discussing the role of communities as critical drivers of such development (see Reid, 2003; Weaver, 2004).

Some studies devised strategies through which equity can be enhanced. For example, Ashley et al. (2000 and 2001) draw from the broad scholarship of pro-poor growth to recommend strategies to improve net benefits to the poor from the tourism industry. The studies place tourism development at the crux of poverty alleviation agenda. Such tourism development that is centred on promoting the net benefits of tourism to the poor is called pro-poor tourism (Chok et al., 2007). According to the Department for International Development (DFID, 1999: 1), the emphasis of pro-poor tourism is on “unlocking opportunities for the poor within tourism, rather than expanding the overall size of the sector”.

Some scholars argue that given the fact that foreign and private sector interests often drive the tourism sector, the potential of the sector to contribute significantly to poverty elimination in developing countries is over exaggerated (Mbaiwa, 2017). The sector is characterised by revenue leakages (Mbaiwa, 2017). In addition, the tourism sector is seasonal and volatile as it is exceedingly susceptible to shocks such as natural disasters and foreign exchange (Roe and Urquhart, 2001). However, Roe and Urquhart (2001) caution that the concerns of shocks and volatilities are not unique to the tourism sector. Therefore, the focus should be on the advantages that have pro-poor potential. Such advantages include:

- The tourism sector is a diverse industry. This increases the scope for extensive participation, including the participation of the informal sector.

- The customer comes to the product, providing considerable opportunities for linkages (e.g. souvenir selling).
- Tourism is highly dependent upon natural capital (e.g. wildlife, scenery) and culture. These are assets that some of the poor have, even if they have no financial resources.
- Tourism can be more labour intensive than manufacturing (though less labour is intensive than agriculture).
- Compared to other modern sectors, a higher proportion of tourism benefits (jobs, small trade opportunities) go to women (Roe and Urquhart, 2001: 4).

There is a distinction between ecotourism and pro-poor tourism. It is argued that the primary focus of ecotourism is to preserve the cultural, environmental and natural resource base on which tourism depends (Chok et al., 2007). However, it does not sufficiently consider the “full range of impacts on the livelihoods of the poor” (Ashley et al., 2000: 1). Ecotourism encompasses community benefits as resultant goals to natural resource and cultural conservation and environmental protection. Ashley et al. (2000 and 2001) argue that community benefits are used either as incentives for safeguarding the natural environment or as a disincentive for the unsustainable use of natural resources.

In contrast, in pro-poor tourism, community benefits and pro-poor growth are explicit goals. According to Chok et al. (2007), “what ecotourism uses as means, pro-poor tourism views as ‘the end’”. Therefore, pro-poor tourism should “not be viewed as a tourism product, but rather as an approach to tourism development and management through which linkages are developed between tourism businesses and poor people as a way of leveraging and increasing the tourism benefits to the poor” (Manwa and Manwa, 2014: 5699).

Pro-poor tourism is focused on promoting and strengthening the linkages between the local economies and the private sector through collaborations and partnership (Mitchell and Ashley, 2010). These include, for instance, creating an avenue for the provision of supplies to tourism-related businesses by local communities. The linkages between the local small-scale farmers and the tourism industry could translate to the improved transactions of agricultural produce and

livestock supplies between the farmers and tourism-related establishments. According to Mitchell and Ashley (2010), the strengthening of the linkages between the local economy and the tourism sector provides three main types of benefits to poor communities, namely; direct effects, secondary effects and dynamic effects as illustrated in Figure 3.4.

Poor and local communities realise direct effects from tourism through direct employment within the tourism industry (Mitchell and Ashley, 2010; Manwa and Manwa, 2014). Other routes of realising direct effects of tourism include obtaining land rentals by leasing of communal land to tourism businesses, and the provision of cultural tourism services for profit (Mitchell and Ashley, 2010; Manwa and Manwa, 2014). Similarly, local communities could derive secondary benefits from the outsourcing and in-sourcing of services by tourism businesses. In this context, in-sourcing “refers to a corporation hiving off an operation; for example, the provision of opportunity for staff employed in housekeeping to run their unit as a business, eventually leading to the removal of these employees from the company’s payroll” (Manwa and Manwa, 2014: 5700). The development of the tourism industry within poor communities often results in the emergence of structural changes such as schools, tap water and roads, among others. These are referred to as the dynamic effects of tourism in the pathways of tourism benefits to the reduced model illustrated in Figure 3.4.

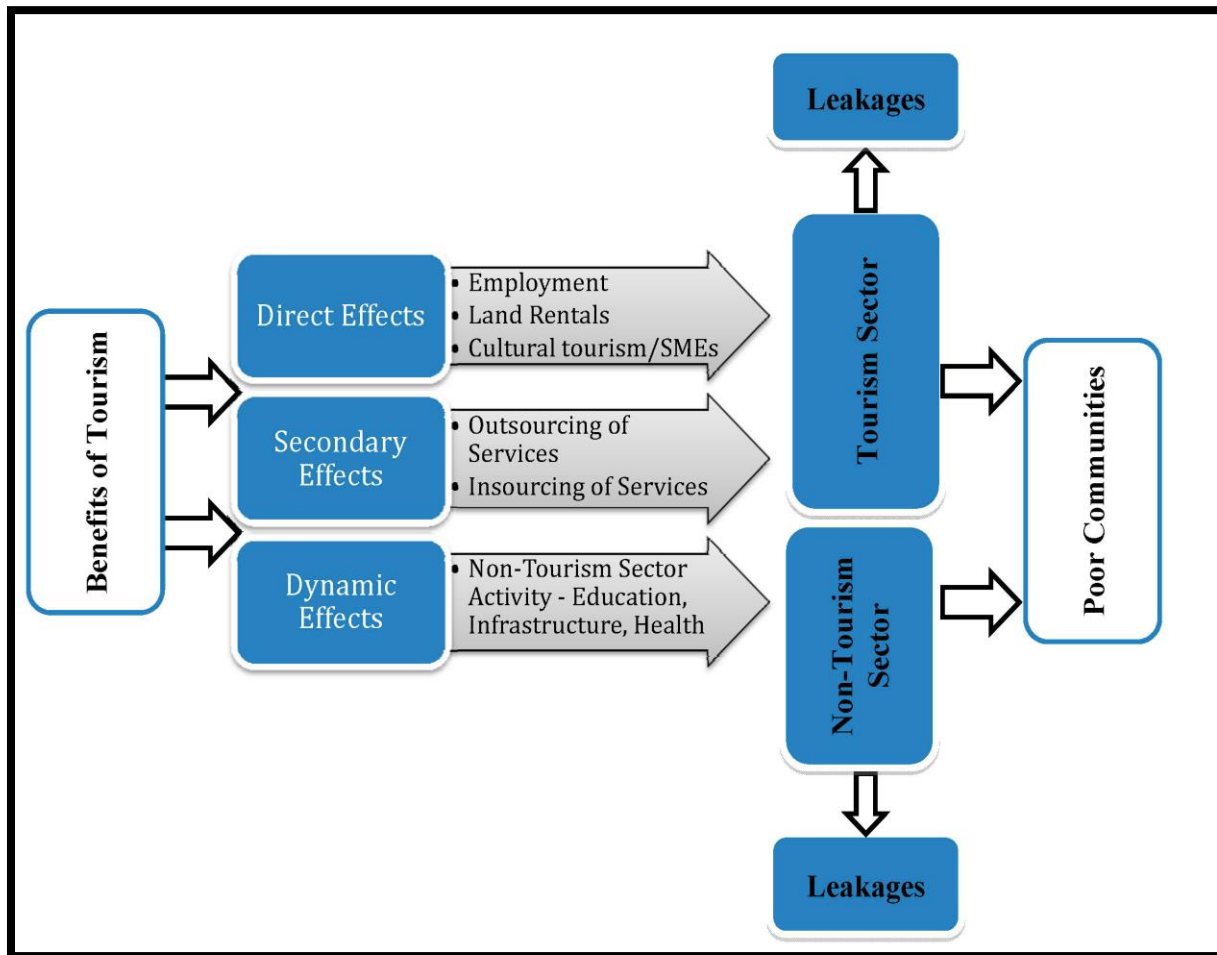


Figure 3.4: Pathways of tourism benefits to the poor (Source: Mitchell and Ashley, 2010; Manwa and Manwa, 2014)

The pro-poor tourism strategies range from private sector partnerships with communities, public-private joint ventures, public-private partnerships and public sector enhancement of infrastructure to enable growth, among other forms (Torres and Momsen, 2004). The overall aim of such strategies is to ensure a double function of simultaneously maximising the benefits of tourism to the poor, while significantly reducing the negative impacts of tourism. The specific objectives of the strategies include; expanding business and employment opportunities for the poor, enhancing collective benefits, capacity building, training and empowerment, mitigating the environmental impact of tourism on the poor, addressing social and cultural impacts of tourism, building a more supportive policy and planning framework, promoting participation, and bringing the private sector into pro-poor partnerships (Roe and Urquhart, 2001: 6).

There are several principles of pro-poor tourism identified in the literature. Some of the critical principles include the broader participation of poor people in tourism decisions, equitable distribution of benefits and costs, enhancing the impacts on the poor within the parameters of commercial viability and a using a holistic livelihood approach, among others (Ashley et al., 2000; Chok et al., 2007). It is argued that a narrow focus on the economic benefits of tourism is inadequate (Ashley et al., 2000; Chok et al., 2007). The sustainable livelihoods framework is often used as a holistic approach beyond the economic considerations. The following section discusses the framework.

3.4. Sustainable Livelihoods Framework

The Brundtland Commission on Environment and Development first introduced the sustainable livelihoods concept in 1987 (Solesbury, 2003). At the 1992 United Nations Conference on Environment and Development, the concept was expanded, with strong advocacy for the attainment of sustainable livelihoods as a broad goal for poverty eradication. More broadly, the sustainable livelihoods approach is a paradigm that acknowledges that people have inherent knowledge and capabilities, and it is focused on community-level actions (Chambers, 1986; Tao and Wall, 2009). The paradigm is often described as “people-centred” (Tao and Wall, 2009: 91). The World Commission on Environment and Development (WCED) was initially concerned about livelihood security. In its original report, the definitions were captured as follows;

“Livelihood is defined as adequate stocks and flows of food and cash to meet basic needs. Security refers to secure ownership of, or access to, resources and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long-term basis. A household may be enabled to gain sustainable livelihood security in many ways – through ownership of land, livestock or trees; rights to grazing, fishing, hunting or gathering; through stable employment with adequate remuneration; or through varied repertoires of activities” (WCED, 1987: 3).

The above definition was criticised for some reasons. Chief among the arguments is that this conceptualisation places economic growth primary to a people-centred livelihood thinking (Chambers and Conway, 1992). Chambers (1992: 216) argues that the conventional economic growth-oriented approach always places materials things, “especially the things of the rich... first, while people come last, with the poorer rural people last of all”.

In modifying the WCED’s definition, Chambers and Conway (1992) added the concept of capability into the definition of sustainable livelihoods. According to Chambers and Conway (1991: i),

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.”

The definition by Chambers and Conway (1992) eliminates the need for livelihoods to contribute net benefits to other livelihoods in order for them to be regarded as sustainable. Further, Chamber and Conway (1992) assert that capability, equity and sustainability are fundamental principles to sustainable livelihoods. According to their conceptualisation, a livelihood is considered sustainable if it can recover from vulnerabilities such as shocks and stresses associated with seasonalities (Figure 3.5). Therefore, households and communities need to develop and adopt coping mechanisms and adaptive strategies that cushion them from the vulnerabilities. Capabilities are understood as the ability to notice, adapting to, and recovering from the vulnerabilities (Ellis, 2000; Solesbury, 2003). However, Ellis (2000) contends that often, the use of the term ‘capabilities’ is unclear as it seems to be intertwined with asset and activities. In order to address this overlap, Ellis (2000: 10) conceptualises sustainable livelihoods as follows;

“a livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household.”

From Ellis' (2000) definition, two important points emerge. Firstly, livelihoods are not static. Secondly, institutions are viewed as mediators. Institutions govern the access to livelihood assets. The latter argument is captured Figure 3.5 below by the UK Department for International Development (DFID).

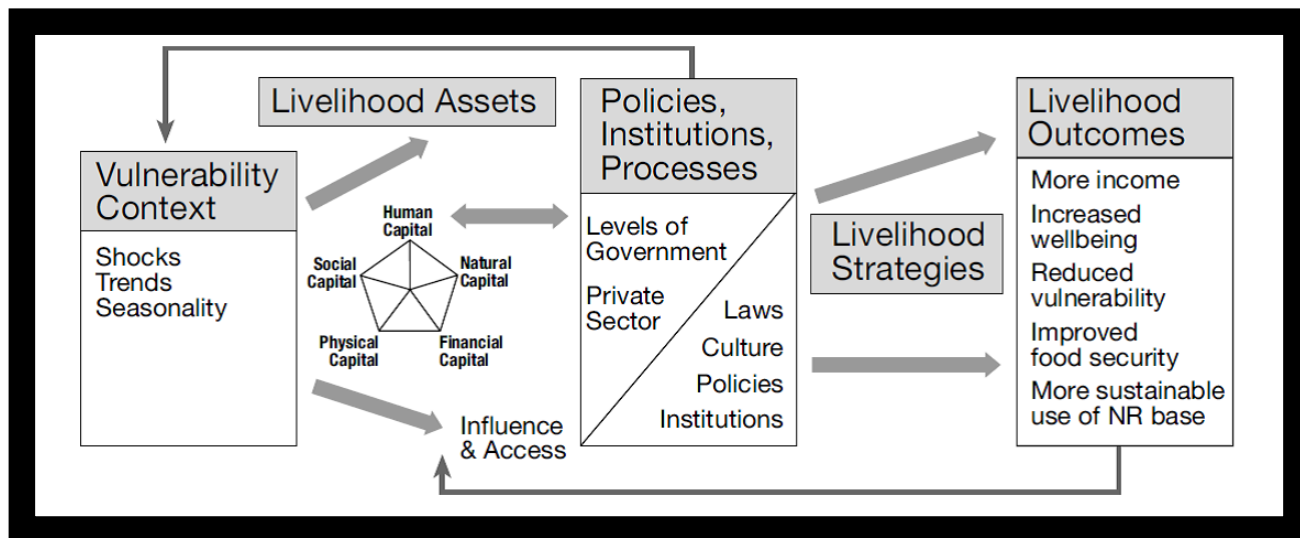


Figure 3.5: Sustainable livelihoods framework (Source: adapted from DFID, 1999: 11)

In Figure 3.5, a livelihood system comprises five main features, namely; livelihood assets, vulnerability context, policies, livelihood strategies, livelihood outcomes, and institutions and processes. There are five interrelated assets: human, natural, financial, physical and social capitals. Human capital encompasses skills, knowledge, physical capability and good health (Scoones, 1998). It considers the quality and quantity of labour resources available to households to enable their pursuit of various livelihood strategies. The quality of labour is crucial in enabling households to take advantage of economic opportunities (Moser, 1998).

Financial or economic capitals comprise financial resources such as savings, liquid assets, remittances and cash (Scoones, 1998). These are necessary for allowing people to access and maintain their livelihoods. Physical capital encompasses necessary infrastructure, such as irrigation canals, and producer goods, such as farm implements, that enable people to support

their livelihoods. Social capitals are social resources used by people to contribute to their livelihoods (Scoones, 1998; Lehtonen, 2004). These include social relations, social claims, associations and affiliations. These assets are necessary to provide coordinated actions for people who are pursuing varied and divergent livelihood strategies (Scoones, 1998).

Natural capital comprises of stocks of natural resources such as water, biodiversity, air, fish and soil, among other, as well as the environmental services from which livelihoods are derived (Scoones, 1998). Natural capital is considered to be the most significant of the capitals (Contanza et al., 1997). This is because, in one way or the other, all other capital assets owe their existence to natural capital. It has been argued that the majority of livelihoods in rural areas are dependent on the natural capital (Egoh et al., 2012).

Lundy and Adebayo (2016) argue that factors such as bad governance of natural resources, mismanagement of resources by the elite few, corruption, greenhouse emission and overgrazing are key in disrupting livelihoods and igniting conflicts. Combinations of these human-devised factors with natural causes present threats to people's livelihoods. To address some of these conflicts and threats, there is a need for individuals, communities and governments to design institutional parameters that dictate their access to resources (Lundy and Adebayo, 2016). These institutional boundaries are necessary for defining the conditions for competition and coexistence in natural resource access and utilisation. Scoones (1998: 8) notes, "Different people clearly have different access to different livelihood resources. This is dependent on institutional arrangements, organisational issues, power and politics". The institutional apparatus is not only crucial for identifying the barriers and prospects for sustainable livelihoods but also serve as the interface between micro level and macro level processes (Ellis, 2000; Cahn, 2002).

According to Scoones (1998), there are three broad livelihood strategies categories, which serve as a reflection of the various livelihood options available for rural people. These include migration, agricultural intensification or extensification and livelihood diversification. Rural households have the option to pursue a mix of livelihood strategies concurrently in their pursuit

of improving their livelihoods. In addition to the three broad categories, “people may stint, hoard, protect, deplete, claim, borrow, share, steal and so on” (Scoones, 1998: 17). The mixes of livelihood strategies are dynamic and complex, often resulting in different outcomes (Scoones, 1998). The combinations also result in trade-offs between different types of capitals.

However, as a tertiary industry, the link between tourism and sustainable livelihoods cannot be fully understood within the sustainable livelihoods framework (Shen, 2009). Unlike in primary or productive industries where the rural poor are the producers, in tourism the ‘producers’ are typically outsiders, such as investors and the government. Furthermore, the descriptions of sustainability and community participation in the sustainable livelihoods framework differ with the context of the concepts in tourism. In sustainable livelihoods framework, sustainability encapsulates strategies needed to strengthen the resilience of households and communities, and their capabilities of deriving benefits from livelihood strategies (DFID, 1999; Shen et al., 2008). Contrary, the sustainability of tourism is concerned with ensuring the intactness and attractiveness of the tourism destinations particularly, and the industry broadly (Sharpley, 2000). Furthermore, sustainable tourism appears to be duty performed at the macro level as opposed to being a duty of the rural poor at the micro level (Hunter, 1997; Sharpley, 2000; Shen et al., 2008; Shen, 2009).

While community participation traditionally refers to power distribution (Arnstein, 1969; Shen et al., 2008), in the tourism development process, community participation should be understood from two perspectives – “participation in the decision-making process” and “tourism benefits sharing” (Shen et al., 2008: 25). Accordingly, it has been argued that,

“Key tourism principles in this research include sustainability, community participation, and the dynamism which contain rich implications and may not be the same as the principles of the [sustainable livelihood approach]. Thus, it is necessary to further scrutinise the relationships and gaps between the [sustainable livelihood approach] and tourism in order to optimise the effect of rural poverty alleviation and development with tourism as a rural livelihood strategy” (Shen, 2009: 45).

In addition to being a tertiary industry, other peculiar characteristics of tourism define the industry. Firstly, tourism products are monopolistic (Shen et al., 2008). Tourism destinations and activities vary from one location to the other. The destinations have unique traits that attract tourists, and these traits cannot be replicated elsewhere. Therefore, there are no two identical tourism destinations the world over. Secondly, tourism products are non-transferable (Shen et al., 2008). The destinations are not “shippable” (Shen et al., 2008: 23). Thirdly, the products are enjoyed *in situ*, thereby requiring the consumer to travel in order to consume the experience (Shen et al., 2008). Fourthly, the consumption of tourism products is not applicable to the law of diminishing utility (Jafari, 1974; Shen et al., 2008; Shen 2009), which characterises the majority of physical products, including agricultural produce. Lastly, tourism products are perishable as they “cannot be ‘stored’ and are consumed at the point of production” (Shen et al., 2008: 23). These characteristics of tourism products and the industry as a whole are distinctively dissimilar to primary industries such as agriculture. Therefore, there are gaps between the sustainable livelihoods framework in Figure 3.5 and tourism. Consequently, the sustainable livelihoods framework (Figure 3.5) may not fully capture the uniqueness and complexities of tourism livelihoods. Shen (2009) proposes a Sustainable Livelihoods Framework for Tourism (SLFT) as a guiding framework in rural development when tourism is a livelihood strategy (Figure 3.6).

The SLFT proposes a tourism livelihood system in which households can undertake livelihood strategies that consist of tourism-related activities (TRAs) and non-tourism-related activities (NTRAs) (Shen et al., 2008). Households use one or a combination of these activities in order to achieve their livelihood goals. On the one hand, TRAs comprise of formal and informal tourism business, direct and indirect tourism-related employment, and farming for tourism (Shen et al., 2008; Shen, 2009). On the other hand, NTRAs consist of farming for purposes other than tourism, non-tourism-related employment, and labour migration, among other livelihood activities (Shen et al., 2008; Shen, 2009). It has been argued that as an emerging land use activity, tourism often becomes dominant over traditional livelihood strategies particularly, and NTRAs generally (Shen et al., 2008; Ma et al., 2018).

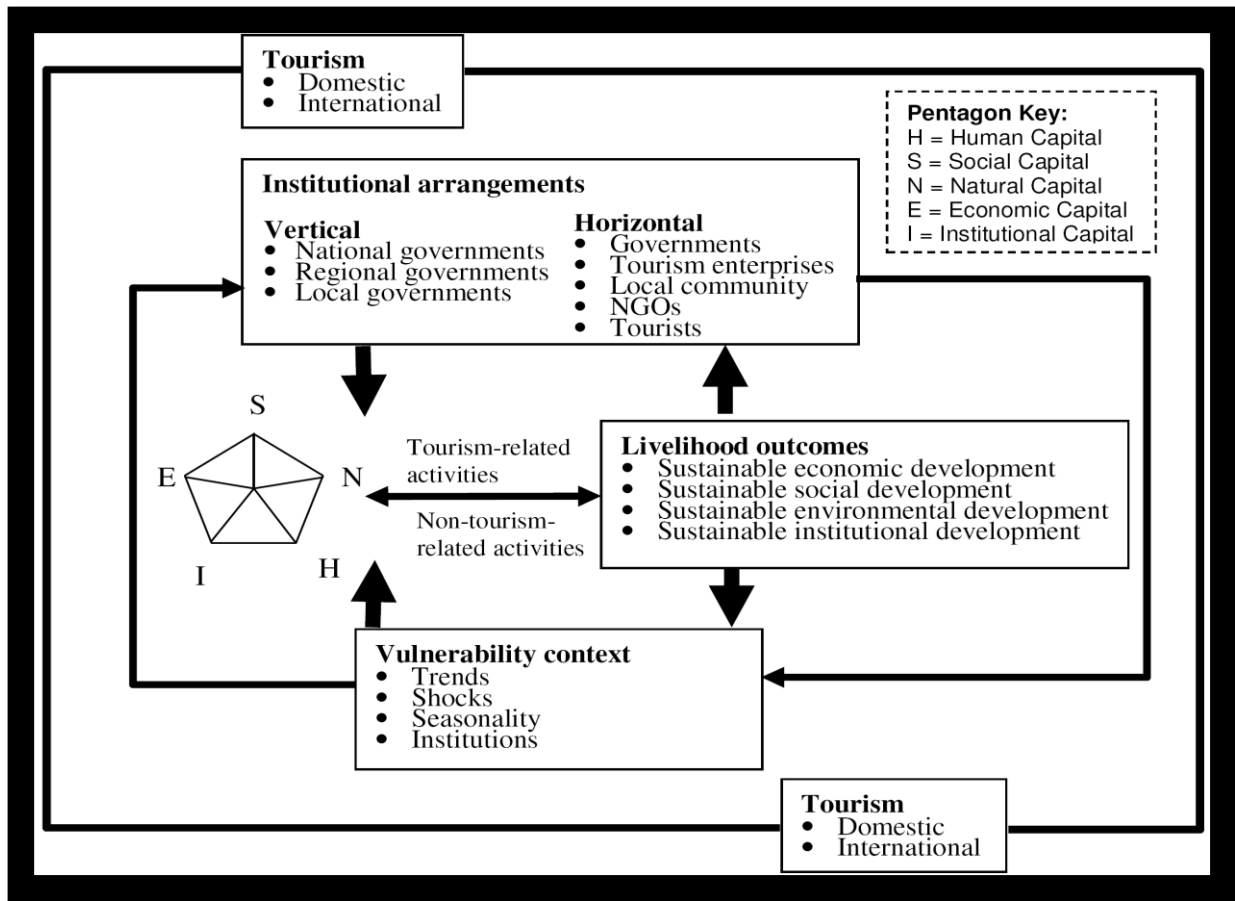


Figure 3.6: a Sustainable livelihoods framework for tourism (Source: Shen, 2009: 58)

Regarding the SLFT (see Figure 3.6 above), physical and financial capitals have been merged into economic capital. Within the framework, economic capital is defined as “as the basic infrastructure, producer goods and the financial resources that people use to achieve their livelihood objectives” (Shen et al., 2008: 27). The fifth capital encompassed in the SLFT is institutional capital. Shen et al. (2008: 27) define institutional capital as “providing for people’s access to tourism markets, tourism benefits sharing, and access and participation in the policy-making process, and the extent that people’s willingness to be involved is reflected in political decisions to achieve better livelihood outcomes”. It can be argued that institutional capital advocates for a thorough understanding of the relationships between various stakeholders in the tourism sector, thereby encouraging participatory and cooperative management of tourism products. As a livelihood asset, institutional capital seeks to address power dynamics and

differentials in the tourism sector through benefits sharing as well as access and participation in the policy-making process.

The institutional arrangements in the SLFT have been redesigned to define the vertical and horizontal arrangements. The governmental sectors established to drive the tourism sector, operating at local, regional and national levels are classified as vertical institutional arrangements (Figure 3.6). Similarly, horizontal institutional arrangements include external investors, tourists, local communities and non-governmental organisations (NGOs). In entirety, institutional arrangements refer to “the structure of the relationships between the institutions involved in some common endeavour”.

3.5. Conclusion

This chapter provided a synthesis of literature on sustainability, sustainable development, sustainable tourism theories and rural livelihoods. It discusses the study’s conceptual work with an effort to position the tourism sector within the sustainable livelihoods framework. The conventional, sustainable development paradigm encompasses economic, environmental or ecological, and social and cultural dimensions. The interaction of the three pillars is often referred to as the TBL framework of sustainability.

However, several studies have argued that the failure to acknowledge the importance of the fourth dimension of institutional sustainability is likely to contribute to the failure to achieve the other three dimensions. Institutional sustainability emphasises participatory decision-making processes and public involvement in natural resources management processes. An enabling institutional environment is hence necessary for strategically linking to the agricultural sector to enhance synergies, as well as to improve the contribution of the sector in agrarian communities. For an enabling institutional environment to be created, there is a need to appreciate the distinct features of the tourism sector, which are significantly peculiar.

The chapter argued that the peculiarity of the tourism sector makes drawing the link between tourism and sustainable livelihoods oversimplified with a lack of appreciation of the difference between tourism as a tertiary industry and other rural livelihood activities, which are primarily primary industries. In order to address the shortcoming of the orthodox sustainable livelihoods framework, the chapter discussed the SLFT as an alternative. These arguments are essential for analysing the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta (Chapter 5) and for determining the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta (Chapter 6). The latter requires an understanding of TRAs and NTRAs for in the SLFT discussed in this chapter.

The next chapter extensively discusses the research methodology applied for developing a sustainable institutional framework for the coexistence of tourism and agriculture in Botswana, using the Okavango Delta as a case study. The justifications for using the methodology are also addressed in the next chapter.

CHAPTER 4 RESEARCH METHODOLOGY AND METHODS

“While the content of knowledge is what has happened, what is taken as finished and hence settled and sure, the reference of knowledge is future or prospective. For knowledge furnishes the means of understanding or giving meaning to what is still going on and what is to be done.”

– John Dewey

4.1. Introduction

Knowledge is produced when researchers research in an attempt to answer the question they ask in their engagement with the world. Bouma (1996: 18) argues that,

“The challenge of the research process is to relate theory and research in such a way that questions are answered ... To answer our questions, we need both theory and data ... The result of the research process is neither theory nor data but knowledge ... The research process is a disciplined way of learning about ourselves and our world.”

Similarly, Cooper and Schindler (2006) argue that successful research is built on the foundation of clear conceptualisation and unambiguity. The latter is necessary in order for the research to be understood by others. Furthermore, the research design should promote the validity of the results obtained (Branch, 2006). This study adopted a research design framework proposed by Creswell (2003). According to the framework (illustrated in Figure 4.1), the first step is to define the elements of inquiry, which comprise of the philosophical underpinnings of the study. This then informs the approach to research. The approach is then translated into practice by defining the study’s design process.

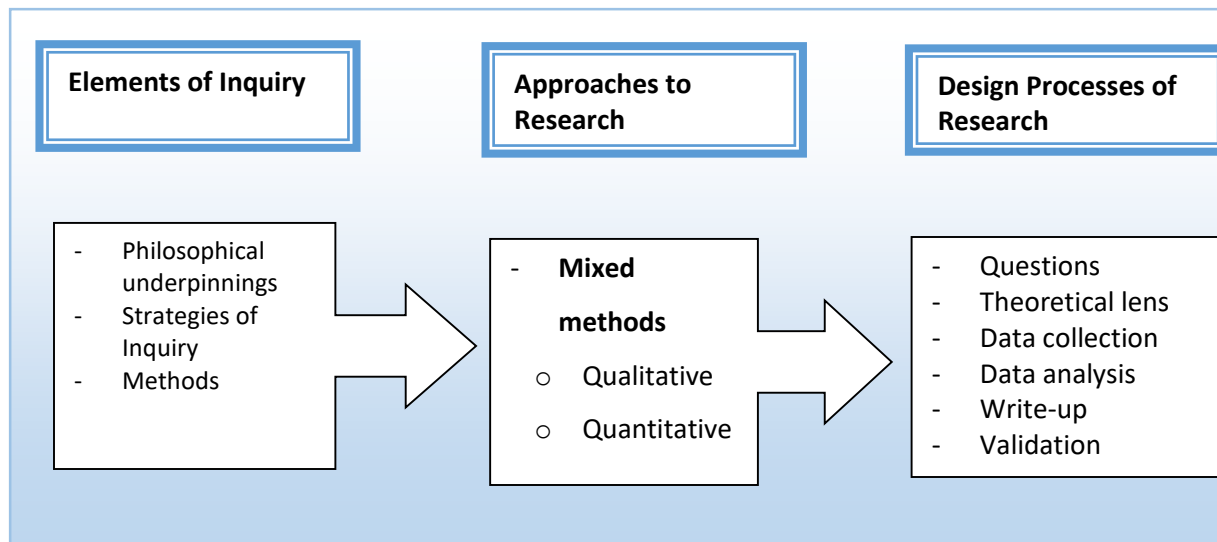


Figure 4.1: Research design framework (Source: modified from Creswell, 2003)

This chapter gives an overview of the research methods that were used to address the research objectives of this thesis. The chapter also discusses the justifications for applying the selected research methods and paradigms. The ethical precautions of the research methods are also outlined in this chapter.

4.2. Research Design

De Vaus (2001) describes research design as the overall strategy employed by the researcher to coherently and logically integrate the various components of the research in order to address the objectives of the study. A research design, therefore, comprises of the blueprint adopted by the study in the collecting, measuring and analysis of data (De Vaus, 2001). This section describes the research design used in addressing the study's specific objectives noted in Chapter 1. The description is done in three subsections, namely; (i) philosophical underpinnings of the study, (ii) mixed research methods, and (iii) case study.

4.2.1. Philosophical underpinnings of the study

There are two broad categories of philosophical underpinnings, namely ontology and epistemology. According to Smith (1996) and Hay (2006), there is a directional relationship between the two philosophical foundations. Hay (2006: 8) argues that,

“... we cannot know what we are capable of knowing (epistemology) until we have settled on (a set of assumptions about) the nature of the context in which that knowledge must be acquired (ontology)”.

From the description given by Hay (2006) above, ontology refers to the nature of knowledge. In order to analyse the shifting institutional processes and their implications on land use management within a complex setting marred with conflicting and competing uses, the ontological tenet about the nature of truth and reality was adopted in this thesis. It assumed that communities create truth and reality (Bromley, 2006, 2008a and 2012; Hirokawa 2014). Therefore, the reality comprises a variety of multiple “frequently conflicting and competing [social] constructions of the world” (Hirokawa, 2014: 1). Essentially, different land users use different lenses to view the land depending on their relationship to it. Valentinov (2015: 145) contends, “The reduction of environmental complexity is the main function of social systems, which thus allow people to make sense of the surrounding world.” Therefore, the process of reducing and understanding environmental complexity is an interpretive process.

This study hence used an interpretative or interpretive research approach. According to Patton (2002), an interpretive research process is applied in disentangling existing institutions, organisations and relationships in order to deal with social realities. It is premised on the assumption that various social factors have moulded the existing realities of institutions (Cavana et al., 2001; Andrade, 2009). It is a researcher’s role to unpeel such realities using conceptual thinking and theory building, while also observing the world from respondents’ angle through understanding and analysing their perceptions (Edwards and Skinners, 2009; Khan, 2014).

Epistemology is concerned with the way knowledge is acquired or what constitutes acceptable knowledge (Creswell, 2007). In the process of acquiring acceptable knowledge, epistemology is concerned about such questions as,

1. How reality can be known,
2. The relationship between the knower and what is known,
3. The characteristics, the principles, the assumptions that guide the process of knowing and the achievement of findings, and
4. The possibility of that process being shared and repeated by others in order to assess the quality of the research and the reliability of those findings (de Gialdino, 2009).

The epistemological framework for explaining the operational, institutional processes and changes applied in this study was volitional pragmatism. Volitional pragmatism is concerned about how societies make choices and organise their actions (Bromley, 2008a). It is also concerned with how habit and experience regulate or influence future volitional action. According to Morgan (2007: 67),

“A pragmatic approach would deny that there is any a priori basis for determining the limits on meaningful communication between researchers who pursue different approaches to their field. Instead, a pragmatic approach would place its emphasis on *shared meanings* and *joint action*.”

Therefore, volitional pragmatism, an individual agent's actions and choices are not predetermined but are instead based on an array of factors that determine their willingness to wait or act. It is premised on the assumption that “we work out what it is we think we want as we work our way through what it seems possible for us to have” (Bromley, 2008b; 4). Volitional pragmatism emphasises on the actual interactions that agents use in the problem solving and negotiation processes (Bromley, 2008b). It serves as a realistic, plausible way of thinking about the changing institutional landscape as changes present dynamic sets of choice domains due to the changes in opportunity costs inherent in the changing institutions. The NIE framework is based on the levels and results of interactions between agents and the choices they make within an institutional environment in pursuit of welfare and utility maximisation. Therefore, the analysis in this study, for example, how institutions influence conflict, necessitated the

application of volitional pragmatism due to its emphasis on choices based on “problem, problem solution, instruments by which that solution is best achieved” (Bromley, 2008b: 8).

Pragmatists can swing between induction and deduction, thereby ensuring the transferability of observations into theory, and then shift to the assessment of the theories through action (Morgan, 2007). In a pragmatism approach, “there is no problem with asserting both that there is a single “real world” and that all individuals have their unique interpretations of that world” (Morgan, 2007: 72). Therefore, it presents a shift from positivism that views the world through a “one-way mirror” (Healy and Perry, 2000: 119), to dualism and multiplicity of worldview captured by post-positivism.

Post-positivism embraces “methodological pluralism” (Wildemuth, 1993: 451) in viewing the world and addressing the objectives of the study. In post-positivism, the current state of institutions is defined through using different approaches that define context, values and path dependencies (Henderson, 2011; Sharp et al., 2011). Furthermore, it gives the respondents a voice, represents them as accurately as possible, discovers how their views of reality conflict with the facts, and recognise the art of data analysis from multiple dimensions (Khan, 2014). It captures the essence of a mixed methods approach to research, which acknowledges that there are different modes of inquiry in a single process. The mixed research methods approach is discussed in the next subsection

4.2.2. Mixed research methods

According to Creswell (2003), in mixed research methods, the researcher uses both quantitative and qualitative data in order to provide the best conceptualisation of the research problem. Within volitional pragmatism, the mixed research approach “opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis” (Creswell, 2003: 12). As argued by Patton in Oosthuizen et al. (2005:72), “by using a combination of observations, (e.g. interviewing and document analysis) the field

worker can use different sources to validate and crosscheck findings”. In this study, a mixed method research approach was applied in order to minimise flaws and to increase the accuracy of research results (Brewer and Hunter, 2006).

In this study, some of the specific objectives, such as the analysis of the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta, required the use of quantitative data. Furthermore, some of the research objectives required both the concurrent and sequential use of quantitative and qualitative data. The former entails collecting and analysing quantitative and qualitative data in consecutive phases, where one phase influences the other phase (van der Roest et al., 2013). The concurrent and sequential use of quantitative and qualitative data promotes validation of the findings and enables the researcher to make reliable inferences (van der Roest et al., 2013).

Quantitative research is conceptualised as a systematic research process that uses numerical data from a subset of a population and applies the findings to the whole population (Creswell, 2008). Creswell (2003: 18) defines a quantitative research approach as one that “employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data”. It applies quantifiable data from primary and secondary data sources to address research objectives and to conduct a social inquiry. It also uses statistical descriptors for the analysis of numerical data (Creswell, 2012).

A qualitative research approach permits the research to perform a social inquiry through exploring behaviours, a variety of perspectives and experiences (Burns and Grove, 2009). It provides a holistic picture to societal complexities that encompass the views of society members using an interpretive approach (Guba and Lincoln, 1994; Creswell, 2007 and 2008). According to Creswell (2007:15), qualitative research is,

“... an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports details of informants, and conducts the study in a natural setting.”

Some of the specific objectives in this study, for instance, the analysis of the institutions that influence the interface between tourism and agriculture in the Okavango Delta, required qualitative data in the form of document analysis. Moreover, the open-ended questions in household questionnaires, focus group discussion guide and key informant interview guide prompted opinion and perception responses that constitute qualitative data. The qualitative research approach was useful in providing an in-depth social and institutional inquiry through addressing “how”, “what” and “why” questions (Patton, 2002) in this study. The in-depth social and institutional inquiry was performed to existing social problem within its actual context using a case study approach (Yin, 2009). The following subsection describes a case study approach and its applicability to this study.

4.2.3. Case study research approach

This is an investigative method that utilises naturally existing information sources to provide a deeper understanding of phenomena using a qualitative and a quantitative research approach or both (Cohen et al., 2000; Yin, 2003). According to Yin (2003: 5), “the distinctive need for case studies arises out of the desire to understand complex social phenomena... [It] allows an investigation to retain the holistic and meaningful characteristics of real-life event ...” According to Alston (2008: 203), in NIE, case studies are referred to as “analytical narratives” ... “analytical” conveys the use of a theoretical framework or set of theoretical concepts and the term “narrative” conveys the use of historical qualitative evidence”. Generally, case studies permit new institutional economists to analyse the overall forces of institutional changes and their inherent effects (Alston, 2008). This study used the case study of the Okavango Delta in order to obtain the relevant results.

The Okavango Delta is the largest freshwater inland wetland in Southern Africa (Mendelsohn and el Obeid, 2015), fed by the Okavango River, which is one of the largest rivers in the region, spanning over 1000 km (Kgathi et al., 2006). It is part of the broader Okavango River basin. The

basin comprises the Cuito and Cubango catchment areas located in Angola, as well as the Kavango–Okavango catchment area located in Namibia and Botswana (Kgathi et al., 2006). There are various livelihood activities dependent on the basin in all of the three countries. In Angola, the upper catchment is used for hydropower generation, agriculture, fishing and development of tourism, among other activities (Kgathi et al., 2006). In Botswana and Namibia, the basin is used to support such livelihood activities as development of tourism, agriculture and fishing (Kgathi et al., 2006). The Okavango Delta not only supports livelihoods but also supports wildlife and overall biodiversity (Shinn, 2016).

In the Okavango Delta region in Botswana, the population has increased at an average rate of 3% per year (Mendelsohn and el Obeid, 2015). Furthermore, the region is faced with increasing environmental variability and biophysical changes due to an array of factors, such as climate change (Shinn, 2016). The environmental variability and biophysical changes consequently present severe challenges for rural livelihoods for communities in the region, as well as for wildlife resources and tourism development. The changing and unpredictable biophysical dynamics are coupled with other factors such as lack of supportive infrastructure in the rural agricultural areas in the rural Okavango Delta and the general conflicts between traditional livelihood activities, primarily farming, and contemporary land uses such as tourism. A combination of all these factors prompts new thinking on the institutional design within this complex setting. Therefore, the Okavango Delta was purposively selected as a case study to develop a sustainable institutional framework for the coexistence of tourism and agriculture in Botswana. There are several villages and settlements situated within the vast geographical region of the Okavango Delta. Within the Okavango Delta, villages reflective of natural resource conflict and coexistence were identified from literature sources and through site visits in July 2017. Subsequently, four villages were conveniently sampled. These four villages are Shorobe, Matsaudi, Gumare and Shakawe. Their locations within the Okavango Delta are illustrated in Figure 4.2.

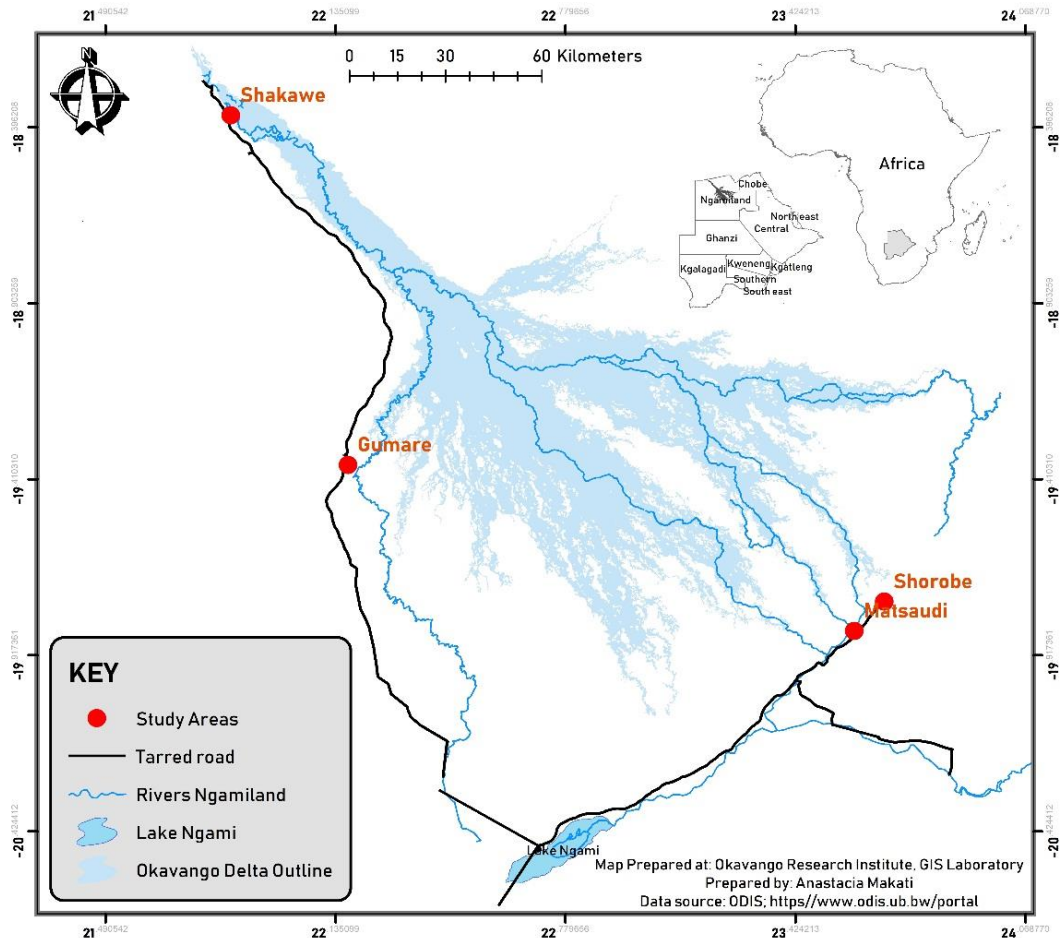


Figure 4.2: the locations of the four study sites (Source: Okavango Research Institute GIS Lab, 2018)

The following section discusses the research methods that were used in this study.

4.3. Research Methods

Two broad categories of research methods were used in this study. These are literature study and an empirical survey. The following subsections discuss how these methods were used to address the study's research objectives. The subsections also discuss the justification for using the research methods.

4.3.1. Literature study

The study's first two specific objectives required synthesis literature and document analysis. These were necessary for providing a broader understanding of the theoretical and conceptual frameworks of the study. Document analysis is described as a methodical technique for studying or evaluating both electronic and printed documents (Bowen, 2009). It is argued that document analysis often improves understanding and determines insights relevant to the research within a particular case study (Yin, 1994; Merriam, 1998; Bowen, 2009).

In order to address the study's third specific objective of analysing the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta, document analysis was used. The literature study and document analysis in this study depended on systematic reviewing technique. The technique provides "a meticulous way of finding relevant, high-quality studies; and integrating their findings to give a clearer and more comprehensive picture than any single study can produce" (Gough et al., 2013: 5). It synthesises literature through a rigorous and transparent approach for identifying studies and assessing their quality (Best et al., 2014).

The systematic review process was performed in three weeks from the 4th of June to the 25th of June 2018. The available literature sources were systematically identified in electronic databases such as Google Scholar, EBSCO Discovery Service, African Journal Index and Environment Index. The search used keywords such as sustainable tourism, agriculture, Okavango Delta, land use conflicts, land use institutions, natural resource institutions, Botswana land legislation and traditional stakeholders, among others. In total, the search generated 1611 documents ranging from policy documents, newspaper articles, peer-reviewed and non-peer-reviewed journal articles, books and book chapters. However, the number of documents retrieved was inflated by duplicate studies as well as policy documents and institutions saved in different names and different search engines.

In order to sieve the relevant literature, the exclusion criteria comprised of documents that were not written in English and Setswana. Studies and documents that contained the keywords with clear publication details were included. Using the criteria, 946 abstracts were reviewed after the removal of duplicate studies and replica institutions. A further 864 studies were excluded and only 86 full texts were reviewed. Of the 86, only 42 were directly related to the study's third specific objective.

In addition to literature study and document analysis, this study employed an empirical survey to address its research objectives. The following subsection discusses the empirical survey, its applicability to this study and the rationale for applying it.

4.3.2. Empirical survey

In order to address the fourth and fifth specific research objectives, this study relied on primary data collected through three methods, namely; household survey, key informant interviews and focus group discussions. This section discusses how the primary data were collected using three subsections; (i) sampling, (ii) data collection instruments, and (iii) data analysis.

4.3.2.1. Sampling

This study used various sampling techniques in order to collect data from different sources. The sampling techniques for each primary data sources are discussed below.

a. Key informants

A purposive sampling technique was used to select the key informants in this study. In purposive sampling, the respondents are selected using specific characteristics or qualities. Therefore, those who fail to meet the criteria are excluded (Sharma, 1997; Patton, 2002; Tayie, 2005).

Generally, purposive sampling enables the researcher to access the relevant and best available knowledge from the selected respondents (Sharma, 1997; Patton, 2002).

The criterion used for the selection of key informant interviewees in this study was expertise. An expertise-oriented approach involves the identification and selection of respondents that are knowledgeable about, and have rich experience with, an issue of interest (Creswell and Clark, 2011; Palinkas et al., 2015). Eighteen (18) key informants with knowledge on land use conflicts and the socio-economic issues reflecting tensions between agriculture and tourism in the Okavango Delta were selected. The respondents had at least five years of experience in the study area. The details of the key informants are summarised in Table 4.1.

Table 4.1: Details of the key informants

Characteristic	Description	Number of representatives
Gender	Male	13
	Female	5
	Total	18
Organisation or designation	<i>Dikgosi</i>	2
	Department of Wildlife National Parks	5
	Village Development Committee (VDC)	5
	Department of Animal Health and Production	2
	Botswana Tourism Organisation	2
	Department of Crop Production	2
	Total	18
Years of experience	5 - 10	8
	Above 10	10
	Total	18

b. Focus group discussion participants

Tynan and Drayton (1988: 5) define focus group discussions as a “qualitative method in which a small sample of respondents discuss elected topics as a group for approximately one to two hours”. In this study, four focus groups were held, one in each village. The groups comprised of

ten participants conveniently selected with the help of the Village Development Committee (VDC) and other community members. According to Nyumba et al. (2018: 23), “Ten participants are ... considered large enough to gain a variety of perspectives and small enough not to become disorderly or fragmented”. Convenience sampling is a non-probability sampling technique that includes subjects that meet specific practical criteria, such as geographical proximity, accessibility, willingness to participate and availability (Etikan et al., 2016). In this study, the focus group participants were members of the communities aged 21 years and above. The exclusion criteria comprised of members of communities with no farming experience and those younger than 21 years. The focus group discussions comprised of questions that necessitated farming experience of 3 years at the minimum, or at least knowledge of the conflicts between agriculture and tourism in the study area.

In order to eliminate dominant member syndrome and patriarchal society biases, each group comprised of an equal number of males and females. Therefore, 20 females and 20 males participated in the focus groups.

c. Households

The data of the numbers of farming households in the four villages did not exist. Therefore, this study depended on literature to estimate the number of farming households in each village. In Botswana, it has been estimated that 70% of rural households practice agriculture (Omari, 2010). Furthermore, a study by Madigele (2016) showed that about 70% of households in rural Boteti were involved in arable and pastoral farming. Rural Boteti is adjacent to the Okavango Delta. Using these literature sources, this study’s farming households were estimated to be about 2975 of the total 4252 households in the four villages as summarised in Table 4.1.

Table 4.1: Household sampling

Village	Number of households (Statistics Botswana, 2015)	Estimated number of farming households	Number of sampled households with response
Matsaudi	98	67	30
Shorobe	234	164	43
Gumare	2210	1547	76
Shakawe	1710	1197	72
Total	4252	2975	221

The total sample size obtained for this study was 228 households at 95% confidence level and 5% margin of error, with an estimated response rate of 80%. This was calculated using Raosoft sample size calculator, which uses the following equation for obtaining the sample size (n) and margin of error (E):

$$x = Z(c/100)^2 r(100-r)$$

$$n = N x / ((N-1)E^2 + x)$$

$$E = \text{Sqrt}[(N-n)x/n(N-1)]$$

Where N is the population size, r is the fraction of responses of interest, and $Z(c/100)$ is the critical value for the confidence level c . While the total sample size obtained for this study was 228 households, 230 households were sampled, and only nine households did not respond. Therefore, a total of 221 randomly selected farming households responded (Table 4.1) with a rate of 96.1%. Random sampling is a probability sampling technique where every member the population has a non-zero probability of being selected (Smith, 2010). Mostly, every farming household in all of the four villages had a non-zero probability of being selected to participate in this study. Some of the advantages of probability sampling include; generalisation can be done to the population through drawing inferences, minimises sampling biases and reduces the chance of systematic errors (Cooper and Schindler, 2006; Smith, 2010; Babbie, 2013).

Each of the sampled data collection sources required a specific data collection instrument. The following subsection discusses the data collection instruments used to obtain data from the three primary data sources.

4.3.2.2. Data collection instruments

Three data collection instruments were designed to solicit data from the key informants, focus group participants and households. The instruments used in this study, therefore, included a key informant interview guide, focus group discussion guide and a household survey questionnaire (appendices 1 to 4). In order to ensure validity of the instruments, the focus group discussion guide and household survey questionnaire were piloted in Matlapana, a village with similar traits to the ones selected for the study. Each instrument is discussed in this subsection.

a. Key informant interview guide

A key informant interview guide, written in English, was used to direct the interviews (see appendix 1). The questions were formulated in line with the objectives of the thesis. Moreover, the questions in the guide were classified into five subsections, namely; demographic data, land use, land use conflicts, institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta and closing questions.

The first section of the guide aimed at determining the profiles of the key informants to ensure their suitability to participate in the study. The profiles also helped to determine whether the respondents met the predetermined inclusion criteria of expertise. The anonymity of the respondents was, however, protected. The second section solicited data on land uses in the Okavango Delta and to determine the relationship between the traditional and contemporary land uses, while assessing the contribution of tourism to farming households individually. The third section asked questions related to the land use conflicts in the Okavango Delta and their effects on the economic and social wellbeing of the communities. The section comprised of open-

ended questions in order to allow the respondents to develop their responses (Shiffman and Kanuk, 2007), based on their expertise and experiences.

The fourth section solicited responses related to the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta. The key informants were also asked about the strengths and weaknesses of the institutions as well as the role of communities in the design and formulation of land use institutions. The final section captured the emerging issues that were not covered in the key informant guide but deemed necessary by the interviewees.

b. Focus group discussion guide

In this study, two sets of focus group discussion guides were generated, one written in English (appendix 2) and the other written in Setswana (appendix 3). The use of Setswana in focus group discussions was to promote the synergetic and collaborative pursuit of knowledge within a setting with participants who are not fluent in English but have knowledge about the study issues. As argued by Pitts et al. (2017: 2), one of the critical strengths of focus group discussions lies on the fact that “participants use local conversational and contextual resources available to them ... as they work together to establish common ground from which to build their conversation”. Focus group discussions in issues by the community in a language they understand are argued to promote communicative self-efficacy of the participants (Zorn et al., 2006; Pitts et al., 2017). The questions were within four subsections, namely; land use, land use conflicts, institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta and closing questions. The questions were characteristically similar to the ones in the key informant interview guide, although targeted to the community members as the respondents. They were also formulated in line with the objectives of the thesis.

c. Household survey questionnaire

The household survey questionnaire contained a variety of open- and closed-ended questions (see appendix 4). The questions were framed around three subsections. Section A collected the demographic and socio-economic data of the respondents. These included the age of the household head, gender, their highest level of education attained, income and employment status of the household head, among other details. The demographic and socio-economic details of the respondents were used in enriching the analysis in Chapter 6 of this thesis.

Section B contained questions on the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta in order to directly address the fourth specific objective of this study. The data on the quantitative aspects of the study, such as the earnings from informal employment and the wages from formal employment in the tourism sector were obtained in this section.

Section C used both open- and closed-ended questions to solicit data on the land use conflicts in the Okavango Delta. The closed-ended questions included Likert scale questions. The questions were framed using a 5-point Likert scale on the respondents' level of agreement, where 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree. Shiffman and Kanuk (2007) argue that Likert scale questions are effective in measuring the respondents' attitude towards an issue of interest. The aspects covered by the Likert scale question in Section C of the questionnaire included the perceived relationship between farming and contemporary land uses, as well as questions on the perceived impacts of tourism development to both arable and pastoral farming in the Okavango Delta.

The data collected using the three data collection instruments described above were then analysed to address the study's objectives. The following subsection describes the data analysis process employed in this study.

4.3.3.3. Data analysis

As discussed in section 4.2.2 of this chapter, this study used both the quantitative and qualitative data in order to provide the best understanding of the research problem. Therefore, a combination of data analysis steps and techniques were used, depending on the nature of the data. The analysis was done on the Statistical Package for Social Sciences (SPSS version 24.0).

Qualitative Data Analysis

The qualitative data were processed using the systematic guide detailed by Braun and Clarke (2006). Accordingly, the data were organised, cleaned, coded and categorised. This study used a concept-driven coding approach in order to identify patterns and similarities between the various data obtained. A concept-driven approach is defined as the identification of data using predetermined concepts or ideas (Gibbs, 2007). It links the data to the concept of the theory adopted in the study. In this study, the concept-driven coding was driven by the literature discussed in Chapters 2 and 3, as well as by the objectives discussed in Chapter 1. The qualitative data obtained from focus group discussions and key informant interviews were transcribed and coded using the concept-driven coding approach. The concept-driven approach was preferred because it allowed for the quantitative analysis of qualitative data. According to Vaismoradi et al. (2013:400),

“By using content analysis, it is possible to analyse data qualitatively and at the same time quantify the data ... Content analysis uses a descriptive approach in both coding of the data and its interpretation of quantitative counts of the codes...”

The study also used thematic content analysis to examine the qualitative data. Concept-driven approach and thematic content analysis were used side-by-side in this study because, as Rubin and Rubin (1995: 26) argues, “you discover themes and concepts embedded throughout your interviews”. However, thematic content analysis “provides a purely qualitative, detailed, and nuanced account of data” (Vaismoradi et al., 2013:400). The themes were aligned to the objectives of the study, and they represented patterned responses in the dataset (Braun and Clarke, 2006).

Quantitative Data Analysis

The qualitative data obtained from household survey were processed and categorised into earnings accrued by the household from informal employment, earnings from the sale of agricultural produce to tourism-related businesses, and salaries earned by other members of the household from formal employment within the tourism sector, among other categories. The data were then tested for normality using the Shapiro-Wilk test in order to determine whether to use parametric or non-parametric tests in drawing inferences. Ghasemi and Zahediasl (2012:486), “The assumption of normality needs to be checked for many statistical procedures, namely parametric tests because their validity depends on it”.

In testing for normality in SPSS, the null hypothesis that ‘the sample is normally distributed’ holds (Ghasemi and Zahediasl, 2012). At $p = 0.311 > 0.05$, the null hypothesis was accepted. This is because “if the test is significant, the distribution is non-normal” (Ghasemi and Zahediasl, 2012:487). Therefore, parametric tests were used in this study. Such tests as the *t*-test, correlation and regression were used as parametric tests in this study.

Descriptive and Inferential Analysis

Both qualitative and quantitative data were analysed using descriptive and inferential analyses. The application of the descriptive and inferential statistics in this study is summarised in Figure 4.2. In order to give descriptions of the main features of data, descriptive statistics were used. According to Govinda (2014:6), “Descriptive statistics seek to illustrate the distribution of the data by providing simple descriptions of interesting characteristics”. In this study, frequency tables, measures of central tendency and indicators of the level of dispersion were used for descriptive analysis. For example, the mean age of the respondents in the household survey was calculated to measure the central tendency of the data gathered. The socio-demographic questions were analysed using descriptive statistics.

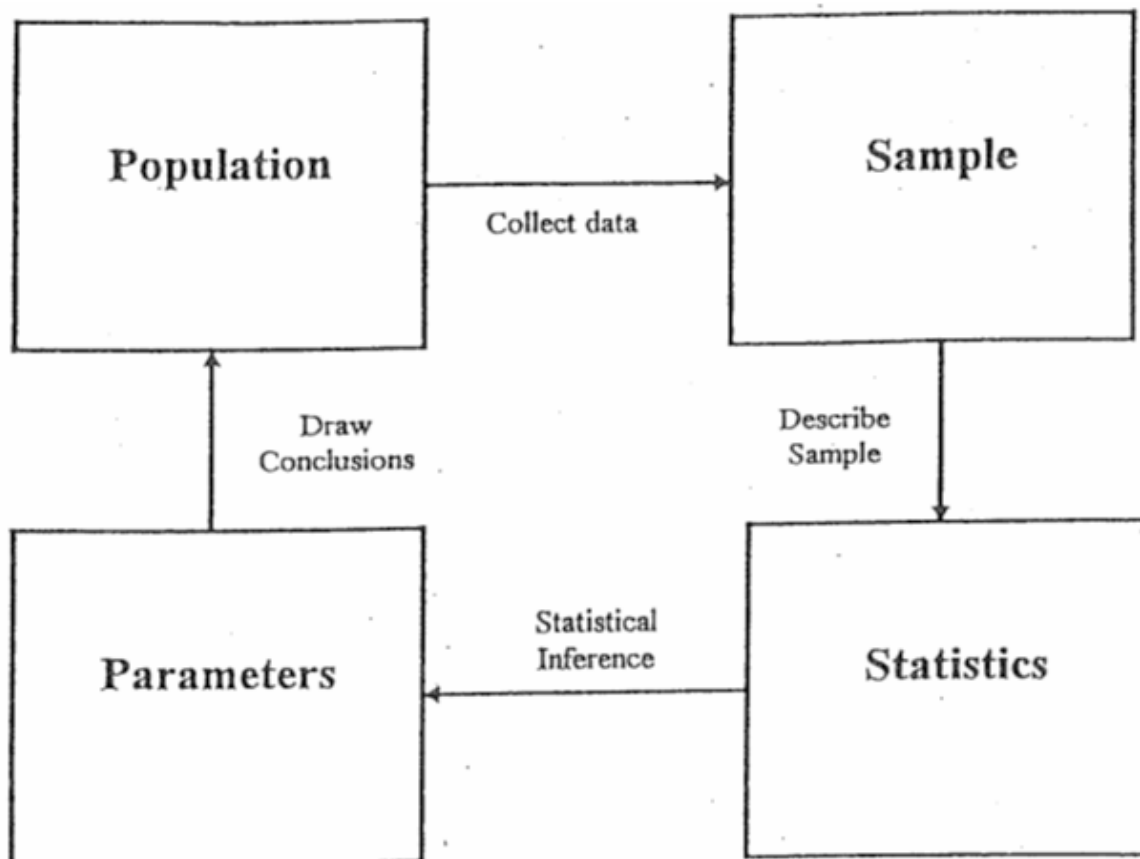


Figure 4.2: Application of descriptive and inferential statistics to the sample (Source: <https://courses.lumenlearning.com/suny-natural-resources-biometrics/chapter/chapter-1-descriptive-statistics-and-the-normal-distribution/>)

In order to draw conclusions and inferences to the population, inferential statistics were used in this study. It is argued that,

“Inferential statistics go further than descriptive analysis, allowing a researcher to make claims beyond those cases that are under investigation. Inferential statistics attempt to make predications, or inferences, about the wider population, using observations and analyses from a sample” (Govinda, 2014:8).

Multivariate probit regression models were used to analyse the relationships between the socio-demographic attributes of the household head of a farming household and both formal and informal employment in the tourism sector. Generally, a regression model is used to analyse how

a particular dependent variable is related to a combination of independent variables (Adekoya et al., 2002; Govinda, 2014). Independent variables include qualitative and quantitative variables (Adekoya et al., 2002; Çağlayan, 2012). Dummy variables which take values of 0 and 1 were used for qualitative variables in this study, where “the value 1 indicates that an observation possesses a particular characteristic while 0 represents otherwise” (Adekoya et al., 2002: 128). The independent variables in this study were the socio-demographic attributes of the household head as well as other variables such as earnings from informal employment, the sale of livestock to tourism businesses, among others summarised in Table 4.2.

Table 4.2: Description of independent variables

Variable	Short name	Description
Gender of the household head	Gender	Dummy variable: 1 = male, 0 = female
Age of the household head	Age	Years
Highest qualification obtained by the household head	Highest Qualification	Years of schooling
Household size		Continuous variable
The number of household members with cash income	HHCI	Continuous variable
The number of other members of the household employed in the tourism sector	Members employed	Continuous variable
Sale of agricultural produce to tourism businesses	SAP	Dummy variable: 1 = yes, 0 = no
Sale of livestock to tourism businesses	SL	Dummy variable: 1 = yes, 0 = no
Ownership of <i>masimo</i>	Own <i>masimo</i>	Dummy variable: 1 = yes, 0 = no
Ownership of livestock	Own livestock	Dummy variable: 1 = yes, 0 = no

The dependent variable in a probit regression model is defined as a measured quantity, such as a respondent's answer to a given question (Obrizan, 2010; Çağlayan, 2012). In this study, the dependent variable for the first model was *formal* employment in the tourism sector, which was a dummy variable (1 = yes, 0 = no). The dependent variable for the second multivariate probit regression model was *informal* employment in the tourism sector (1 = yes, 0 = no). The probit models used in the study are summarised as follows;

$$Y_i^* = \beta_i X_i + \varepsilon_i ; y_i = 1(y_i > 0) \quad (1)$$

$$Y_j^* = \beta_j X_j + \varepsilon_j ; y_j = 1(y_j > 0) \quad (2)$$

$$\begin{pmatrix} \varepsilon_i \\ \varepsilon_j \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right] \quad (3)$$

Where Y_i and Y_j are the dependent variables, X_i and X_j are vectors of explanatory or independent variables described in Table 4.2, β_i represents the corresponding coefficients of the explanatory variables, and ε is the error term customarily distributed around 0 and 1. Equation 1 is the multivariate probit regression model for formal employment, and Equation 2 is the probit model for informal employment.

Given the dichotomous nature of the dependent variables, the multivariate probit regression models were the most appropriate for this study. As argued by Adekoya et al. (2002), a “method that restricts the value of the predictor variable to 0 and 1, as the case with the probit model should be the method of choice”. Similarly, the models with qualitative dependent variables are conveniently analysed with a probit model (Williams, 2018).

In addition to the regression models, Pearson’s Chi-square (χ^2) test of independence was used to determine if there were significant relationships between various independent variables and the two dependent variables. The χ^2 tests were preferred in this study because they evaluate both dichotomous independent variables and multiple group studies (McHugh, 2013). They provide details on the significance of any observed differences as well as on the categories that account for any differences found (McHugh, 2013).

Game Theory Analysis

Natural resource use and management issues often occur within a setup of conflicting interests (Colyvan et al., 2011). In order to model natural resource use and management decision-making,

game theory was applied (see Walters, 1994; Brown, 2000; Colyvan et al., 2011; Haskell et al., 2014; Fang et al., 2015). In NIE, game theory is applied in decisions involving groups with competing and conflicting interests in collective action and common property resource management (Brown, 2000; Brousseau and Glachant, 2008; Robin and Staropoli, 2008).

This study characterised each game in two dimensions, namely; gameplay and game structure. Gameplay comprised of given scenarios, as well as the players' actions, strategies and motives (Figure 4.3). The game structure was defined by creating simulation rules for the given scenarios. The study focused on land use conflicts between tourism and agriculture in the Okavango Delta. Therefore, the focal point of the study was the sustainable resource use and management in order to promote coexistence between competing and conflicting resource users. The government, through formal institutions, plays a crucial role in influencing conflict and coexistence between contemporary land uses such as tourism and traditional land uses such as agriculture. In this study, a game simulation followed the structure in Figure 4.3. There is a relationship between the two players. The games formulated the decisions of Player 1, the subsequent decisions of Player 2 and the payoffs for the players using literature and data collected. However, the exact values of the payoffs were not calculated in this study. Furthermore, this study did not employ repeated games.

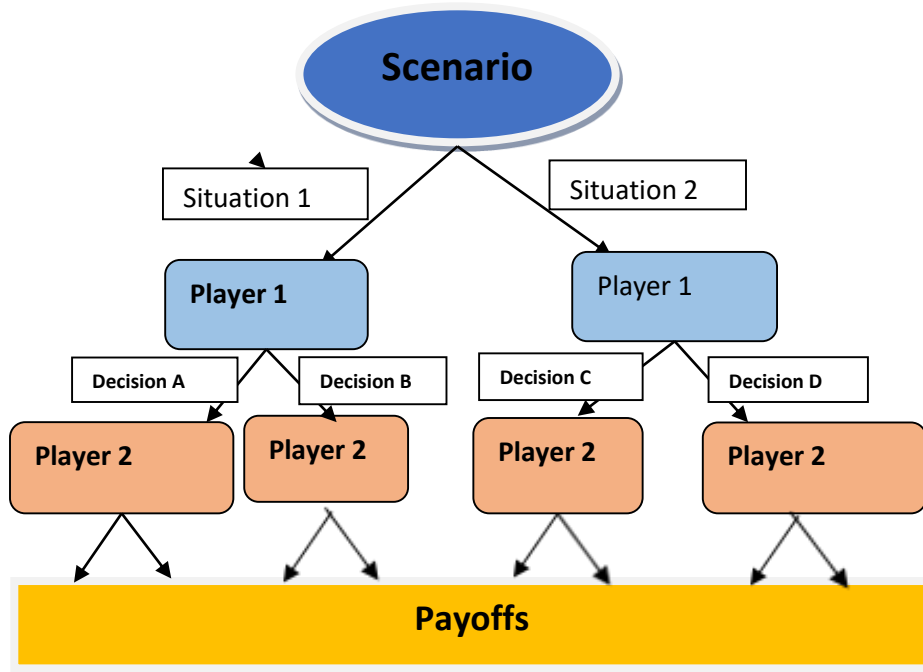


Figure 4.3: Conceptualised games played by the agents (Source: modified from Page, 2016)

Game theory was an appropriate framework for analysing issues of natural resources in the context of conflict and self-interest in this study. Some scenarios of land use in this study required non-cooperation. Where cooperation is not feasible, game theory permits researchers to determine the decision strategies that optimise natural resource use (Colyvan et al., 2011).

4.4. Chapter Summary

This chapter described the research methods that were used to address the research objectives of this thesis. It also provided the reasons for applying such methods to the current study. This study used a mixed method research approach, which is supported by volitional pragmatism. The study depended on document or literature and document analysis as well as on empirical data analysis. The steps followed in both methods were described in this chapter. The results emerging from the literature analysis are presented in Chapter 5. Similarly, the results emerging from the empirical data are presented in Chapter 6 and Chapter 7.

CHAPTER 5
AN ANALYSIS OF THE INSTITUTIONS INFLUENCING THE EXISTENCE AND THE RELATIONSHIP
BETWEEN TOURISM AND AGRICULTURE IN THE OKAVANGO DELTA

“There is no fundamental social change by being simply of individual and interpersonal actions. You have to have organizations and institutions that make a fundamental difference.” - Cornel West

5.1. Introduction

It has been argued that social and historical institutional footprints are significantly embedded into the management and utilisation of natural resources (David, 1994; Streeck and Thelen, 2005; Sandström, 2008; Heinmiller, 2009). The institutional footprints are also arguably traceable on the conservation of, and access to, natural resources. Over the years, a considerable array of multidisciplinary scholarly work on environmental and natural resource management issues such as natural resource scarcity, environmental policies and resource conflicts has emerged. The literature has increasingly redirected the focus of natural resources and environmental economists away from the neoclassical economics approach. This is, in part, due to the failure of neoclassical scholarship to offer clarity on how institutions influence agents’ choices, actions, behaviour and incentives. The focus of scholars is increasingly growing towards the analysis of natural resources management from an institutional lens discussed in Chapter 2.

In most African societies, pre-colonial institutions were mostly informal with the control over natural resources held in trust by the traditional leadership on behalf of the communities (Mulale, 2005). However, colonial and post-independence institutions shifted the control and management of natural resources from informal institutions and communities to governments and states (Mulale, 2005). As a result, the norms, traditional settings and customary laws were, in no small extent, undermined. Contemporary bureaucratic and technocratic state institutions emerged in place of traditional institutions, indicating a shift in the management of natural resources from the local authority to national authority (Dubois, 1999; Mulale, 2005). The shift

has, arguably, effected defining the relationships of agents with land, wildlife, wetlands and other natural resources.

In the global south, wetland areas are viewed as sites of importance as they allow for economic development through international tourism and agricultural production (Mbaiwa et al., 2008). The areas are often rich in natural resources. The Okavango Delta is not an exception. The Delta is endowed with the opulence of natural resources such as riverine, wildlife and water resources. However, over time, the Okavango Delta has experienced negative natural resource dynamics, increasing competition and conflict over natural resources, biodiversity loss and some cases of natural resource depletion as discussed in this thesis at Chapter 1. The Okavango Delta has also experienced a shift in natural resource access and land use management from customary to state institutions (Mbaiwa et al., 2008). There is a multiplicity of land uses in the Okavango Delta as reflected in Figure 5.1. The uses range from farming, residential, conservation and wildlife utilisation, among other classes.

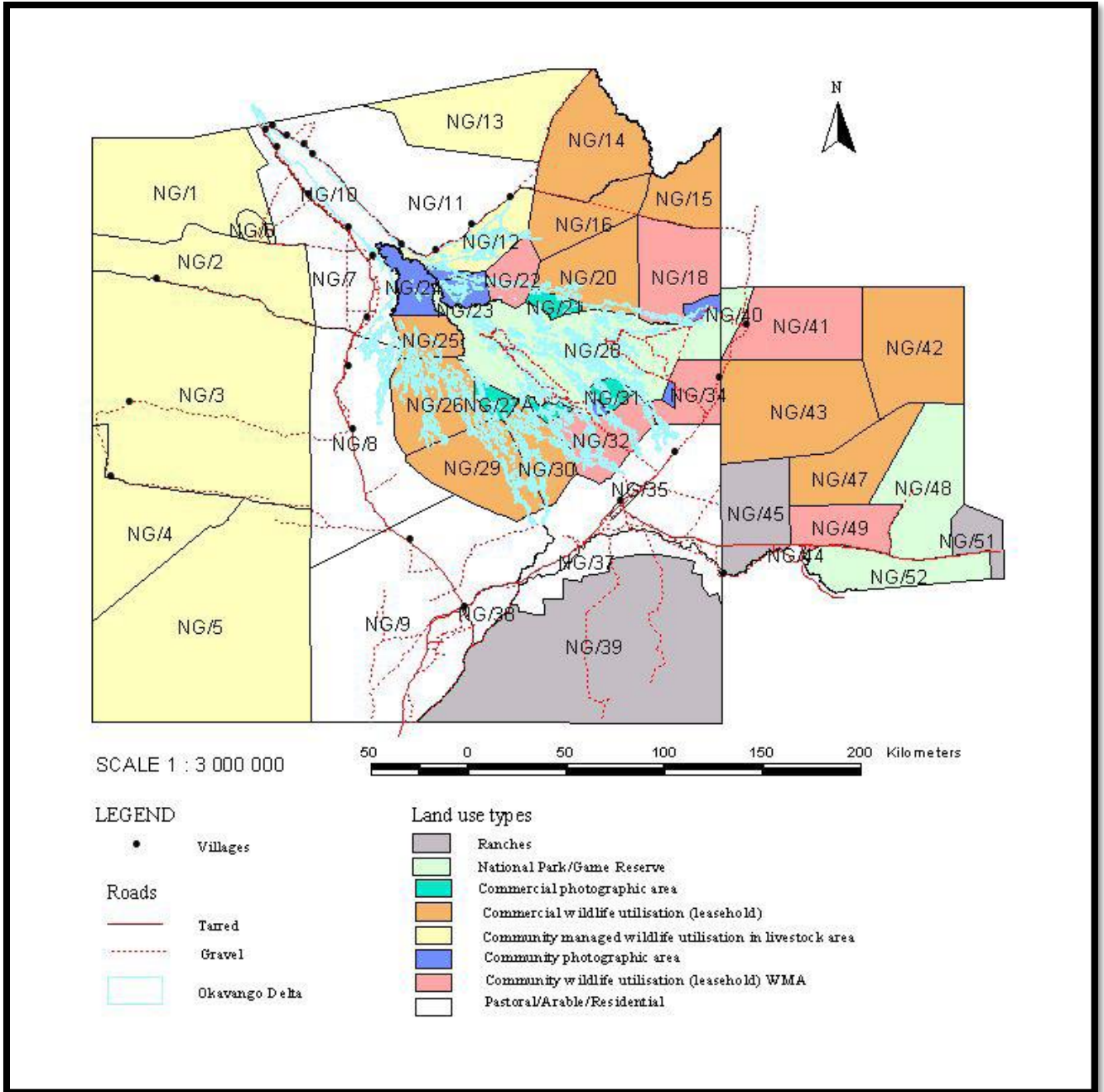


Figure 5.1: Land uses in the Okavango Delta (Source: Okavango Delta Management Plan, 2008: 46)

Currently, specific institutions and arms of the government have been mandated to regulate and define rights and access to land and other natural resources in the Okavango Delta. The institutions range from formal to informal, as well as from macro to micro levels. The natural

resources management institutions in the Okavango Delta are summarised in Figure 5.2. In this study, it is argued that presidential directives are quasi-formal institutions, with direct influence on both formal and informal institutions in place. In this context, quasi-formal institutions refer to those who have a semblance of structural overlap of informal and informal. These institutions may not be strictly classified as formal, yet they have formal legal force and validity. They resemble some of the critical features of formal institutions discussed in Chapter 2, although not entirely. For example, the 'consciously designed' element present in informal institutions is missing in the quasi-formal institution discussed in this chapter.

As argued earlier in this thesis, specifically in Chapter 2, the rigid classification of institutions into formal and informal presumes that the two classes are mutually exclusive and non-interactive. In this study, the classification does not imply that the two classes are non-interactive. It is, however, used to distinguish the consciously written rules, such as legislative enactments and regulations, from the self-imposed and self-monitored conventions and norms.

This chapter provides an analysis of the national and local institutions influencing the existence and the relationship between tourism and agriculture in Botswana broadly, and in the Okavango Delta mainly, using the document analysis described in Chapter 4. For this purpose, the Chapter will rely on the conceptual framework developed in this thesis illustrated in Figure 5.2. The Chapter will analyse the outlined land use management institutions, tourism sector institutions and agricultural sector institutions. In addition to these three formal institutions, the chapter will also analyse some conservation institutions. This is crucial as conservation institutions are crosscutting through other sectors, including tourism and agriculture. The chapter sets off by providing an in-depth discussion of land use institutions.

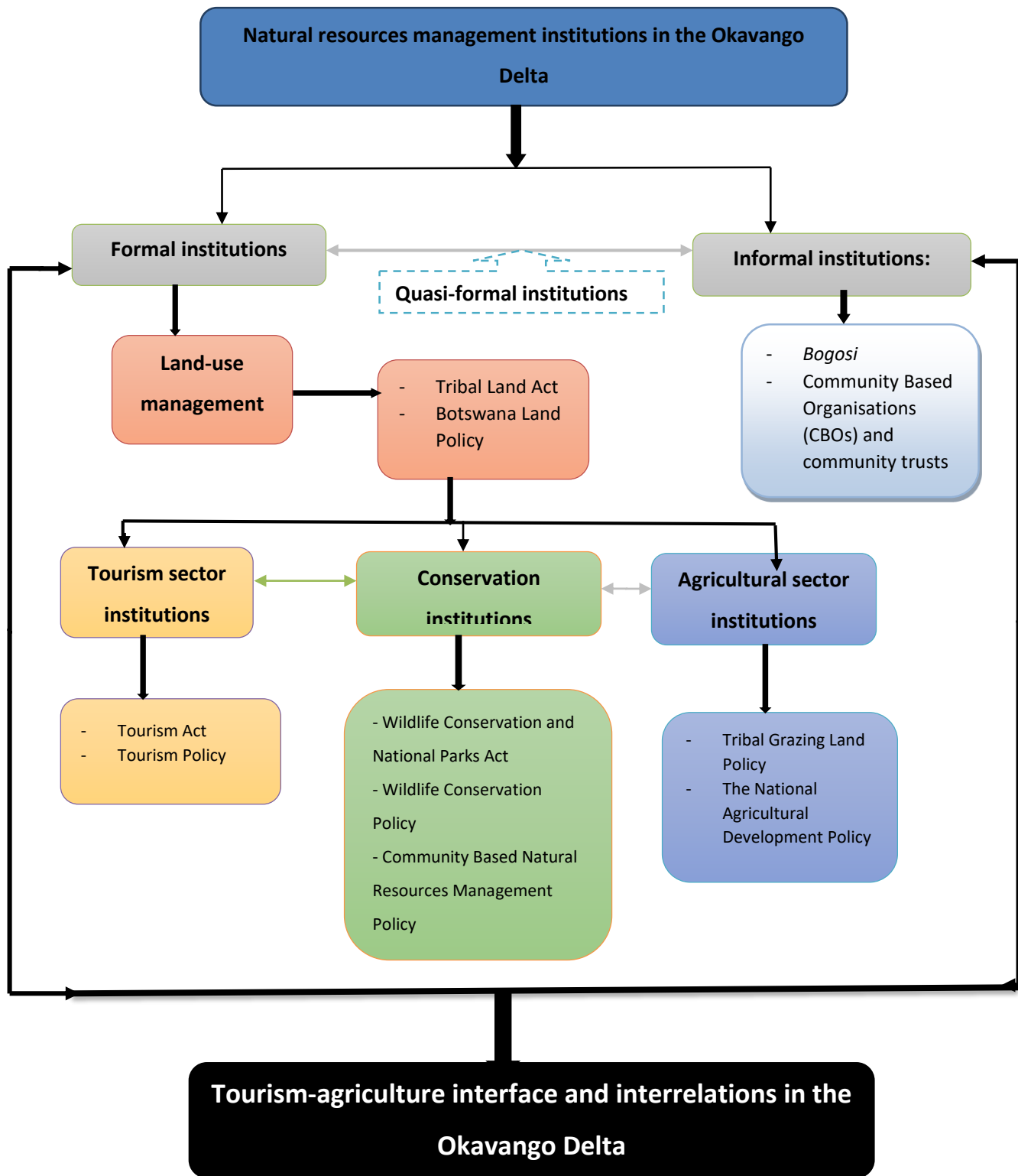


Figure 5.2: A conceptualisation of natural resources management institutions in the Okavango Delta (Source: Author’s conceptualisation)

5.2. Land Use Management Institutions

In Southern Africa, socio-economic and environmental problems such as rural poverty, biodiversity loss and unsustainable land use are closely linked to institutional vacuums and deficits in land tenure (van der Duim et al., 2015). The problems are also attributable to values attached to the land by various users (Nelson, 2010; van der Duim et al., 2015). There is an emerging convergence towards the argument that in Southern Africa broadly, and in Botswana specifically, the institutional arrangements, environment and apparatus fail to support equitable and sustainable management of natural resources including land (Adams, 2004; Mbaiwa et al., 2008; Nelson, 2010; van der Duim et al., 2015). The institutions are hence failing to harmoniously account for the multiplicity of functions of natural resources and the divergence of interests towards natural resources.

During the pre-colonial era, land in what is present-day Botswana was mostly administered through customary law (Figure 5.3). The British, who were the colonisers, introduced the three-tier system of native reserves, crown lands and freehold lands between the periods 1895 — 1966. The native reserves were land resources under the management of *dikgosi* (chiefs), while freehold land was primarily for cattle ranching and other agricultural uses (Malatsi and Finnström, 2011). Post-independence, there are three main categories of land tenure in Botswana, namely; tribal land, state land and freehold land. It has been established that in the country, 71% of the land is tribal land, 25% is classified as state land, while 4% of the land is freehold (White, 1999; the Republic of Botswana, 2015). These land proportions are significantly different to the sizes before and at independence.

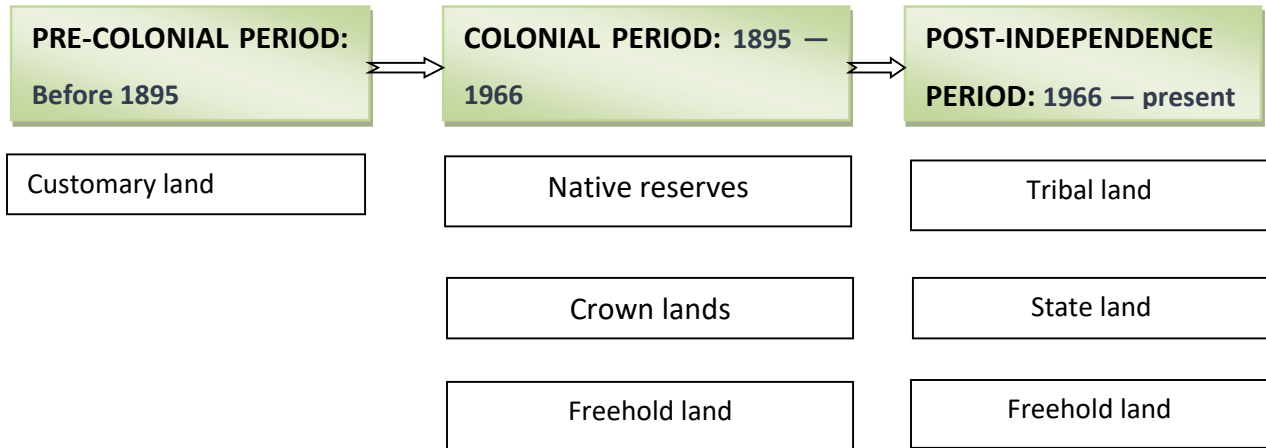


Figure 5.3: Land tenures over the years (Source: Adapted from Malatsi and Finnström, 2011)

At independence, 49% of the land was tribal land. Post-independence in 1966, Botswana developed statutory law instruments to govern the allocation, occupancy and utilisation of land resources. Most notably, the country’s statutory land laws are defined through the Constitution of Botswana, the State Land Act, the Tribal Act of 1968 and the Town and Country Planning Act.

In the Okavango Delta region, there have been several developments, such as an expansion of the tourism sector and increasing population rates, leading to augmentation of the pressure on land and other natural resources (Jansen and Madzwamuse, 2003). These have increased conflict and competition over land resources. The human-wildlife conflict is prevalent in the Okavango Delta. The conflict is attributed to land use change (SASSCAL, 2013). The Tribal Land Act defines the parameters and powers related to land use zoning and planning. The following section discusses the Act in-depth.

5.3.1. Tribal Land Act 54, 1968

In colonial Botswana, the tribal land was recognised and defined by the colonial administration as land that belongs to various tribal or ethnic groups in the country (Ng’ong’ola, 2017). It was also defined as land used and occupied for various customary and tribal customs and practices

(Ng'ong'ola, 2017). Post-independence, tribal land is defined as land that is occupied, used and administered regarding the Tribal Land Act 54, 1968. Motshegwa (2017:41) states that,

“The Botswana state created administrative institutions to compete with the old and to help modernise the administrative and political systems. Post-colonial Botswana created numerous functional-directed institutions that were independent of each other, divided into civil servants controlled by a central government minister and into elected boards controlled by the civilian leadership of the district or hereditary leaders. This witnessed a shift towards establishments of land boards in order to administer tribal land...”

The country has adopted land rules and legislation that ensure a shift from “customary rules of tenure to those sensitive to changes in population pressure, technology and economic forces” (Okoth-Ogendo, 1998: 14). At the time of the change, it was argued that the main aim of the change was to enable for the democratisation of rural land administration and to modernise rural land tenure (White, 2009). According to Jones (1993:5), there are five main characteristics of tribal land, namely:

- (a) “Customary land rights are perpetual
- (b) Land rights are inheritable
- (c) Access to land is easy because there are no fees
- (d) Tenure is secure, and
- (e) Customary land is not a commodity”.

The main objectives of the Tribal Act are to “provide for the establishment of tribal land boards; to vest tribal land in such boards; to define the powers and duties of such boards; and to provide for matters incidental thereto” (the Republic of Botswana, 1968). Through this Act, all the powers of *dikgosi* and headmen to administer and allocate land were transferred to the land board. The Act permits the board to acquire, govern, repossess, reclassify and rezone the tribal land.

The land boards are also empowered to rezone agricultural land for commercial, residential, and industrial uses. Section 13(1) of the Tribal Land Act bestows the power and responsibility of

granting and cancellation of the right to use land on the land boards. More specifically, the Section states that,

“(1) All the powers previously vested in a Chief and a subordinate land authority under customary law in relation to land, including-

- (a) the granting of rights to use any land;
- (b) the cancellation of the grant of any rights to use any land;
- (c) the imposition of restrictions on the use of tribal land;
- (d) authorising any change of user of tribal land; or
- (e) authorizing any transfer of tribal land,

shall vest in and be performed by a land board acting in accordance with powers conferred on it by or under this Act” (the Republic of Botswana, 1968).

In the inaugural land boards, the composition of members included the chief or his deputy, a representative appointed by the chief, two district council appointees and two central government representatives. The authority over land use planning and management is performed by the land board. Thus, the land board serves as a primary agency for the implementation of the Tribal Land Act.

In the Okavango Delta region, the land board responsible for granting, variation and cancellation of land rights is the Tawana Land Board, within the Batawana Tribal Territory. According to the Act, the modern or prevailing composition of the land board is as the follows,

- (a) 7 members, elected and appointed in accordance with the procedure described in regulation 2 of the Tribal Land Regulations, who may hold office for 4 years and be eligible for re-election and re-appointment;
- (b) 7 members, appointed by the Minister of Local Government, Lands and Housing, which members may hold office for 3 years and be eligible for re-appointment;
- (c) any member, appointed to replace a member referred to in paragraphs (a) and (b) whose office has become vacant, who may hold office for the unexpired period of the original incumbent's term, and be eligible for re-election and re-appointment;
- (d) 1 member representing the Ministry of Agriculture; and

(e) 1 member representing the Ministry of Commerce and Industry (the Republic of Botswana, 2004).

The Batawana Tribal Territory has one mainland board and six subordinate land boards. The subordinate land boards are created under Section 19 of the Act. On the one hand, the Tawana Land Board, as the mainland board, is responsible for allocating land under both customary and common law for arable, residential and other purposes, such as tourism. The majority of tourism activities in the Okavango region are carried out on tribal land. In addition to the duties of the mainland board as outlined in Section 13(1), the other duty is to hear and adjudicate on appeals against decisions of subordinate land boards regarding Section 13(2) (the Republic of Botswana, 2004). On the other hand, the subordinate land boards are responsible for the allocation of land for customary uses and for receiving, investigating and making recommendations to the Tawana Land Board in respect of common law (the Republic of Botswana, 2004).

One of the notable features of the Tribal Land Act is that it permits for the open-access system to natural resources for subsistence purposes in the country. In the Okavango Delta, subsistence open-access system is one of the four main prevalent types of natural resource regimes (Kgathi, 2002). The residents and all other users are not restricted to access and utilise the natural resources for subsistence purposes. The other notable aspect of the Act is that it introduces the common leases. The leases permit individuals or groups, whether or not they are tribesmen, land for commercial uses such as wildlife-based tourism and cattle ranching (Jones, 1993; White, 2009). Citizens are eligible to receive common law leases and customary land grants. The latter may, however, be converted to common law lease. In addition, "Some tribal land is used and managed by the state as game reserves and forest reserves, with the consent of the land authority" (White, 2009: 2).

In 1991, a Presidential Commission was tasked with the role of reviewing the Tribal Land Act in response to emerging challenges imposed by the growth and transition in peri-urban areas. Through the Commission, it was established that there were emergent land use conflicts. There

was a “contentious issue of compensation for compulsory acquisition of land because of the failure of the land boards to pay adequate compensation of arable land was a root cause of some of the land management problems in the peri-urban areas” (Adams et al., 2003: 61). The Tribal Land (Amendment) Act of 1993 addressed some of the issues related to low compensation by stating that the landowners should receive compensation commensurate with the value of the land determined by market forces.

In 2002, the Tribal Land Act and the overall Land Policy in Botswana were reviewed. One of the notable recommendations was the proposal to review to improve land management and development in such a way that protects the rights of the poor. It called for the subletting of arable land. It also proposed that farmers or owners of arable land should be allowed to pool their resources and form joint cropping and farming agreements.

In an attempt to respond to the changing dynamics related to the tribal land use and management, the government has amended the Tribal Land Act twenty-six(26) times between 1968 and 2008 (Ntummy, 2014). In 2017, a Tribal Land Bill was passed to parliament. The then Minister of Land Management, Water and Sanitation Services, Prince Maele, was quoted saying that,

“The country has experienced social and economic growth which necessitates a review of land-related laws such as Tribal Land Act to address these issues, unlock economic value of tribal land and facilitate the ease of doing business” (Bothoko, 2017).

One of the proposed changes in the Bill was to make the registration of customary land rights voluntary. Furthermore, the Bill states that,

“All persons who are already in occupation of land granted to them under the repealed Act must apply, within six months of the commencement of the new Tribal Land Act, to have their land registered by the Registrar of Deeds” (Bothoko, 2017).

The practicalities of voluntary registration of customary land rights are yet to be tested. The Bill is yet to be assented by the President. Therefore it has not commenced as law. The following subsection discusses both the Tribal Grazing Land Policy of 1975 and the new Land Policy.

5.3.2. The Tribal Grazing Land Policy of 1975 and Botswana Land Policy of 2015

The concerns about overgrazing and overall overutilisation of land resources are not new in Botswana. In the 1970s, it was estimated that the ratio of cattle to the human population was four to one (Frimpong, 1994). The number of cattle far exceeded the human population. This created a myriad of concerns such as issues on the health of the environment and the status of natural resources. In addition, this resulted in a pressing need to sink boreholes to meet the cattle needs (Malope, 1999).

Consequently, “an unfortunate outcome was that some form of land-grabbing emerged” (Frimpong, 1994: 2). Frimpong (1994: 3) captures the first President of Botswana’s concerns as follows,

[The] time has come to tackle a subject about which there has been a lot of talk but no action - the better use and development of our land. As our human population and the numbers of our cattle and other livestock increase there is a growing danger that grazing will be destroyed by uncontrolled use of communal grazing areas by ever-growing numbers of animals. Once grazing has been destroyed, it is extremely difficult to get grass re-established. And under our communal grazing system it is in no one individual’s interest to limit the number of his animals. If one man takes his cattle off, someone else moves his own cattle in. Unless livestock numbers are somehow tied to specific grazing areas no one has an incentive to control grazing ...We are faced with a situation which demands action.

In order to address the concerns of communal grazing and increasing herd of cattle, the Tribal Grazing Land Policy was ratified. The central objectives of the Policy, as outlined in Paragraph 20 (the Republic of Botswana, 1975) are to:

- i. Stop overgrazing and degradation of the range,
- ii. Promote greater equality of incomes in rural areas, and

- iii. Allow growth and commercialisation of the livestock industry on a sustained basis.

The policy also aims at protecting "the interests of those who own only a few cattle or none at all" (the Republic of Botswana, 1975:6) and to ensure that "land development helps the poor and does not make them worse off" (Republic of Botswana 1975:2). Therefore, the zoning of land is aimed to safeguard the poor and small-scale farmers.

After the ratification of the Policy, the tribal grazing lands were zoned into three land categories, namely; communal grazing areas, commercial grazing areas and reserved grazing areas (the Republic of Botswana, 1975 and 1988). The communal grazing lands, albeit the concerns of overgrazing, were not affected by the Policy. Small-scale pastoralists were allowed to graze their cattle freely on communal lands. According to Frimpong (1994:7), "It was envisaged that with the large herds out of the communal areas and confined to the ranches overgrazing would not occur in the communal areas". However, overgrazing and other land management issues persisted. Revisions of land policies spanned for decades post the Tribal Grazing Land Policy of 1975. The most recent revised policy was adopted three years ago.

The most recent Botswana's Land Policy was adopted on the 16th of July 2015 (the Republic of Botswana, 2015). It was formulated in response to the array of land management and administration challenges. The Policy acknowledges that for Botswana, the land has multiple and diverse values as it is at the core of the people's identity. Therefore, the Policy seeks to address, replace and embrace several other land-related policies formulated to address land management challenges in the past.

The overall goal of the Policy is to "protect and promote land rights of all landholders and promote sustainable human settlements" (Republic of Botswana 2015:9). In addition to this goal, the Policy also seeks to:

- i. Protect and promote the land rights of all landholders;
- ii. Ensure that all eligible citizens have the opportunity to access and use the land;

- iii. Encourage citizens' retention of rights to land;
- iv. Promote equity in access to land and natural resources;
- v. Improve land management system on customary, state land and freehold land to make it predictable, transparent, reliable, consistent and timeous;
- vi. Establish an up-to-date, efficient and accessible land information centre;
- vii. Promote compatible and best use of land, and other land resources" (the Republic of Botswana, 2015: 9).

Paragraph 52 of the Policy states that the three-tier land classification system of tribal land, state land and freehold land will be retained as it has "served the country well save for a few shortcomings in administrative processes (the Republic of Botswana, 2015). Part IV of the Policy covers issues of land access and land rights. The following subsections briefly discuss land access for communal grazing and arable land.

5.3.2.1. Communal grazing

The Policy acknowledges that communal grazing lands are overgrazed because of the non-exclusivity of rights (the Republic of Botswana, 2015). However, it also recognises that the majority of farmers still depend on communal grazing. Therefore, in order to avoid degradation and overgrazing in the midst of the dependence of Botswana on communal grazing, the Policy proposes that "effective range management practices will be implemented to "discourage the practice of dual grazing rights... Acquisition of an exclusive farm or ranch, through whatever means, will exclude the holder of the farm or ranch from competing for access to communal grazing land elsewhere in the country" (the Republic of Botswana, 2015:14). This contradicts with the 'non-exclusivity of rights' acknowledged by the Policy. It, therefore, triggers some questions on the practicality of excluding a specific set of farmers from an open-access and communal land.

5.3.2.2. Arable land

The challenge of arable land supply is twofold in Botswana. Firstly, arable land is in short supply (Isaacs and Manatsha, 2016; Ng'ong'ola, 2017). Secondly, the land is “found only in select localities” (Ng'ong'ola, 2017:118). Despite these challenges, Botswana’s Land Policy emphasises that arable farming is one of the critical sources of livelihoods and employment for many Botswana, especially those in rural areas (the Republic of Botswana, 2015). This message is similar to the one in the 1985 Commission on Land Tenure, wherein it was stated that “many people in rural areas have no other means of earning a living except from the land” (the Republic of Botswana, 1985:14).

In order to address the issue of arable land shortage and to ensure ‘effective’ and ‘efficient’ use of arable land, the Policy proposes a “limit of one agricultural holding allocation per eligible citizen” (Republic of Botswana, 2015: 13). Notwithstanding the cap of one ploughing field per citizen, the allocation authorities have the discretion to allocate additional fields depending on the availability of the land and the degree of utilisation of the allocated field. Moreover, “additional plots may be acquired through the private market, inheritance or other [legal channels]” (Republic of Botswana, 2015: 13).

Through Paragraph 61(i) of the Policy, the government commits to protect *Masimo* (ploughing fields) on fertile land. However, “change of land use will not be allowed” (Republic of Botswana, 2015: 13) after zoning. The implications of this clause and others discussed above will be discussed in the following section. The following section analyses the two land use management institutions using the theoretical framework of the study.

5.3.3. Land use management institutions in the NIE framework

In the past half a century, Botswana has revised land use management institutions numerous times in order to align and realign them to the changing landscape and land use dynamics. In New Institutional Economics (NIE), a reform of public institutions is often viewed as the opening of “rare windows of opportunity” (Williamson, 2000:598). Land use management institutions discussed in this chapter are level 2 institutions discussed in Chapter 2. Level 2 institutions are

often “constrained by the shadow of the past” (Williamson, 2000:598). Therefore, the success, or lack thereof, of level 2 institutions is, to some extent, dependent on the pre-existing norms, ethics, traditions and customs.

Land use management institutions, as level 2 institutions, are responsible for serving as the foundation for legislature design for the definition of access rights and degree of power over land resources in Botswana. The analysis is biased in favour of the applicability of land use management institutions in the Okavango Delta context. The following subsections discuss the land use institutions within the NIE framework.

5.3.3.1. Rights and equitable access

In pre-colonial Botswana, the *kgotla* (in this context, convening as a customary court) and *bogosi* (chieftainship) played a central role in defining, enforcing and solving issues related to land within the tribal boundaries. During the time, communal and private property rights coexisted (Seidler, 2009). It is argued that land was an abundant resource. Therefore land ownership was mostly communal (Schapera 1955; Seidler, 2009). Unoccupied and unutilised land resources were allocated to tribesmen by the *kgosi* for cultivation, grazing and settlement, among other uses. After utilisation, private property rights were assumed over the land (Schapera, 1955; Seidler, 2009). Property rights were also used over livestock (Schapera 1955; Seidler, 2009). Arguably, the communal land rights worked at the time due to two main reasons. Firstly, the land was an abundant resource with little value. Secondly, due to the abundance of land, there was no, or at least minimal, competition over land resources. As argued in the first chapter of this thesis, this was a period of pre-industrialisation. Therefore, land resources were predominately used for agricultural purposes. Customary institutions served as level 1 institutions.

In the customary land tenure system, the “right to avail... was automatically shared by all people belonging to a particular tribe... This right did not depend on the discretion of the chief. He was required to provide residential, arable and grazing land for all his subjects” (Adams et al., 2003: 57). Through customary land law, the property rights of users were secured. The unwritten codes,

norms and conversions arguably served sufficiently in defining the rights of individuals to use land resources. These conform to the definition of property rights in NIE. According to Marinescu (2012: 256), property rights are “all laws, rules, social customs, and organisations that generate incentives for human action”. They are also defined as “social customs that define the range of privileges granted to individuals of specific natural resources” (Madigele, 2015: 21). Property rights are enforceable through both formal and informal institutional arrangements.

Post-independence, land use management institutions are aligned with the three-tier land tenure system. Property rights and access rights were defined through land use management institutions discussed above. The land use management institutions provide an array of land rights. These include:

- i. *the right of avail* - to be allocated land by one’s membership of a tribe (now a citizen);
- ii. *rights to occupy* a home or homestead,
- iii. *rights to use* the land for crops, for grazing; to make permanent improvements; to be buried on one’s ancestral land;
- iv. *rights to have access* to gathering fuel, poles, wild fruit, thatching grass, etc.; to hunt and exploit natural resources, and to use the land for business or commercial purposes;
- v. *rights of way* for various purposes, including servitudes for infrastructure;
- vi. *rights to transact*, give, mortgage, lease, rent and bequeath areas of exclusive use;
- vii. *rights to exclude* others from the above-listed rights, and, linked to the above,
- viii. *rights to the enforcement* of legal and administrative provisions in order to protect the rights of the holder;
- ix. *rights to compensation* for compulsory acquisition by the land board or state (the Republic of Botswana, 2002: 1; Adams et al., 2003: 56).

The rights listed above are rooted in both the customary law and the country’s targets to provide land for all necessary uses for all citizens. The scope of institutions and their corresponding arrangements has been broadened to not only serve Batawana and other tribal groups in the Okavango region but to serve all citizens equally. Through the enactment of the Tribal Land Act, customary land rights are administered and managed in trust on behalf of the nation by land

boards. It is interesting to note that in terms Part IV of the Tribal Land Act with specific reference to Section 24, land boards also manage the conversion of the customary land right to common law land tenure. Furthermore, Paragraph 58(i) of the Land Policy of 2015 reiterates the right of “every Motswana” and their eligibility for “allocation of [land] at an area of their choice within the country”. Two main challenges arise from this subsection. First, the Policy fails to acknowledge that land is a finite resource. In some areas in Botswana and the Okavango Delta, conflicts are persistent because “the demand for [land] in some areas far outstrips supply” (Ng’ong’ola, 2017: 117). Second, the Policy fails to propose or clearly state what land boards as allocating authorities should do in the occurrence of demand exceeding supply in affected areas.

In addition to the traditional land use categories, the Tawana Land Board and its six subordinate land boards are sanctioned to administer the customary land rights for land resources allocated for commercial, industrial, civic and commercial agricultural uses by the Tribal Land Act. Contemporarily, the overarching role of the Tawana Land Board and its subordinate land boards is to ensure that some, if not all, of the rights listed above, are applied equally to all of the citizens of Botswana. However, the voluntary registration requirement for tribal land by the Tribal Land Act, the Tribal Land Bill and the country’s Land Policy of 2015 presents insecure land rights in tribal areas.

Despite the transition and shift of duties from chiefs to land boards, there remains some pockets of lands in tribal territories which are not registered with land boards by their ‘owners’ and occupiers. It is thus arguable that with the tribal land tenure, which is supposed to be governed by the Tribal Land Act, there is a residual system of purely customary land rights management. Customary law exclusively governs the enjoyment and alienation of such customary land rights. The other implication of non-registration of customary land rights is that the whole process of land allocation is undermined. This, consequently, created a myriad of multi-layered problems summarised in Table 5.1. While Botswana is one of the first few countries in Africa to “legally respect customary interests as registrable property” (Wily, 2011: 748), inequitable land distribution and land conflicts, among other problems, are entrenched.

Table 5.1: Land problems and their associated causes

Problem	Some of the causes
Inequitable land distribution	<ul style="list-style-type: none">- Allocation of many plots to one person- Old allocations have not been recorded by land boards- Difficulty in accessing information on property owners
Many land conflicts	<ul style="list-style-type: none">- Land allocations are done without mapping in the tribal land area- Unclear which land has been allocated in the tribal land- Procedures and information not transparent
Customary grants cannot be used as collateral	<ul style="list-style-type: none">- Lack of information for reporting and decision-making
Customary land rights not registered	<ul style="list-style-type: none">- The lengthy process of registry- High costs of the registry

(Source: Adapted from Malatsi and Finnström, 2011)

According to new institutional economists, the changing policies, laws and other institutions, reflect the process of economic change or “shifts in an institutional regime” (Nkhata et al., 2017: 100). This process is defined by both redefining the structure, scope and nature of social provisioning, as well as by redirecting the distribution of economic advantages (Bromley, 2008a; Commons, 2009; Crépin et al., 2012). While in NIE it is argued that formal or public institutions should be made more equitable by introducing “a sharp break from established procedures” (Williamson, 2000: 598), following from the arguments above, the opposite is exact for Botswana broadly, and the Batawana Tribal Territory specifically. There is arguably a manifestation of the preservation of the status quo or a status quo paralysis.

In NIE, preservation of status quo prevails when the level 1 institutions such as the customary land tenure system subjugate the contemporary systems, such as property rights, to a point

where contemporary systems are catalysts of the problem to be corrected (Bromley, 2009). In the Okavango Delta region, the increasing pressure on land resources and the conflicting land uses necessitate a thorough understanding of the linkages between the resource users and their traditional land tenure system. The agents have more accurate information of the past compared to the information about the future (Galiani and Sened, 2014). As a result, the agents often tend to stay persistently loyal to the status quo (Galiani and Sened, 2014). “Persistence is a function of the period over which such shifts take place” (Nkatha et al., 2017:100). North (1991 and 2005) notes that informal or traditional institutions tend to persist through change for long periods, often for centuries or generations. Therefore, they shape and influence long-term economic performance.

The contemporary land use management institutions should, therefore, find a way of attaining a suitable balance between ensuring equitable land access with minimal conflicts for overall economic growth without undermining traditional land arrangements for rural livelihoods. As it has been argued in Chapter 2 of this thesis, effective institutions are complementary or accommodating, rather than conflicting and substitutive. Malatsi and Finnström (2011) assert that,

“While coming up with improvements, one should also take account of cultural practices of the country concerned, as culture and land management practices of a country are closely related. This does not, however, mean that cultural values that are no longer relevant should be retained, as land is a finite resource, which has to be utilised by an ever-increasing population and its diverse aspirations.”

5.3.3.2. Land use management institutions and path dependency

It has been argued that Botswana’s land use management institutions are more successful and “better ... than most of its African counterparts” (Seidler, 2010: 2). Three main reasons in support of the assertions above are provided, that is,

- a) Pre-colonial Tswana culture comprised a number of informal institutions which were useful for creating a modern state. Most strikingly, the chiefs’ powers were restrained and the political elite pursued strong economic interests.

- b) “Light” colonial rule by the British largely left Tswana institutions in place.
- c) Tswana institutions were successfully merged with modern institutions many of which modelled on European examples (Seidler, 2010: 2).

These reasons, to some degree, are in congruence with the definition of path dependence in NIE. The earlier argument on the preservation of the status quo is a manifestation of path dependence. According to Torfing (2009: 71), “path dependence is associated with the surge of new institutionalism that tends to define path dependence as a situation where the present policy choice is constrained or shaped by institutional paths that result from choices made in the past.” It explains the shifts in an institutional regime that are dependent on the legacies of institutions of the past.

During the colonial period, the British employed limited control over the then Bechuanaland Protectorate. According to Motshegwa (2017: 39), the British used “indirect rule that did not exert too much political influence and that did not involve institution building”. Equally, the “pre-colonial tribal power structures remained mainly untouched” (Seidler, 2011: 55). Therefore, the emerging land use challenges were addressed with minimal alteration of the traditional institutions. This argument is borne from the fact that when the British introduced the three-tier land tenure system in 1885, the role of *bogosi* and *dikgosi* in land allocation and management was retained. As stated by Motshegwa (2017: 41), “the new colonial administration allowed the chiefs to keep their institutional powers over their people including the fused judicial, legislative and executive functions. The provision of public services was governed by the hierarchy of chiefs, sub-chiefs or the headmen in the area”. The act of retaining *dikgosi* and maintaining good relations with them was arguably a symbiotic strategy in favour of both the British and some of *dikgosi*. This is because the *kgotla* and *dikgosi* remained a very key communication channel between the communities and the colonisers.

The native land tier “was left in the custodian of *dikgosi* until 1970 when the land boards were created” (Isaac and Manatsha, 2016: 384). Similarly, when the Tribal Land Act was enacted in

1968, the role of the *kgosi*, although minimised, was recognised. Despite the transfer of the tribal land allocation duties from *dikgosi* to land boards and their respective subordinates, the Tribal Land Act of 1968 provided for the inclusion of the chief or his deputy in the boards. Furthermore, the three-tier land tenure system that acknowledged 'native' or tribal land is maintained in current land use institutions. The residuals, footprints and shadows of the past had, and still have, an effect on the subsequent institutions, institutional arrangements and institutional apparatus. The critical elements of customary land tenure system were retained post-colonialism and post-independence, despite the dynamic nature of land use management issues. Kalabamu (2000: 305) notes that in Botswana,

“In the course of transmission over time, as well as through experiments, right workable elements of the tenure system are retained and poor ones dropped to suit new socio-geopolitical and climatic conditions.”

5.3.3.3. Transaction costs and land use management institutions

As indicated in Table 5.1, one of the main problems associated with non-registration of customary land rights propounded by Malatsi and Finnström (2011) is that customary land rights not registered due to two main reasons. First, the process of registering is lengthy. Second, the costs of registering are high and prohibitive for an average Motswana. The process of tribal land registration is preceded by engaging land surveyors to prepare cadastral diagrams over and above the administrative fees payable to the land board. NIE is concerned about maximising natural resource use at the least transaction cost. According to North (1990), transaction costs are the costs incurred when enforcing, maintaining, establishing, policing and exchanging property rights.

In a neoclassical economics setting, using the theory of demand, an increase in competition and scarcity over natural resources, such as land, triggers an increase in prices. Similarly, the NIE applies the price and demand theories to explain high transaction costs in the event of an institutional change. According to North (1990: 84), “fundamental changes in relative prices are the most important source of [institutional] change... moreover, the only other source of such

change is a change in tastes". Consequently, during the institutional change process, there are often "short-run variations in relative prices that create, at some point in time, the incentives to restructure human organisations" (Wallis, 2014: 34). Marie (2015: 52) argues that,

"Transaction costs, in effect, are another category of relative prices, the price paid to facilitate the exchange of rights. Transaction costs can drive institutional change by inducing the human agency deliberately to change institutions to reduce them, but transaction costs can also inhibit institutional change when they are so large that the net payoff of changing the institution becomes negative..."

In the current scenario, the transaction costs incurred by individual agents in enforcing institutional change are inhibitive. Arguably, the agents who are still not registering their customary land rights deem the net payoff of the process either too low or negative. The agents are unwilling, offsetting or postponing to endure the transaction cost burden of the voluntary registration aspect of public policy. This argument reflects the 'testable' bidirectional causal relationship between "changes in relative prices, [and] the ideas and ideologies that form people's perceptions" (North, 1990: 86). Therefore, transaction costs incurred by agents in an institutional change or shift play an essential role in determining the direction and pace of the change. High transaction costs disincentivise the agents to adopt, and adapt to, the institutional change readily.

This study acknowledges that the transaction costs are necessary. Therefore, policies and other institutional apparatus should account for them. However, the institutions should carry a dual goal of maximising the net benefits and minimising the costs. Preferably, the former should supersede the latter. In the process of the abatement costs incurred by the government in initiating and processing institutional changes, the burdensome nature of the institutional, regulatory regime on the agents should be minimised and possibly eliminated.

5.3.3.4. Open-access and the tragedy of the commons

In the Okavango Delta region, as in other parts of the country, natural resources on the tribal land are considered open-access resources. The resources such as grazing land and water on tribal land are available to agents for domestic and subsistence purposes by customary law. Every citizen is, therefore, within their rights to draw water for their livestock from an open-access source. According to the Land Policy, some portion of tribal land will continue being used for communal grazing. However, the increasing pressure on natural resources renders the open-access property rights potentially unsustainable. Arntzen (2005: 10) notes that in the Okavango Delta, “concerns have been expressed about the depletion of some veld products, overgrazing and land degradation and the environmental impacts of the growing number of tourists”. If access is left open in the face of these concerns, the ‘tragedy of the commons’ may ensue. This is defined as the overutilisation of natural resources (Hardin, 1968) to maximise resource extraction for short-term gain. Ironically, it has been argued that even though Hardin’s thesis of ‘tragedy of the commons’ informed the earlier policy, the Tribal Grazing Land Policy of 1975, overgrazing and concerns on the growing herd on the environment persisted (Isaac and Manatsha, 2016). Accordingly, it has been stated that,

“Hardin’s thesis gained prominence in the 1970s and 1980s. It significantly informed policy intervention in rangeland management in many developing countries. In Botswana, presidents Seretse Khama and Ketumile Masire strongly believed in Hardin’s thesis ... They fully endorsed the Tribal Grazing Land Policy ... in 1975 ... [but it] led to the overgrazing and degradation of communal lands” (Isaac and Manatsha, 2016: 390).

The Policy of 2015 provides that the ‘tragedy of the commons’ could be avoided through “effective range management practices will be implemented to discourage the practice of dual grazing rights” (Paragraph 61 (v)). Through this proposed strategy, individuals who have acquired private property rights over a farm or a ranch will be excluded from using, and competing for, open-access or communal grazing land. Despite this condition of exclusion, it has been established through empirical data that livestock production in communal grazing areas is often higher than productivity in leased private grazing lands (see Behnke et al., 1993; Ministry of Agriculture, 1993; Sapignoli and Hitchcock, 2013). What then is the incentive of acquiring private property grazing land rights, and how will the exclusion of private rights holders be enforced? The

land use management institutions discussed in this chapter do not fully address these questions and concerns. The Land Policy partially addresses these concerns by proposing that communal grazing areas will be fenced “subject to feasibility studies” (Paragraph 62 (i)). Given the proposal to fence and possibly exclude agents with private property rights from accessing communal grazing land, it has been assumed that in future, “open and readily accessible communal grazing areas will cease to exist, except in [tribal] areas where fencing of the commons is regarded as not feasible” (Ng’ong’ola, 2017: 119).

In an attempt to analyse Hardin’s theory of ‘tragedy of the commons’, an n -person communal land dilemma is conceptualised in this study (Table 5.2). It follows, therefore, that n -farmers in an open-access communal grazing land are faced with a game similar to prisoner’s dilemma. There are two strategies; cooperating and not cooperating. The farmers with private property rights cooperate by moving their herd from a communal space to avoid dual grazing. However, the incentives for using the communal grazing land are higher than the incentives of gaining exclusive grazing rights. Therefore, the dominant strategy is not cooperating. When all n -farmers decide not to cooperate, then problems of overstocking, overgrazing and land degradation and the concerns of denudation and desertification will persist. The outcomes of such a strategy are worse than when all the n -farmers cooperate ($(-f, -f) < (-c, -c)$).

Table 5.2: Conceptualisation of the payoff matrix in open-access communal grazing

		Farmer 2	
		Cooperate	Do not cooperate
Farmer 1	Cooperate	$(-c, -c)^*$ The second best outcome for both farmers	$(-j, 0)$ The best result for Farmer 2
	Do not cooperate	$(0, -j)$ Best result for Farmer 1	$(-f, -f)$ The third best outcome for both farmers

*Where $0 < a$, but $a < b$, $b < c$, $c < d \dots j < k$. Therefore, $0 < j$
 (Source: Author’s conceptualisation)

As illustrated in Table 5.2, a respective farmer’s decision to not cooperate by moving their herd from a communal space yields the highest payoff. Therefore, the ‘best’ strategy for a farmer with exclusive land rights is to adopt a dual grazing system in order to promote their utility, that is, either $(-j, 0)$ or $(0, -j)$. This will persist for as long as there are either no consequences for farmers with exclusive grazing land rights to use communal grazing land or mechanisms of excluding farmers with exclusive or private grazing land rights from using communal grazing land.

The customary law principles of the Tribal Land Act and its related policies, such as the Land Policy of 2015, implies that agents with private property rights must allow other community members access when there is a need for such natural resources such as water (Hitchcock, 2002; Adams et al. 2003). This requirement creates some degree of temporal variability to the institutions in place. The temporal variability of institutions creates some room for uncertainty in resource use and governance processes. Although Nkhata et al. (2017: 101) posit that “property rights regimes [should] be conceived to be flexible and fluid, shifting by season and year”, they also admit that in such instance of flexibility and fluidity, “such temporal variability can lead to institutional ‘fuzziness’ which can create problems for collective action and governance in the provision of

ecosystem services". Therefore, there is a need to promote clarity and certainty in order to promote the incentive-creation trait of property rights.

Having discussed the land use institutions in this section, the following sections discuss other institutions that affect the interface between agriculture and tourism in the Okavango Delta. Section 5.4 below discusses agricultural sector institutions.

5.4. Agricultural sector institutions

Following the promulgation of the Tribal Grazing Land Policy of 1975, several efforts were made by the government to increase livestock productivity in the communal area while protecting the integrity of the environment and avoiding the 'tragedy of the commons'. Some of the strategic efforts made include the Group Development Programme, the Communal Grazing Cells and the Services to Livestock Owners in Communal Areas (SLOCA) (Keijsper, 1993; Molebatsi, 2002; the Republic of Botswana, 2011). The programmes aimed at providing support for infrastructure needed to increase livestock productivity through group formations. However, the programmes neither led to better range management nor herd productivity (Keijsper, 1993). It is argued that factors such as land scarcity, weak technical skills of extension workers and "inappropriateness of programmes in cultural terms" contributed to the failure of the programmes (Keijsper, 1993: 324). In 2002, the government of Botswana merged the two SLOCA and Livestock Water Development Programme (LWDP) to form Livestock Management and Infrastructure Development (LIMID), with the objectives of promoting food security through improving range resource management, livestock management and livestock productivity (the Republic of Botswana, 2011).

Overall, it was acknowledged that the Tribal Grazing Land Policy and its accompanying strategies failed to deliver on their mandates (Hubbard, 1986; the Republic of Botswana, 1991; Keijsper, 1993; Sapignoli and Hitchcock, 2013). Hubbard (1986: 194) neatly highlights such failures as thus,

"The major policy initiative in cattle production has brought substantial privatisation of grazing land but as yet has failed in its production, conservation and equity objectives."

In fact, a report by the Ministry of Agriculture (Republic of Botswana, 1990) and a wide range of academic research (see Perkins, 1991; White, 1993; Campbell et al., 2006; Sapignoli and Hitchcock, 2013) reveal that the Tribal Grazing Land Policy propagated inequalities and the rich-poor divide. The tenacity of dual grazing rights by farmers with leasehold or private ranch rights led to increased competition with farmers who could not afford fencing and leasehold occupation (Sapignoli and Hitchcock, 2013). Furthermore, the land zoning exercise engrained in the Policy concluded that over 40 000 people in tribal land resided in land zoned as commercial (Sapignoli and Hitchcock, 2013). Accordingly,

"Some of the people were required to leave the ranches; compensation if it was given at all, was in the form of cash and was relatively minimal. The argument that compensation should be provided in the form of land was accepted only to a limited degree by the land boards ... To offset problems of dispossession, the alternative was to set aside blocks of land either within or adjacent to commercial ranching areas..." (Sapignoli and Hitchcock, 2013: 140).

To curb the shortcomings of the Tribal Grazing Land Policy, a revised policy called the National Policy on Agricultural Development (NPAD), Government Paper No. 2 of 1991, was enacted. The following subsection discussed the relevant sections of the NPAD.

5.4.1. National Policy on Agricultural Development Policy

The overarching goal of the NPAD Policy is to improve agricultural production by improving the sustainability of tribal land management (Republic of Botswana, 1991 and 2015). The sustainable tribal land management is to be achieved through promoting equity and fairness in citizen access to communal land, eliminating corrupt tribal land administration practices and providing a secure and productive environment for agricultural production (Republic of Botswana, 1991 and 2015; Mulale et al., 2014).

The most notable feature of the NPAD Policy is its attempt to impose a shift of land tenure from communal to gradual privatisation. According to this Policy, the problem of overgrazing will be tackled through granting private property rights over selected segments of communal grazing lands (the Republic of Botswana, 1991). The anticipated results of the Policy were that the shift towards private grazing land rights would improve cattle productivity and enforce sustainable management of land resources while avoiding the inherent results of overgrazing such as desertification. NPAD Policy underscored the intention to expand and intensify the Tribal Grazing Land Policy into all communal areas across the country. However, it is worthwhile to observe that almost three decades after the adoption of this Policy, the general position of the law in Botswana is there is no private ownership of land in tribal areas (Mogomotsi and Mogomotsi, 2018).

The policy recommends the fencing of- substantial communal areas as commercial leasehold ranches or privatised grazing lands (the Republic of Botswana, 1991). The fencing component of the NPAD Policy provides that the sizes of the ranches should not be fixed to the initial 8km by 8km dimension, but somewhat dependent on three factors, namely; the number of cattle owned, the carrying capacity of the ranch and the availability of land. Through the fencing component, private land acquisition for cattle ranching has been expanded (the Republic of Botswana, 2015). It has been reported that as of mid-2013, 738 ranches were allocated under the NPAD Policy (the Republic of Botswana, 2015). However, in addition to the persisting low cattle productivity in private land (the Republic of Botswana, 2015), there are numerous other weaknesses of the Policy. As noted by Keijsper (1993: 327), some of such weaknesses are;

1. Land use is biased towards livestock. Other rural land uses are neglected (i.e. hunting and gathering, wildlife, arable agriculture).
2. Present land use planning and co-ordinating bodies are bypassed.
3. Privatisation of communal land, i.e. a major land tenure change, will result in landlessness for the poor rural majority as indicated by [the then Ministry of Finance and Development Planning's] report to the FAO.
4. The dual grazing rights issue is not dealt with. In fact, it is not even mentioned in the White Paper on the National Policy on Agricultural Development.

In the Okavango Delta region, both the Tribal Grazing Land Policy and the NPAD resulted in the zoning of land into the communal land, game reserves, national parks, private ranches, wetlands, and tourism concession areas (Basupi et al., 2017a and 2017b). The region is now surrounded by fences. As established by Basupi et al. (2017a: 8), “the remaining communal area south of the Setata veterinary cordon fence is about 7500 km² in extent”. This is notwithstanding the high statistics of livestock in the region. Generally, the region is characterised by “overlaps of different land use types [that] create a complicated system resulting in pressure and conflict among people, wildlife and livestock” (Basupi et al., 2017a: 8). The livelihoods of rural communities in the Okavango Delta are, as a result, negatively affected. The following section analyses the Tribal Grazing Land Policy and the NPAD from both the NIE and sustainable livelihoods approach frameworks.

5.4.2. Analysis of the Agricultural Sector Institutions

Gupta (2013: 48) argues that agriculture is negatively affected in the Okavango Delta as farmers are “squeezed from both sides”. The author states that,

“One might imagine that when small-farmers near the Delta complain about limited grazing land, they are responding to pressures from both the increasing privatisation of grazing land (and ensuring deterioration of communal land) under the [Tribal Grazing Land Policy] on the one hand, and the restrictions placed on land use under more recent wildlife conservation policies on the other.”

A combination of factors affects agricultural productivity in the Okavango Delta. These, consequently, have trickle down effects on rural livelihoods. The following subsections discuss agricultural sector institutions and land privatisation about sustainable rural livelihoods.

5.4.2.1. Agricultural sector institutions and sustainable rural livelihoods

In the Okavango Delta and other rural areas in Botswana, communities do not only depend on agricultural resources, but also on a variety of wildlife and forest resources to sustain their

livelihoods (Madigele, 2016; Basupi et al., 2017a and 2017b). The tendency of land use institutions to neglect other livelihood strategies is traceable in both the Tribal Grazing Land Policy and the NPAD. These institutions are even biased against arable farming. One of the fundamental principles of sustainable development is that it necessitates a holistic view of planning and strategy (Niedziółka, 2012). The bias of these institutions towards livestock farming as one of the productive land uses with the failure to link livestock farming and other livelihood strategic activities in tribal land arguably provides a partial understanding of the land use dynamics and their corresponding manifestations.

One of the requirements for being granted a ranch according to the Tribal Grazing Land Policy is that a farmer (or a group of farmers) needs to meet the stipulated threshold of capacity, capability and capital (Republic of Botswana, 1975 and 1991). Accordingly, a farmer needs “management capability and sufficient herd size (i.e. 300 livestock units for a ranch that has a 400 livestock units capacity) and access to capital” (Malope and Batisani, 2008: 391). Similarly, the NPAD requires potential ranchers to prepare and present a business plan to a land board. Access to capital and proof of capability are some of the requirements of obtaining a ranch. It can hence be argued that by design, the Tribal Grazing Land Policy and the NPAD exclude the poor and low-income earners. The social stability pillar and the institutional imperative of the PoS model discussed in Chapter 3 are arguably compromised. The institutional sustainability imperative calls for decision-making mechanisms that integrate the realities - social, environmental, economic and cultural - of individuals and communities (UNCSD, 2007). The acknowledgement and integration of such realities are crucial for acceptance, inclusion and limiting marginalisation in decision-making processes. Similarly, social sustainability emphasises on aligning the people’s skills and experiences to a dignified life (Chapter 3).

Research by the Centre of Applied Research (CAR) reveals that the enactment of the two policies marginalised and negatively affected the livelihoods of small-scale farmers and the poor (CAR, 2005). This is because the small-scale farmers and their herds were relocated from the communal

grazing spaces to make way for the borehole drillings and private ranches. Malope and Batisani (2008: 392) note that,

“It could perhaps be argued that the displaced farmers will benefit from the extra jobs created on the commercial farms. However, the absence of enforced minimum wages for farm workers implies that the displaced subsistence farmers are unlikely to benefit from these jobs. In addition, the job creation potential of the fenced farms has not been impressive because the majority continued to operate like cattle posts...”

The dispossession and zoning of land in favour of commercial ranches did not yield the anticipated returns to communities. The policies, therefore, benefited the elite few and negatively affected the livelihoods of those already in the low-income bracket. Within the sustainable livelihood framework, it is argued that ‘bad’ institutional governance that elevates the elite few and leads to such factors as overgrazing often perpetuates the land use conflicts and disrupts livelihoods (Lundy et al., 2016). The current livelihood status of the affected communities in the Okavango Delta is a reflection of the underlying institutional and structural complexities and irregularities. The livelihood status of these communities should hence be viewed as an expression of inadequate and skewed land regulation or management systems. In order to address such institutional inadequacies, there is a need for a proper diagnosis of the institutional structures within a complex setting, given the “overlaps of different land use types” observed by Basupi et al. (2017a: 8). The diagnosis involves the mapping of institutional structures and assessing the practicalities of a set of institutional arrangement within a specific setting. The emphasis on the specifics of the setting takes into consideration the heterogeneity of locations, resource dynamics, prevalence and depth of the conflicts, as well as informal institutional arrangements in place.

5.4.2.2. Land privatisation and sustainable rural livelihoods

Over the years, governments in developing countries have been promoting the privatisation of communal property (see Feeny et al., 1990; Gibson et al., 2002; Altrichter and Basurto, 2008). One of the main objectives of such shift is to internalise and curb the externalities associated

with the communal property by imposing excludability of access to the resource, such as land. The negative externalities of communal grazing land include overgrazing and potential desertification. Botswana's intentions to promote privatisation of communal grazing land are contained in the Tribal Grazing Land Policy and the NPAD.

The two policies promote land privatisation in various ways. Primarily, the policies promote the fencing of substantial communal areas as commercial leasehold ranches or privatised grazing lands. The demarcations of many ranches, resulting in a shift from communal to private property rights, have left small-scale farmers and households dependent on forest resources with no, or little, land to subsist on (Malope and Batisani, 2008). Moreover, in areas such as the Okavango Delta, the productivity of livestock has been disrupted by the shift of the tenure system from communal to private (Basupi et al., 2017a).

Both neoclassical and new institutional economists propose for the allocation of private property rights for the attainment of greater efficiency of natural resources (Bromley, 1992; Ostrom, 1990; Tregarthen and Rittenberg, 2000; Hodgson, 2009). When properly monitored and enforced, private property rights often promote optimal allocation of land resources, reduce uncertainty about who should bear the costs and reap the benefits from maintaining or investing in land resources, and provide a greater sense of ownership (Johnson and Libecap, 1982; Bromley, 1992; Hodgson, 2009; Hackett, 2011). For these reasons, "securing property rights is frequently advanced as an effective strategy to promote protection, conservation or sustainable use of natural resources" (Altrichter and Basurto, 2008: 154).

Despite the general benefits of shifting from communal to private land rights, Libecap (1989: 22) cautions that "where the parties are heterogeneous and where customs have governed resource allocation and use, the installation of more formal property rights may involve risks for some groups". In the case of Botswana, the groups that endured the highest risk include hunter-gatherers, women, youth, small-scale farmers and non-cattle-owning households (Malope and Batisani, 2008). Their livelihood activities were, and still are, constrained and thus negatively

affected by the privatisation of communal spaces. As argued in Chapter 2, a top-down blanket approach to imposing property rights often fails to acknowledge the heterogeneity and complexities of systems in which they are going to operate. A change on the land tenure institutions needs to address such complexities and realities in order to avoid exposing vulnerable groups to risks associated with unsustainable livelihoods.

In the Okavango Delta, one of the two central contemporary land tenure systems is conservation and tourism uses. These activities take place in what was traditionally considered as customary land. The following section discusses three conservation institutions, namely; the Wildlife Conservation and National Parks Act (WCNPA), the Wildlife Conservation Policy and the Policy on Community Based Natural Resources Management.

5.5. Conservation institutions

The constant appreciation of the value of natural resources, such as wildlife, to economic growth and tourism development, has prompted the country to embark on their sustainable utilisation and conservation. However, there is a need for an intricate balance between the conservation of natural resources and improving communities' welfare. The institutions governing the conservation of natural resources are, therefore, burdened with the task of ensuring that communities derive tangible benefits from wildlife resources while simultaneously ensuring the ecological sustainability of such resources. In Botswana, several institutions attempt to attain the balance between wildlife conservation and improvement of community livelihoods. The following subsections discuss the relevant provisions of the conservation institutions that have been developed in Botswana post-independence.

5.5.1. Wildlife Conservation and National Parks Act

The primary goal of the Wildlife Conservation and National Parks Act (WCNPA) is to “make further and better provision for the conservation and management of the wildlife of Botswana. This is by giving effect to CITES and any other international convention for the protection of fauna and flora

to which Botswana is, from time to time, a party, to provide for the establishment, control and management of national parks and game reserves, and for matters incidental thereto or connected therewith” (Republic of Botswana, 1999). Section 6 (1) (a – k) gives the Minister the responsibility to maintain, control and manage national parks without. Some of the responsibilities and the powers of the Minister are as follows;

- take such steps as will ensure the security of the animals and vegetation in national parks and the preservation of such parks and the animals and vegetation therein in a natural state;
- reserve or set aside any areas of such parks as breeding places for indigenous animals, and nurseries for indigenous trees, shrubs, plants and flowers;
- construct, maintain, administer or let hotels, restaurants, rest camps and other buildings and let [accommodation] therein;
- control the charges which may be made by shopkeepers, hotel keepers, restaurant proprietors, boatwrights and persons plying boats for hire;
- purchase, exchange or otherwise acquire any specimen of indigenous animal or vegetation which he may consider it desirable to introduce into a national park; and
- authorize the killing or capturing of any animal, or the destruction or removal of any species of vegetation in the interest of the conservation of the fauna and flora of such parks, and of their management and control (the Republic of Botswana, 1999).

Section 7 acknowledges that some people were dispossessed of their land as a result of relocations to pave the way for the establishment of when national parks. The section grants park entry permission to any person who “was or belongs to a community which was, resident in the national park before the date when the area was declared as a national park” (the Republic of Botswana, 1999). Despite the acknowledgement of relocated communities and, by extension the adjacency of such communities to the parks, Section 8 (3) (a) provides that,

“any domestic animal found within a national park, other than an animal in the lawful possession of a wildlife officer or a gate attendant, or introduced into the park ... may be destroyed by a wildlife officer or a parking attendant” (the Republic of Botswana, 1999).

Part III of the Act defines the provisions for the establishment of Wildlife Management Areas (WMAs) and Controlled Hunting Areas (CHAs). Section 15 (3) states the regulations made by the Minister in respect to WMAs. Some of the regulations directly related to rural livelihoods of communities adjacent to WMAs include;

- the erection of any dwelling house or other building therein, or the residence therein of any person, or the size of any settlement therein;
- the grazing of any stock therein and any conditions or limitations concerning the husbandry of stock therein; and
- the cultivation of any land therein, the conditions under which persons may cultivate, and the allocation of land for cultivation; and conditions governing the drilling, allocation and use of boreholes (the Republic of Botswana, 1999).

Sections 46, 47 and 80 acknowledge the existence of human-wildlife conflicts. Section 46 makes provisions for the killing of animals causing damage to livestock, crops and other properties. Equally, Section 80 (1) (a-b) states that wildlife officers may,

“With the consent of the owner or occupier in respect of private land, go onto any land, and destroy any animal which -

(a) Has caused or is causing or is likely to cause damage to any livestock, crops, water installation or fence; [and]

(b) Is or is likely to be dangerous to human life” (the Republic of Botswana, 1999).

Human-wildlife conflicts are described as conflicts that take place when the behaviour or needs of wildlife negatively affect the goals of humans, or when the needs of humans have inverse impacts of the needs of wildlife (Madden, 2004; Fentaw and Duba, 2017). Factors such as fragmentation of habitats lead to an increase in the boundary for the interface between humans and wildlife (Fentaw and Duba, 2017). Consequently, this increases the contact and conflict of wildlife with humans, leading to various damages to humans, such as injury, loss of life and threats to livelihoods, among others. Section 47 makes provisions for the killing of wild animals in self-defence. Subsection 1 of 47 provides that,

“Notwithstanding anything to the contrary in this Act, the owner or occupier of land, or any agent of such owner or occupier may, subject to the provisions of this Act, kill any animal which caused, is causing or threatens to cause damage to any livestock, crops, water installation or fence on such land... Provided that nothing in this section shall authorise the killing of an animal which is in a national park or a game reserve, or the use of any poisoned weapon, pitfall or snare for the killing of any animal” (the Republic of Botswana, 1999).

Section 46 (2) requires the affected party to report the killing of an animal within seven days. The affected party is also required to deliver or surrender the trophies to either the wildlife office or police station (the Republic of Botswana, 1999). Subsection 4 provides that “compensation may be paid, as may be provided in regulations made under the Act, to any person who satisfactorily establishes that he has suffered damage from the action of an animal” (the Republic of Botswana, 1999). However, the Minister, under subsection 5, determines the rate of compensation. The implications of the compensation clause of the Act are discussed in subsection 5.5.4.1 of this chapter.

5.5.2. Wildlife Conservation Policy

In Botswana, the government recognises wildlife as resources of national importance worthy of conservation (the Republic of Botswana, 1986). The value of wildlife is associated with its potential overall contribution to the economy as well as its endowment and aesthetic values. At independence, game reserves and national parks were established in 17% of the country’s total land area (the Republic of Botswana, 1986). Wildlife resources are also found in freehold and communal areas. After this realisation, the government had to “establish another type of land use, in what is to be termed [WMAs], for some of these game rich habitats that lie outside the Parks and Reserves” (the Republic of Botswana, 1986).

WMAs are distinctively dissimilar to national parks and game reserves. On the one hand, national parks and game reserves are primarily used for the total preservation wildlife resources. On the other hand, in WMAs, “sustained wildlife utilisation will be actively encouraged. Some WMAs

adjacent to [national parks or game reserves] will act as buffer zones to prevent conflicts between the latter and areas of more intensive agricultural uses. Others will protect migrating wildlife by safeguarding migratory corridors” (the Republic of Botswana, 1986).

The Wildlife Conservation Policy also distinguishes between WMAs and Controlled Hunting Areas (CHAs). The primary land use for the former is wildlife utilisation while the latter is used for controlled hunting purposes and “there will be no control over other activities, even if they are detrimental to the wildlife populations” in CHAs (the Republic of Botswana, 1986).

In the Okavango Delta region, WMAs emerged in the 1980s as a result of a national land zoning exercise following the introduction of the Tribal Grazing Land Policy (Gupta, 2013; Basupi et al., 2017a). According to Mbaiwa et al. (2011), the Okavango Delta region is divided into 28 WMAs and 49 CHAs. The CHAs are leased to communities through the Tawana Land Board. In turn, communities allow for such activities as hunting and photographic safaris through forming partnerships with companies in wildlife-based tourism to operate in their CHAs. As a result, there is a three-way reciprocally beneficial relationship between the communities, the government and the tourism industry. Accordingly, “the communities expect economic benefits from wildlife through tourism, the government expects wildlife conservation and tourism revenue, and the tourism industry expects wildlife-based tourism” (Mbaiwa et al., 2011: 406).

The pivotal aim of the Wildlife Conservation Policy is to ensure the sustainability of wildlife resources while obtaining economic returns from land allocated to wildlife (the Republic of Botswana, 1986). The specific goals of the Policy are to,

- a. Realise the full potential of the wildlife resource which, in periods unaffected by drought, is running far below its sustainable yield capacity.
- b. Develop a commercial wildlife industry in order to create economic opportunities, jobs and incomes for the rural population and to enable more rural dwellers to enter the modern wage economy.
- c. Increase the supply of game meat as a consequence of the further development of wildlife commercial utilisation.

The subsidiary objectives of the Wildlife Conservation Policy aim to promote rural development, citizen participation and government control of development. Despite these noble objectives, several empirical studies in the Okavango Delta have established that the WMAs particularly, and the Wildlife Conservation Policy generally, have not only catalysed the prevalence of human-wildlife conflict in the region but have also negatively affected the livelihoods of communities reliant on natural resources (see Mbaiwa et al., 2008 and 2011; Gupta, 2013). Some of the failures of the Policy are attributable to its top-down approach, which largely centralises the management of wildlife and another natural resource. The alternative to this approach is the Community Based Natural Resources Management (CBNRM). The following subsection discusses the Policy on CBNRM.

5.5.3. Policy on Community Based Natural Resources Management

The CBNRM concept is premised on the argument that common pool or communal resources can be best utilised and managed if the management responsibilities are transferred to communities (Bromley, 1992; Ostrom, 1990; Pienaar et al., 2013). It, therefore, proposes a decentralised approach to natural resources management. This entails redistributing powers and transferring responsibilities of natural resources management to local communities (Ostrom, 1990; Bromley, 1992). It is argued that approaches such as the CBNRM are bottom-up and participatory, with communities playing a considerable role in influencing policy direction and steering natural resources utilisation towards sustainability (Pienaar et al., 2013). As a result, the community's control and power over natural resources are increased, and so are their incentives to preserve and conserve natural resources (Ostrom, 1990; Bromley, 1992; Pienaar et al., 2013).

In Africa, it has been observed that formal institutional approaches such as wildlife protection legislation and strategies such as the creation of protected areas often fail in their pursuit of protecting natural resources (Osborn and Hill, 2005; Pienaar et al., 2013). The CBNRM programmes have hence been implemented in some countries on the continent, including Botswana. The outcomes of implementing CBNRM programmes vary, often skewed towards the

failure to attain the dual goal of natural resources conservation and improved rural livelihoods (Adams and Infield, 2003; Pienaar and Keabetswe, 2005; Pienaar et al., 2013; Mbaiwa, 2015). The failures are attributed to an array of reasons, including the overall difficulty of attaining a balance between game consumption for food security and wildlife conservation for environmental sustainability, low compensation for damage caused by wildlife, and inequitable distribution of wildlife revenues, among others (Pienaar and Keabetswe, 2005; Pienaar et al., 2013).

In Botswana, CBNRM is defined as a development approach whose central aim is to protect and manage the natural resource base (the Republic of Botswana, 2007). It is understood as “the way in which communities organise themselves to sustainably manage their natural resources” (Republic of Botswana, 1999: 7). CBNRM programmes were established in the 1970s with the aim of tackling human-wildlife conflicts by incentivising rural communities to conserve wildlife and wildlife habitat (Pienaar et al., 2013). Thus, before the enactment of a formal policy document in 2007, in Botswana, CBNRM activities were predominantly wildlife-based (CAR, 2016).

In the 1990s, the CBNRM projects were implemented as pilot efforts designed for rural communities located adjacent to game reserves and national parks (Mbaiwa, 2015). This follows the argument that,

“People who live closest to natural resources generally absorb the greatest costs associated with their conservation. Given proper awareness and incentives, they are the most likely to successfully benefit from and conserve such natural resources within their [environments]. For communities to actively engage in natural resources conservation, the benefits from such resources must exceed the costs of conservation.” (Republic of Botswana, 2007: 1)

The first CBNRM project in Botswana was the Chobe Enclave Conservation Trust (CECT), registered in 1993 (Lepetu et al., 2008; Mbaiwa, 2015). Subsequently, the Sankuyo Tshwaragano Management Trust (STMT) in the Okavango Delta area was registered in 1995 (Lepetu et al., 2008; Mbaiwa, 2015). Since then, numerous CBNRM projects have emerged in various parts of the country. The spatial distribution of the projects is illustrated in Figure 5.4.

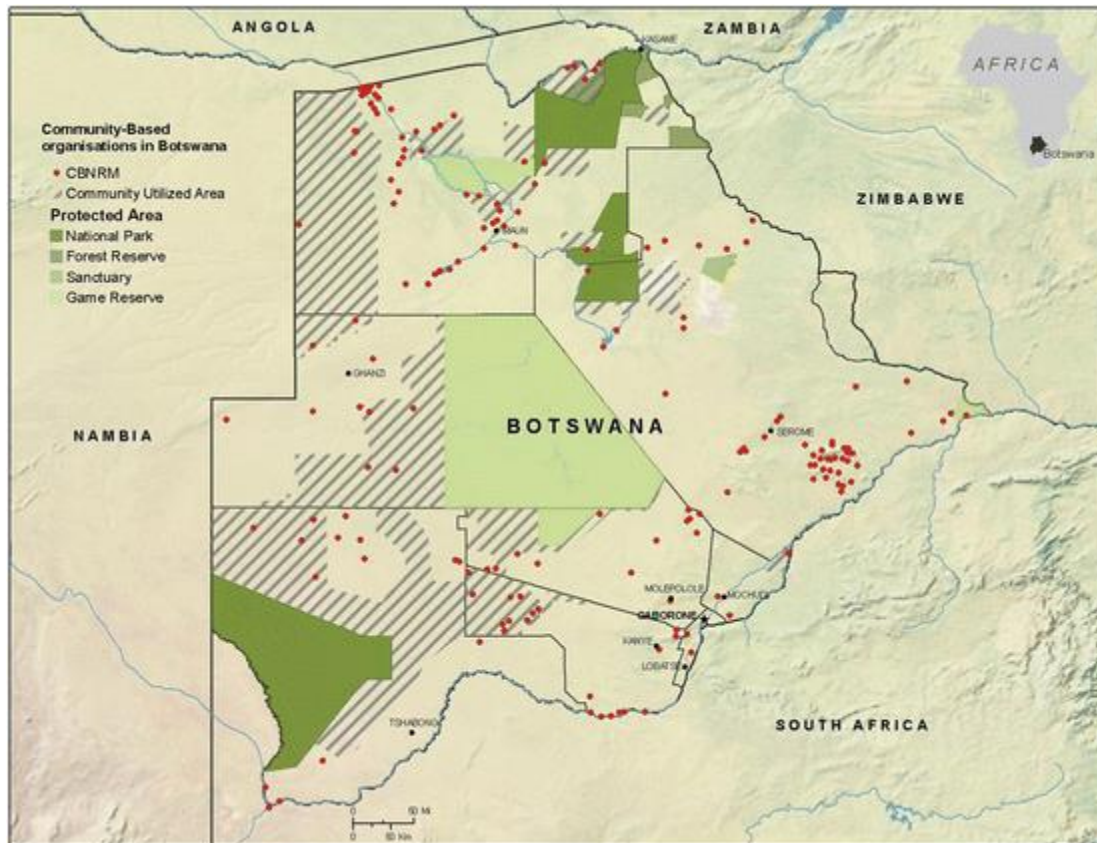


Figure 5.5: The spatial distribution of CBNRM projects in Botswana (Source: Mbaiwa, 2015: 68)

The overall goal of the CBNRM Policy is to serve as a cornerstone for conservation-based development that has a balance between protecting ecosystems and reducing poverty levels in rural communities (the Republic of Botswana, 2007). It aims at reducing poverty levels in rural communities through creating opportunities for livelihood diversification. Some of the specific objectives of the Policy are to,

- a. Specify land tenure and natural resources user rights, which may be devolved to communities;
- b. Establish a framework that provides incentives for communities to manage natural resources sustainably;
- c. Create opportunities for community participation in natural resources management;
- d. Promote conservation and CBNRM strategies that are based on sound scientific principles and practices;
- e. Encourage communities to participate meaningfully in the monitoring of CBNRM, and

- f. Enhance the relationship between protected areas' management and CRNRM (Republic of Botswana, 2007)

The CBNRM Policy recognises the need to use incentives in order to promote the sustainable use of natural resources. Further, it highlights that the human-wildlife interface involves favorable transaction costs for the environment and the rural communities. Therefore, favorable costs must be complemented, and potentially exceeded, by incentive-creation strategies for the production of positive spill over effects on rural livelihoods. It must be noted, however, that while the CBNRM Policy transfers some responsibilities of natural resources management and utilisation to rural communities, and it does not transfer the ownership of natural resources to communities or individuals (the Republic of Botswana, 2007). In Botswana, wildlife is owned, controlled and managed by the government through the Department of Wildlife and National Parks (DWNP) (Mulale, 2005).

The CBNRM Policy delegates the resource use rights and management to Community-Based Organisations (CBOs). CBOs are defined as entities responsible for natural resources management formed by “a community, groups of communities, or groups within communities” (the Republic of Botswana, 2007). They are responsible for participating in the monitoring of the ecosystems, natural resources and natural habitats while deriving utility and socio-economic benefits from such participation. They are also responsible for preparing land use management plans (van der Jagt and Rozemeijer, 2002). Its constitution and an elected committee govern each CBO. The elected CBO committee serves as the “supreme governing body in each CBNRM project” (Mbaiwa, 2015: 65).

Two years ago, it was established that there are 94 registered CBOs, covering 61% of the rural population in 174 villages and that the average poverty rate in CBO villages is estimated to be 27% (CAR, 2016). This is, in part, due to the employment opportunities offered by CBOs. For example, in the Okavango Delta, employment is created by safari companies with sub-leases and by trusts (Mbaiwa, 2015). The most common natural capital include wildlife, veld products and

landscape (CAR, 2016). The summary of the CBNRM overview in Botswana is provided in Table 5.3.

Table 5.3: CBNRM overview in Botswana

	2012	2015/16
Organisation		
- Number of CBNRM CBOs	106	147
- Number of registered CBOs	94	80
- Number of active CBOs	53	33
- Population covered by CBOs	557 447	283 123
- Number of villages covered by CBOs	174	123
- CBO population as % of total population	28	10
- CBO population as % of rural population	61	
- % of poor in CBO villages out of total poor	37	
- Average poverty rate in CBO villages	27	
Livelihood sources		
- Most important livelihood sources	Agriculture and social welfare	
- Least important livelihood sources	CBO benefits	
Natural capital		
- Most common natural assets	Veld products, wildlife, landscape	
Natural resource management		
- Most common activities	Bird counts, Problem Animal Control, firefighting	
Financial support		
- Donations received in 2015 (BWP ¹)	118 616	2 794 178
Cash-generating activities		
- Popular activities	Ecotourism, events	Hunting, ecotourism
CBO Revenues		
- Number of CBOs generating their revenue	22	20
- CBO revenue (BWP million)	26.8	22.1

(Source: Adapted from CAR, 2016)

¹ US\$ 1= BWP10.51, or BWP1 = US\$ 0.095 as at 18 January 2019.

The government imposes quotas to guide resource harvesting activities in order to ensure conformity to sustainable practices (Republic of Botswana, 1999 and 2007). The quotas were determined annually after an aerial survey of wildlife populations. In addition to quota impositions, the government can influence the activities of CBOs through directives and policy announcement. Such directives are classified as quasi-formal institutions in this thesis. An example is the hunting ban announced by the former President in 2013. In his State of the Nation Address delivered on the 4th of November 2013, the then President of Botswana, His Excellency Lt. General Seretse Khama Ian Khama announced a country-wide hunting ban. The President announced that,

“Government has decided to introduce a ban on the hunting of wildlife in all controlled hunting areas in Botswana with effect from January 2014. The decision was necessitated by available scientific based information indicating that several wildlife species are in decline. The suspension of hunting will allow Government, working with all stakeholders, to focus on understanding the causes of these declines and, where possible, to put in place remedial measures to reverse the trends. Government is fully cognizant of the effect that the ban will have on Community Based Organisations that have been benefiting from hunting in the past. Efforts are therefore underway to prepare the affected communities for sustainable non-consumptive utilisation of their resources, through the development of management plans. Communities and concessionaires are being capacitated to undertake resource monitoring in their areas to allow them to track the impact of management interventions such as water provision, measures to reduce illegal off-take and fire management.”

Studies have since established that the hunting ban imposed in 2014 has had significant adverse impacts on CBOs with valuable hunting rights (Mbaiwa, 2015 and 2017; CAR, 2016). As shown in Table 5.3, before the hunting ban, the most popular cash-generating activities in CBOs were hunting and ecotourism. After the hunting ban, the most popular cash-generating activities are ecotourism and events (CAR, 2016). The ban has resulted in a substantial loss of income generated by CBOs and jobs created by safari hunting (Mbaiwa, 2017). By direct implication, the

livelihoods in communities previously benefiting from CBOs involved in safari hunting have been affected negatively. According to Mbaiwa (2017: 48),

“The CBNRM Forum reported that in the Okavango Delta, a total of P7 million and 200 jobs were lost due to the hunting ban” within the first year of imposition of the ban... [Sankuyo] Village has its income dropped from P3.5 million to P1.8 million, experiencing 35 job losses; Okavango Kopano Mokoro Community Trust’s income fell from P4.8 million to P2.5 million, and about 40 people lost their jobs. Other projects in the Okavango Delta and Makgadikgadi Pans such as Seronga, Gudigwa, Phuduhudu and Xaixai projects experienced job losses totalling about 80 jobs...”

Overall, the impacts of conservation institutions on communities’ livelihoods, rural development and natural resources conservation oscillate between positive and negative. Similarly, the institutions have influenced the interactions between wildlife and humans both positively and negatively, influencing the swing of such interactions to move between coexistence and conflict. The following subsections analyse the conservation institutions from both the NIE and sustainable livelihoods lenses.

5.5.4. Analysis of the Conservation Institutions

Botswana plays a pivotal role in wildlife conservation (Winterbach et al., 2014). The country has one of the largest populations of elephants, cheetahs and lion in Africa and the world (Bauer and van der Merwe, 2004; Purchase et al., 2007; Winterbach et al., 2014). However, its conservation institutions do not only aim to attain ecological sustainability. They also aim to improve rural livelihoods and community participation in conservation. Through the CBNRM Policy, the government aims to devolve natural resources management to local communities. This is in line with the common theme of communal or universal property natural resources management by institutionalists such as Ostrom. The success, or lack thereof, of the aims of conservation institutions, depends on the institutional design and the synergies between formal and traditional settings. The following subsections analyse the conservation institutions discussed under three themes, namely; (i) the politics of compensation and the effects on livelihoods, (ii)

decentralisation and community participation, and (iii) analysis of the changing institutional landscape using the ‘camel’s nose’ analogy.

5.5.4.1. The politics of compensation and the effects on livelihoods

While Section 46 (4) of the Wildlife Conservation and National Park Act refers to the payment compensation for damage caused by wildlife, the subsection is discretionary and conditional. The condition is that the person who has suffered damage should ‘satisfactorily’ provide evidence that he/she has “suffered from the action of an animal” (the Republic of Botswana, 2007). In cases where damage has been suffered, but the evidence is ‘unsatisfactory’, the afflicted will not be compensated.

In addition, the Act does not refer to compensation for damage caused to harvested crops. Therefore, there is necessarily no compensation for harvested crops damaged while stored in the fields awaiting thrashing (BOPA, 2018). The compensation is calculated against the area of land damaged. Therefore, there is no provision for compensation of harvested crops. This is despite the provision of ‘evidence’ of damage as required by the Act. According to the representative of Ministry of Environment, Natural Resources Conservation and Tourism at the question and answer session at the parliament,

“... the ministry acknowledges harvested crops stored in fields had the same value as those not yet harvested it was not easy to determine the quantity of the stored crops, especially where alleged harvest was done in the absence of any competent witness... the ministry advises farmers to avoid harvesting crops and store them inside the fields in unsecured storages that would obviously attract elephants” (BOPA, 2018).

No reference has been made to developing mechanisms of calculating the value of the damage caused and value lost. Notwithstanding the extent of the damage on livelihoods of the affected farmers, the government’s position remains ‘satisfactory’ evidence. Equally, the Act does not refer to compensation for loss of life or income due to damage or injury caused by wildlife. The government, through the Department of Wildlife and National Parks, can make an

ex gratia minimal payment “from a sense of moral obligation rather than because of any legal requirement. The law does not provide for any compensation. The victim is also required to go to a government hospital where they will get free treatment” (The Voice, 2018). As at 30 June 2018, the Department had no records of statistics of survivors of wildlife attacks. However, 13 fatalities were recorded between then and 2017 (The Voice, 2018). The Act’s non-reference to compensation due to direct threats to human life is concerning. It undermines the value of human welfare, health and safety, as well as their inherent economic and social costs. The social costs, including restriction of travel, additional labour costs due to the need to guard property, fear, and loss of sleep among other costs, have detrimental costs on livelihoods (Mworia, 2006).

Human-wildlife conflicts do not only have adverse effects on rural livelihoods but also lead to negative attitudes towards wildlife conservation and general aversion towards wildlife resources (Nelson et al., 2003). The negative attitude can undermine local, national, regional and international conservation initiatives. As a consequence, two major opposing interest groups emerge from the prevailing negative attitudes. As argued by Mworia (2006: 16),

“First, local communities view wildlife as liabilities that should not continue occupying parcels of land (and other natural resources) that could otherwise be used for more beneficial activities. Second, conservationists, on the other hand, highly value wildlife, essentially due to their contribution to tourist attraction, employment creation and revenue, and would want to jealously conserve it.”

In Botswana, it has been established that when compensation is offered, the amount is often disproportionately low compared to the value of damage caused by wildlife (AfESG HECWG, 1998). Low compensations are arguably not effective in reducing tensions between local communities and the government. They also fail to improve livelihoods since the value earned is exceeded by the value lost. The government needs to align the number of compensations to the value of damage caused. Furthermore, the Act needs to be revised in order to acknowledge other costs related to wildlife damages and how such costs could be calculated.

5.5.4.2. Decentralisation and community participation

Through CBNRM programmes, the management of wildlife resources is decentralised to prevent their destruction and to promote their sustainability. Accordingly, “where CBNRM was successfully implemented, wildlife population has gone up... In the past ten years since its inception, wildlife populations increased by about 50 per cent with elephants doubling from 4 000 to 8 000 in campfire areas” (BOPA, 2016). The government hence appreciates that natural resources such as wildlife cannot be managed as easily through a fully centralised system. According to Chevallier and Harvey (2016: 2),

“The Botswana government has long recognised that sustainable and viable tourism and conservation efforts will only succeed if local communities have a stake in the preservation of wildlife and supporting ecosystems.”

Generally, new institutionalists advocate for decentralisation of natural resources (Chambers, 1983; Poffenberger, 1990; Ostrom, 1990). The basis of this proposition is that the centralisation of power of natural resources makes community participation difficult, if not impracticable, due to the concentration of power in the few hands of bureaucrats who impose rules in a dictatorial manner, often resulting in resistance by communities (Chambers, 1983; Ostrom, 1990). Several studies have concluded that centralisation and privatisation of natural resources management do not always lead to sustainable natural resources utilisation and management (see Lawry, 1989; Murombedzi, 1990; Ostrom, 1990; Murphree, 1997; Mulale, 2005). Therefore, there is a call for comprehensive management of wildlife and other natural resources through participatory, bottom-up approaches that empower local communities to be active participants in natural resources management decision-making (Ostrom, 1990; Gray et al., 2001; Mulale, 2005). Ostrom (1990: 1) submits that “communities of individuals have relied on institutions resembling neither the state nor the market to govern some resource systems with reasonable degrees of success over long periods of time”. Against this backdrop, communities are invaluable assets fully capable of sustainably managing wildlife and other natural resources from meeting their livelihood needs.

In the Okavango Delta, prior to the ban of safari hunting, studies revealed that local communities generally had a positive attitude towards wildlife conservation (Mbaiwa and Stronza, 2010; Mbaiwa, 2011 and 2017). According to the studies, the decentralisation of natural resources offered a meaningful role for local communities in natural resources conservation (Mbaiwa and Stronza, 2010; Mbaiwa, 2011 and 2017). Consequently, the ban contributed to negative attitudes towards wildlife conservation in the Okavango Delta due to its negative impacts on the socio-economic contribution to local communities (Mbaiwa, 2017). As a result, the human-wildlife conflicts in the region have intensified. Between the years 2012 and 2014, there was an over 50% increase in reported cases of human-wildlife conflict (Mbaiwa, 2017).

The ban has undermined the country's efforts to strike a balance between attaining conservation of wildlife and other natural resources and improving rural livelihoods. The results are an increased divide between communities and wildlife resources, leading to alienation of communities from their resources. This top-down imposition is thus retrogressive, with negative socio-economic and ecological consequences. The results of the ban are contrary and divergent from the intended purpose of the safari hunting ban. The 'see-saw' move between centralisation and decentralisation of natural resources management promotes negative attitudes of local communities towards natural resources and creates tensions between communities and the government. It also undermines the capacity and capability of local level formal and informal institutions to manage their natural resources sustainably. Therefore, in the case of Botswana generally, and the Okavango Delta region in particular, "increased centralisation of control over wildlife management and restrictions on the freedom of communities to derive benefits from wildlife via safari hunting is contrary to sustainable development ideals and will not promote wildlife conservation and rural [development]..." (Mbaiwa, 2017: 57).

5.5.4.3. Changing the institutional landscape: The case of camel's nose?

One of most common Arab proverbs or metaphorical moral is that 'If the camel once gets his nose in the tent, his body will soon follow'. The moral follows from the following old story by an unknown source,

One cold night, as an Arab sat in his tent, a camel gently thrust his nose under the flap and looked in. "Master," he said, "let me put my nose in your tent. It is cold and stormy out here." "By all means," said the Arab, "and welcome" as he turned over and went to sleep.

A little later the Arab awoke to find that the camel had not only put his nose in the tent but his head and neck also. The camel, who had been turning his head from side to side, said, "I will take but little more room if I place my forelegs within the tent. It is difficult standing out here." "Yes, you may put your forelegs within," said the Arab, moving a little to make room, for the tent was small.

Finally, the camel said, "May I do not stand wholly inside? I keep the tent open by standing as I do." "Yes, yes," said the Arab. "Come wholly inside. Perhaps it will be better for both of us." So the camel crowded in. The Arab with difficulty in the crowded quarters again went to sleep. When he woke up the next time, he was outside in the cold, and the camel had the tent to himself.

The changing institutional landscape of natural resources governance and management in the form of land reforms, policy revisions and enactment of legislature in Botswana is likened to the camel's nose metaphor in this thesis. The Tribal Grazing Land Policy defined the reserve land under two broad categories, namely; land reserved for future use by people with few herds and land reserved for other uses, such as cultivation, wildlife and mining. The Wildlife Conservation Policy of 1986 considers WMAs as a form of zoning under the latter category. This is arguably 'putting the nose in the tent'. The reserve land and WMAs appear to have perfectly aligned intentions at face value. However,

the co-opting of the concept of reserve lands by conservationists promoting WMAs has meant that certain areas never initially imagined to be zoned a wildlife area have in fact become swept up in the zoning of WMAs... - in other words, land occupied by farmers and herders who do not want their use rights circumscribed by wildlife interests - has been included in plans for Wildlife Management Areas (Gupta, 2013: 58).

This explains the variations in land reserved for conservation purposes over the years. The sizes have increased over time. At independence, 17% of the country's total land area was reserved for wildlife conservation purposes in the form of game reserves and national parks (the Republic of Botswana, 1986). By 1987, land surface area for game reserves, national parks and WMAs was extended to about 23% (Spinage, 1991). In a report by the Central Statistics Office (CSO, 2001), it was established that Botswana has approximately 111 011.75 square kilometres (sq km) of the total land surface area as a protected area. This is around 19.1% of the total land area. A further 20% of the total land surface area is reserved for WMAs (CSO, 2001). Therefore, a total of roughly 39% of the country's land surface area is reserved for wildlife conservation purposes. Consequently, "WMAs inhibit expansion of grazing land, development of boreholes [or] watering points and access to land for cultivation" (Mulale, 2005: 23).

Initially, the promotion of wildlife conservation and the establishment of WMAs were meant for those areas with minimal or no agricultural activity. Just like the in the Tribal Grazing Land Policy, the needs of those with few or no herds are acknowledged and prioritised in the Wildlife Conservation Policy. However, it has been argued that Policy writings do not reflect the reality. Accordingly,

The zoning of WMAs grew out of a larger top-down technocratic process of land allocation initiated by the TGLP that assumed a blank slate upon which prescriptions for ecologically and economically suitable types of land use practices could be made, and corresponding land use zones carved out. This process completely overlooked the everyday practices of the people who survived on the land and the alternative environment imaginaries that they in turn held (Gupta, 2013: 59).

As a consequence of the zoning of WMAs without regard for subsistence agricultural activities, some people were displaced and relocated. The exercise undermined the pre-existing land uses a move termed as a shift from 'putting the nose in the tent' to 'placing the forelegs within the tent' in this thesis. While the WMAs promised the broader participation of rural communities through the decentralisation of natural resources management in the form of CBNRM, the activities of CRNRM and their respective CBOs are regulated through the centralised system of

the government. This creates a complex institutional landscape where the control over the use and management of natural resources is imposed from top-down within a bottom-up or participatory setting.

The regressive move to impose the hunting ban is regarded as the 'crowding in of the camel' in this thesis. It shows that the devolution of power over natural resources to local communities by the government is but a mirage. The power lies at the top while the conflict hurts those at the bottom of the policy decision-making hierarchy. Therefore, the changing institutional landscape creates room for the central government to take full control of the natural resources which used to be in tribal and then community control. As neatly summed up by Lund (2011: 885), rural communities' "access to land depends on a government institution's control over land does not represent or reflect pre-existing sovereignty. It *produces* it." (Emphasis added)

5.6. Tourism sector institutions

One of the critical global challenges faced by most countries in the twenty-first century is high rural poverty rates and degradation of biodiversity resources (Mbaiwa, 2015). The concept of ecotourism was developed to describe tourism that performs the dual role of improving the welfare of rural communities while promoting the conservation of the natural environment (TIES, 1990; Patterson, 2002). It is believed that the in ecotourism activities, the revenue earned can be reinvested into biodiversity conservation (Mbaiwa, 2008 and 2015).

Botswana, just like many world countries, is faced with an array of environmental concerns (the Republic of Botswana, 2008). Among these concerns are the challenges posed by mass tourism on biodiversity conservation and environmental integrity (Darkoh and Mbaiwa, 2014). The country has, since the 1990s, adopted the ecotourism approach to address the concerns of natural resources depletion, biodiversity loss and poor rural livelihoods in such regions as the Okavango Delta (Mbaiwa, 2015). In essence, the government's position is that "sustainable and

viable tourism and conservation efforts will only succeed if local communities have a stake in the preservation of wildlife and supporting ecosystems” (Chevallier and Harvey, 2016: 2).

In addition to the Tourism Act of 1992 and the Tourism Policy of 1990, two central institutions feed the tourism sector. These are the Botswana National Ecotourism Strategy and the Wildlife Conservation Policy of 1986. A combination of these four institutions, the Tribal Land Act and other subsidiary institutions in the sector govern the harvest and use of natural resources, define the rights and user groups, and grant exclusive rights for commercial tourism activities. Specifically, the Tourism Policy objectives “were to be achieved within the limitations of [these] government policies” (Basupi et al., 2017b: 87). This section discusses the Tourism Act and the Tourism Policy. Other subsidiary policies are also discussed about the sector in this section.

5.6.1. The Tourism Act

The main aim of Botswana’s Tourism Act is to regulate the tourism industry for both its development and its wellbeing (the Republic of Botswana, 1992). Specifically, the Act makes provisions for;

- i. the licensing of tourist enterprises and set out the procedures in respect of the applications for licences, power inspection, [and] appeals;
- ii. defining categories of tourist enterprises;
- iii. the introduction of a grading system for tourist enterprises;
- iv. grading of tourist enterprises;
- v. the establishment of a Tourist Industry Licensing; and
- vi. empowering the Minister to Make regulations for the better carrying out of the provisions and purposes of the Act, such as the imposition of a levy on all tourist enterprises to assist the training of staff for such enterprises, and the establishment of a national advisory council whose purpose shall be to advise the Minister on all matters relating to the formulation, planning, development and administration of a policy relating to tourism (Republic of Botswana, 1992, 2000 and 2007).

There were observations and perceptions for the communities, such as those in the Okavango Delta, that prime tourism land was being “[handed] over to foreign companies, and that there were some attempts by concessionaires to exclude the public from exercising traditional rights ... for non-commercial purposes. These concessionaires act as if they have the right to exclude the general public” (Republic of Botswana, 2002: 43). The government, through the Tourism Act, aims to distribute the concessions widely to dissuade monopoly and other unfair business practices. Despite the objectives, the 2002 Revised Land Policy highlighted that,

“There is a lack of transparency concerning the terms and conditions of the leases, which are treated as confidential documents. Transfers of control over concessions, whether by purchase, through fronting or the letting of management contracts are not subject to scrutiny by the proper authorities or the public. Few concessionaires are meeting the terms and conditions of their leases. These conditions are not being enforced, and the proper authorities are not inspecting the concessions sufficiently often or thoroughly” (Republic of Botswana, 2002: 44).

The Land Policy Review recommended an array of possible redress mechanisms to tackle problems related to land tenure identified in the leasing of land to the tourism industry. One of the proposed mechanisms is to promote transparency in the leasing processes through opening the process to public scrutiny by making all leases of public land public documents (the Republic of Botswana, 2002). In 2006, the tourism regulations were revised, and certain tourist enterprises were reserved for either citizen of Botswana or companies wholly owned by citizens (the Republic of Botswana, 2006; te Velde and Cali, 2007). The enterprises include those in transportation, *mekoro* operations, guesthouses, motorboat safaris, mobile safaris and caravan sites (the Republic of Botswana, 2006; te Velde and Cali, 2007). However, the move is criticised mainly for going against the General Agreement on Trade in Services (GATS) of the World Trade Organisation (WTO) (te Velde and Cali, 2007).

Currently, the mandate of grading and classification of tourist enterprises is performed by Botswana Tourism Organisation (BTO). The mission of BTO is to “develop Botswana into a unique preferred tourism destination of choice in order to increase the sector’s contribution to the nation’s economic growth, through the active participation of the local and international

communities for the sustainable utilisation of tourism resources” (BTO, 2018). It is aligned with the country’s commitment to improving sectoral tourism growth through local participation.

5.6.2. The Tourism Policy

Before 1990, the tourism sector was ignored mainly (the Republic of Botswana, 2003). After reaching the realisation that the tourism sector was not making as many profits as anticipated, the government of Botswana enacted the Tourism Policy, Government Paper No. 2 of 1990. The main aim of the Policy is “to obtain, on a sustainable basis and within the carrying capacity limits, the greatest possible net social and economic benefits for Botswana from their tourism resources, scenic beauty, wildlife and unique ecological, geological and characteristics” (the Republic of Botswana, 1990). In addition to promoting sustainable tourism and the participation of Botswana in the management and ownership of tourism enterprises, the other specific objectives of the Policy are to;

- i. Increase foreign exchange earnings and government revenue;
- ii. Generate employment, mainly in rural areas;
- iii. Raise income in rural areas in order to reduce urban drift;
- iv. Generally, promote rural development and stimulate the provision of other services in remote areas of the country;
- v. Improve the quality of national life by providing educational and recreational opportunities; and
- vi. Project a favourable national image to the outside world (Republic of Botswana, 1990: 26-28).

The emphasis on rural livelihoods and development embodies the country’s commitment to promoting direct and indirect benefits of tourism in local communities (the Republic of Botswana, 2000). It can be argued that the Policy, to a certain degree, acknowledges the potential conflicts between tourism and rural livelihoods, and the threat posed by such conflicts on natural resources. In such a case, the decline in the natural resources conservation efforts by communities is inevitable. Despite the emphasis on the need to promote the benefits of tourism in local communities, some studies have established that Botswana’s tourism sector is an enclave

in nature, characterised by weak linkages with local communities and the domestic economy (see Mbaiwa, 2011; Stone, 2014; Stone et al., 2017).

The Land Policy of 2015 has specific provisions for the tourism sector. The Policy acknowledges that in regions such as the Okavango Delta, substantial land use dynamics have emerged over the years (the Republic of Botswana, 2015). Therefore, contemporary land uses such as game farming and various forms of tourism need to be acknowledged, while suitable responses are crafted to address the inherent and emergent land use needs. In order to respond to these needs, the Policy states that “the whole country will be declared a planning area. Thus the provisions of the Town and Country Planning Act will apply to all land in Botswana” (the Republic of Botswana, 2015). The main aim of the Town and Country Planning Act is to,

“Make provision for the orderly and progressive development of land in both Urban and rural areas and to preserve and improve the amenities thereof; for the grant of permission to develop land and for other powers of control over the use of land; and for purposes ancillary to or connected with the matters aforesaid” (Republic of Botswana, 1980).

One important factor to consider in changing the institutional land use management landscape is to calculate the impacts of such proposed institutional shifts on various stakeholders. The implications of such a move are yet to be known. While the whole country could greatly benefit from planning, the success of the exercise is arguably dependent on the country’s capacity. Therefore, there is a need to carry out the planning about such factors as the urgency of need as well as intensity and prevalence of land use conflicts, among other factors. AfDB (2016: 16) proposes that,

“The overwhelming level of tourism in the Tuli Block area, Chobe and in parts of the [Okavango Delta] region necessitates adherence to planning standards to safeguard the natural resources that are essential for tourism there. Consultations are already happening in these areas to eventually declare them as planning areas.”

To promote the protection of the environmental integrity and reduce biodiversity degradation, the government of Botswana has pursued low-volume-high-cost tourism approach. This

approach is elucidated in the Botswana Tourism Master Plan (2000) and the NES (2002). The Botswana Tourism Master Plan aims to generate employment for rural communities, strengthen the linkages of tourism with the broader economy, enhance government revenues, increase foreign exchange earnings, and improve the overall quality of life of the population through the provision of recreational opportunities (the Republic of Botswana, 2000). It proposes four critical strategic areas necessary for addressing its objectives. These strategic areas include; product diversification, community participation, public-private partnerships, and ecological and economic sustainability (the Republic of Botswana, 2000). However, the Plan lacks practical feasibility (Leechor and Fabricius, 2009). It lacks operational parameters and guidelines for implementation.

Equally, as discussed in Chapter 2 of this thesis, the NES aims to promote tourism that sustains environmental sustainability while improving the financial development of communities. Its overall goal is to “create an environment in which *all* elements of tourism development planning and management facilitate, promote and *reward* adherence to the key ‘principles’ of ecotourism by all of those involved in the tourism industry” (Stevens and Jansen, 2002: iii). However, the NES has not been designed to address the sector’s development issues (Stevens and Jansen, 2002).

The following subsection analyses tourism sector institutions discussed and other subsidiary policies using the frameworks discussed in Chapters 2 and 3.

5.6.3. Analysis of Tourism Sector Institutions

Generally, in Botswana, the two central tourism sector institutions need to be revised and aligned with contemporary land use needs, the growth of the tourism industry globally and new technologies used in the global tourism industry. Leechor and Fabricius (2009: 32) argue that the institutions “do not fit seamlessly into a focused, competitive strategy that provides the basis, unique positioning and critical requirements as cornerstones of winning, the sustainable tourism industry in Botswana”. As a result, the window of opportunity to benefit from the comparative

advantage of Botswana and the Okavango Delta as tourist destinations is missed. This section provides an analysis of tourism sector institutions from the sustainable livelihoods approach and through an institutional lens of complexities.

5.6.3.1. Ecotourism and sustainable livelihoods

It is argued that there are two forms of tourism functioning parallel to each other in Botswana, namely; enclave tourism and ecotourism (Mbaiwa, 2005 and 2008). Enclave tourism is defined as a form of tourism that is often found in rural areas, wherein the facilities used and their corresponding locations are divergent to the needs of local communities (Ceballos-Lascurain, 1996; Mbaiwa, 2008). Their divergence implies that local communities do not afford the services offered. Moreover, enclave tourism is characterised by minimal linkages with the host economy (Ceballos-Lascurain, 1996; Mbaiwa, 2008). In the Okavango Delta, enclave tourism is “well developed” (Mbaiwa, 2008: 207). The tourism industry in the region is dominated by foreign operators, practitioners and investors. As argued by Mbaiwa (2003: 458), tourism facilities in the Okavango Delta region are “characterised by foreign ownership and are designed to meet the needs and interests of foreign tourists”.

Ecotourism is defined regarding the NES, and it is implemented through CBNRM projects in Botswana and the Okavango Region. According to Mbaiwa (2008 and 2015), in general, the adoption of ecotourism in the country has contributed to rural social capital. Ecotourism activities are one of the most popular activities in villages with CBOs and community trusts. They have enabled communities to participate meaningfully in, and benefit from, the growing tourism industry (Mbaiwa, 2008, 2011 and 2015). However, in the Okavango Delta, ecotourism has provided mixed results (Mbaiwa, 2008, 2011 and 2015).

The positive outcomes of ecotourism range from provision of land and related natural resources to local communities for ecotourism purposes, increase in interest of local communities in tourism activities, employment creation in rural areas, financial benefits for participating

communities and overall increase in conservation (Mbaiwa, 2008, 2011 and 2015; Snyman, 2014). These benefits contribute positively towards rural development and rural livelihoods. However, the distribution of the benefits is both skewed and limited (Snyman, 2014). Other challenges are;

- Competition from enclave tourism;
- Lack of marketing and entrepreneurship skills among local communities;
- Lack of reinvestment of the funds generated by ecotourism;
- Mismanagement of the funds generated by ecotourism; and
- Lack of a fair and equitable distribution of the benefits from ecotourism (Mbaiwa, 2008: 216).

In the most areas within the Okavango Delta, land allocated to rural communities for ecotourism is either adjacent to, or near, land allocated on concession to operators who practice enclave tourism (Mbaiwa, 2005 and 2008). As a result, community tourism projects compete with predominantly “foreign-owned and well developed” (Mbaiwa, 2008: 216) tourist enterprises. Community tourism projects are innately at a disadvantage, and their sustainability is compromised. The general lack of marketing and entrepreneurship skills among local communities further tilts the competition scale against the favour of community tourism projects. There is, therefore, a need to address challenges faced by ecotourism projects in order to improve their contribution to rural development, ecological and environmental sustainability and to sustainable rural livelihoods.

5.6.3.2. Tourism as a complex system

Over the years, there has been an increasing interest in complexity analysis approach as a framework for understanding social and economic systems (Berkes et al., 2003; Corson and Aziz-Alaoui, 2009; Audouin et al., 2013). McFallan et al. (2011: 30) define a complex system as a “system that shows emergence behaviour that is more than a sum of the parts of the system alone”. In this context, the concept of ‘emergence’ describes “a system that portrays properties such as rich, dynamic and non-linear interactions that often provide output known as feedback” (Madigele, 2015: 39). Therefore, a complex system exhibits manifestation of various nascent

properties that cannot be merely defined from the behaviour of its component. The interdependencies that characterise the system contribute to the manifestation of emergent properties.

Tourism, by virtue of operating in an interconnected and interdependent system, is arguably a complex system. It is portrayed by complex social, cultural and ecological dynamics and processes, and it cuts across several sectors of the economy. Therefore, tourism sector institutions are faced with complex natural resource limits that are not necessarily a product of the sector itself. The complexity of the sector necessitates the development of institutions that position tourism as a product of the whole economy, as opposed to governing the sector as a subset of the whole. For example, the imposition of the safari hunting ban in 2014 disregards the position of Botswana within the region and internationally regarding the synergies between rural development and wildlife conservation. It is also inconsistent with the Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement of 1999. The SADC Protocol establishes a common framework for conservation and sustainable use of wildlife resources with a general intention of promoting the participatory approach and decentralisation, the creation of harmonised transboundary management of wildlife resources and promotion of benefits accrued by communities from wildlife resources (SADC, 1999). Similarly, the move to 'exclude' foreigner-owned enterprises from certain business activities as enshrined by the 2006 tourism regulations undermines the country's position as a signatory of GATS.

The tourism sector extends beyond the country's borders. It operates within a global arena with the land, wildlife and other natural resources issues, protocols and institutions. This prompts new thinking about successful resource management strategies as well as sustainable resource use. It necessitates approaching institutional design in the sector with a global outlook. However, the institutions also need to address the complexities and power dynamics and differentials at the local level.

5.7. Chapter summary

This chapter analysed the institutions influencing the existence and the relationship between tourism and agriculture in Botswana, with a bias to those operational in the Okavango Delta. In pre-colonial Botswana, land resources were managed through customary law. The *kgotla* and *bogosi* were central in the allocation of land resources for predominantly agricultural and residential uses. The open-access system for grazing prevailed during this period. The concerns about overgrazing, degradation and deforestation were limited, if not non-existent. During the colonial period, although the powers and roles of *dikgosi* were reduced, the colonisers appreciated and acknowledged the role of *bogosi* in the decision-making and information dissemination settings of the country. The British merged the traditional or informal institutions with colonial institutions.

Post-independence, the institutional framework governing the country's land resources is a combination of conventional and customary laws. The common law reflects Botswana's longstanding principles of customary law. Therefore, there is an interactive relation between formal and informal institutions in the country. The chapter also demonstrates that land institutions and their revisions in Botswana were undertaken to increase agricultural activity, conserve wildlife and other natural resources and to improve the benefits accrued by communities from natural resources. They were not intended to redistribute land resources as it had been the case in some other southern African countries.

Despite the generally good intentions of land management institutions and the accommodative land tenure systems that aim to contribute to good land use management, the reality is land use issues are still marred with challenges. The chapter concludes that the changing institutional landscape of natural resources management imposed trade-offs between land uses, sustainability goals and ecosystem services. The vulnerable groups such as small-scale farmers and rural communities adjacent to conservation areas have been displaced, and their livelihoods have been negatively affected. The institutions oscillate between promoting coexistence and

igniting conflicts between agrarian communities and contemporary land uses, primarily conservation and tourism.

CHAPTER 6

RESULTS AND DISCUSSION: THE CURRENT ECONOMIC BENEFITS OF TOURISM TO LOCAL SUBSISTENCE FARMERS IN THE RURAL OKAVANGO DELTA

“They say nothing concerning the bad effects of high profits. They are silent with regard to the pernicious effects of their own gains. They complain only of those of other people.”

— Adam Smith

6.1. Introduction

Chapter 4 provided a detailed description of the survey methods. This chapter discusses and analyses the results that were obtained from household surveys that were conducted in four villages in the Okavango Delta from the 31st July 2018 to 14th August 2018. It sets off by describing the demographic and socio-economic details of the respondents. The chapter then addresses the fourth specific objective by determining the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta.

In addition to using summations and averages to determine the current economic benefits of tourism, correlations between the demographic and socio-economic features of the respondents and the indicators of economic benefits were conducted to determine the strength and direction of the relationships. This is important for drawing inference on how these features impact on the participation of local subsistence farming households in the tourism sector. The *t*-tests were used to compare the means of independent groups, namely Shorobe, Shakawe, Gumare and Matsaudi, in order to determine whether there is statistical evidence that the associated population means are significantly different. At $p > 0.05$, there are no significant statistical variations between farmers' characteristics in the four study sites. Therefore, this study used the four villages as a single cohort.

6.2. Demographic and Socio-economic Profile of the Respondents

This section discusses the demographic and socio-economic features of the respondents. The data gathered regarding the characteristics of respondents constituted of gender, age, ethnicity, highest education level attained, employment status of the household head, household size and sources of household income. The description of the respondents was enriched by drawing some inferences from the sample.

6.2.1. Gender

The majority of the respondents in Matsaudi (19.8%) and Shorobe (25.9%) were males. In total, the majority (52.5%) of the respondents in all of the study areas were male, with a standard deviation of 0.501. Nonetheless, there is a good representation of both gender groups in the sample. The results are summarised in Table 6.1 below.

Table 6.1: Gender of the respondents

		Gumare	Matsaudi	Shakawe	Shorobe	Total
Gender* (%)	Male	27.6	19.8	26.7	25.9	52.5
	Female	41.9	6.7	39.0	12.4	47.5
	Total					100

*Gender (0= Male, 1= Female). Mean= 0.48. Median= 1. Standard deviation = 0.501

The Pearson Chi-Square (χ^2) test of independence was used to determine if there is a significant relationship between gender of the household head and direct formal employment in the tourism sector. The null hypothesis of the test assumed that there is no association between the two variables. At $\chi^2 = 1.172$ and $p = 0.591 > 0.05$, no association was found between gender and direct formal employment in the tourism sector. Therefore, the null hypothesis is accepted.

6.2.2. Age

The youngest household head was 21 years old, and the oldest was aged 90 as indicated in Table 6.2. Only 22.2% of the respondents were aged between 21 and 30 years, and 18.1% of the respondents were aged 55 and older. The average age of the household heads was 43 years with a standard deviation of 15.194. A χ^2 test of independence was used to determine if there is a significant relationship between the age of the household head and direct formal employment in the tourism sector. The results ($\chi^2 = 58.268$; $p = 0.226 > 0.05$) imply that there is a statistically insignificant relationship between the age of the respondent and formal employment in tourism-related establishments.

Similarly, a χ^2 test of independence was used to determine if there is a significant relationship between the age of the household head and informal employment in the tourism sector. The results ($\chi^2 = 246.866$; $p = 0.000 < 0.05$) imply that there is a statistically significant relationship between the age of the respondent and informal employment in tourism-related establishments.

Table 6.2: Age of the respondents

Descriptive statistics	Value
N	221
Minimum	21
Maximum	90
Mean	43.17
Std. deviation	15.194
Std. Error	0.164
Pearson Chi-Square (Formal employment)	58.268 ^a
Asymptotic Significance (2-sided) (Formal employment)	0.226
Pearson Chi-Square (Informal employment)	246.866 ^b
Asymptotic Significance (2-sided) (Informal employment)	0.000
a. 93 cells (89.4%) have expected count less than 5. The minimum expected count is .09.	
b. 203 cells (99.5%) have expected count less than 5. The minimum expected count is .01.	

However, the χ^2 test only provides information about whether the variables are independent or dependent. The test does not provide details about the direction of dependence between the variables. Therefore, a non-parametric test, specifically the Spearman's correlation, was used to measure the strength of association between two variables. The results ($r = 0.904$; $p = 0.013 < 0.05$) show that there is a solid direct relationship between age of the household head and informal employment in the tourism sector. The informal employment activities included the sale of handcrafts, pottery, grass and reeds, transport services, renting and the sale of food and services. Arguably, the powerful positive association can be explained by the inability and the lack of interest of the youth in learning and making a living from traditional crafts. In respect to this, only 19.5% of the respondents that are informally employed in the tourism sector ($n = 87$) are aged between 21 and 40 years. Furthermore, only 10.3% of the respondents aged between 21 and 40 years and employed informally in tourism-related businesses are involved in the sale of handicrafts.

6.2.3. Ethnicity

Thirty eight point nine per cent (38.9%) of the respondents belong to the Wayeyi tribal group. As illustrated in Table 6.3, the majority of the respondents (92, $n = 221$) belong to other tribal groups, such as Hambukushu (48.9%), Dxeriku (37.8%) and Xanekwe (16.3%), among other groups. It has been established that the indigenous inhabitants of the Okavango Delta are the Hambukushu, Dxeriku, Wayeyi, Bugakwe and Xanekwe (Bock, 1998). The Wayeyi, Hambukushu and Dxeriku are Bantu tribes (Bock, 1998). The three groups traditionally practised mixed economies, which encompassed pastoralism, ploughing, fishing, hunting and gathering of wild plant foods (Bock, 1998). The Bugakwe and Xanekwe belong to the San or Khoisan or Basarwa group, who traditionally relied on hunting and gathering of wild plant foods (Bock, 1998; Mbaiwa et al., 2008). The Khoisan tribal group are believed to be the oldest inhabitants of the Okavango Basin (Mbaiwa et al., 2008).

Table 6.3: The ethnic background of the respondents

		Ethnicity				Total
		Ovaherero	Wayei	Batawana	Other	
Village	Gumare	5	54	1	16	76
	Matsaudi	4	8	14	4	30
	Shakawe	0	8	0	64	72
	Shorobe	3	16	16	8	43
Total		12	86	31	92	221

According to Tlou (1985), the Batawana tribal group immigrated to the Okavango Delta region in the 19th century. One of the most notable parts of history about their arrival is the shift of land use from predominately both arable farming and hunter-gatherer economy to a significant pastoral farming economy (Mbaiwa et al., 2008). Pastoralism was further practised and promoted by the Ovaherero tribal group that arrived in the Okavango Delta between the years 1904 and 1905 (Mbaiwa et al., 2008).

After the enactment of the Tribal Land Act and other land use institutions, the access to natural resources by indigenous and other tribal groups in the region has been restricted (Kgathi et al., 2004). They are denied access to harvest veld products, such as thatching grass, from areas zoned as game reserves without permits. Moreover, the erection of veterinary fences has restricted movement of people and their livestock, resulting in reduced household livelihoods (Darkoh and Mbaiwa, 2002; Kgathi et al., 2004). Mbaiwa et al. (2008: 189 – 190) argue that,

“The erection of veterinary fences is another modern instrument that has come to deny local groups access to resource use in other parts of the Okavango Delta... The erection of veterinary fences has created resource access boundaries that prevented communities in the Okavango Delta from accessing economic activities to sustain their livelihoods... For example, fences create barriers to the free movement of communities in pursuit of traditional sources of livelihood such as veldt products.”

6.2.4. Education

Figure 6.1 indicates that the majority of the respondents attained up to secondary education. This implies that the majority of the household heads have had at most 12 years of schooling. The results reveal that 19.5% of the respondents have not been to school, while another 19.5% have a maximum of primary education. Therefore, there are generally low literacy levels in the study areas. These findings are consistent with those of Statistics Botswana (2015), wherein it was established that a significant proportion of the population has never attended school in the Okavango Delta. Kgathi et al. (2007) have also noted low levels of literacy in the study areas. As argued Mogomotsi et al. (2018), in Botswana, the formal schooling system is not designed to serve sparsely populated areas adequately.

Within the sustainable livelihoods framework, education is a component of human capital. It improves the quality of labour resources available to households to enable their pursuit of various livelihood strategies. Education also improves the chances of formal employability, thereby allowing the households to take advantage of a broader pool of economic opportunities. In this study, 'education' was not confined to the years of formal schooling only. Other forms of learning and training were classified as "Other" (Figure 6.1). This follows Bateson's (1994: 196) argument that;

"Trying to understand learning by studying schooling is rather like trying to understand sexuality by studying bordellos. Certainly, schooling is part of the spectrum of learning in human lives, but it is not the model for all learning, only one of the byways. Learning and teaching are both fundamental for human adaptation, but not all societies segregate them from the flow of life into institutional boxes."

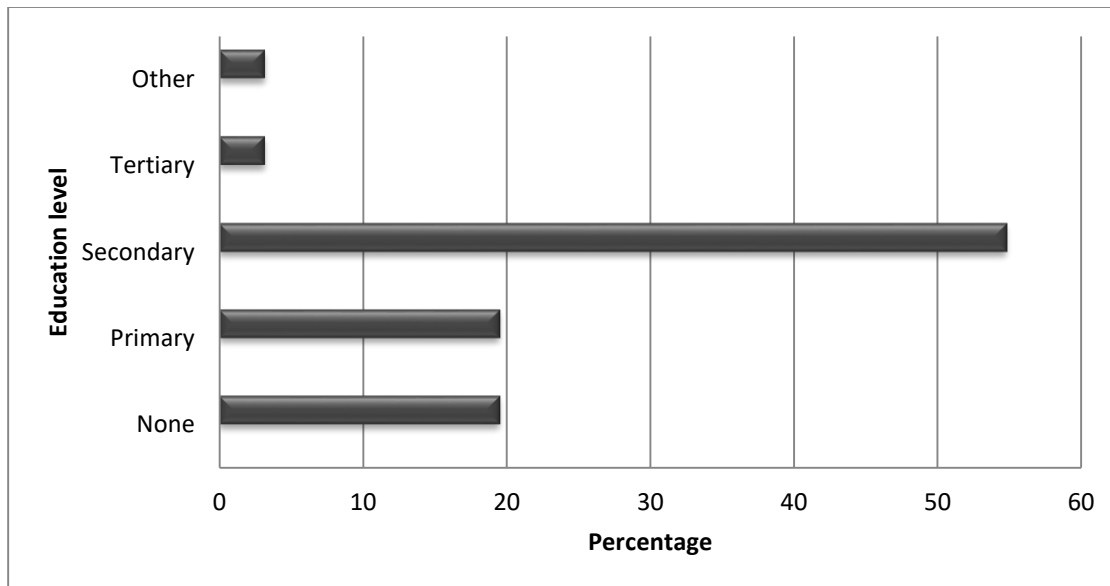


Figure 6.1: Highest education level attained

In this study, 3.1% of the respondents had attained other forms of learning such as training workshops and informal education. This study acknowledges the value contributed by these forms of learning to human capital. Through these forms of learning, the participants acquire skills and knowledge, which are a component of human capital.

χ^2 tests were used to determine if there is a significant relationship between the levels of education attained by the household heads and both formal and informal employment in the tourism sector. The results are summarised in Table 6.4. As illustrated in Table 6.4, there is a statistically insignificant relationship between the education level attained by the household head and formal employment in tourism-related establishments ($\chi^2 = 8.546$; $p = 0.073 > 0.05$). However, there is a statistically significant relationship between the education level attained by the household head and informal employment in tourism-related establishments ($\chi^2 = 28.758$; $p = 0.017 < 0.05$).

Table 6.4: Chi-square test results for education and employment in the tourism sector

	Value	df	Asymptotic Significance (2-sided)
FORMAL EMPLOYMENT			
Pearson Chi-Square	8.546 ^a	4	.073
Likelihood Ratio	10.293	4	.036
N of Valid Cases	19		
INFORMAL EMPLOYMENT			
Pearson Chi-Square	28.758 ^b	15	.017
Likelihood Ratio	27.004	15	.029
N of Valid Cases	87		
a. 4 cells (40.0%) have expected count less than five. The minimum expected count is .60.			
b. 19 cells (79.2%) have expected count less than five. The minimum expected count is .03.			

A Spearman's rho was calculated in order to measure the strength of association education level attained by the household head and informal employment in tourism-related establishments. At $r = -0.961$ and $p = 0.005 < 0.05$, there is a very strong negative relationship between education level attained by the household head and informal employment in tourism-related establishments. Therefore, low levels of education may result in higher chances of informal and self-employment in the tourism sector. The creation of handcrafts and the sale of natural resources such as grass and reeds do not require formal training and education. Those involved in the activities mostly require social learning and indigenous knowledge.

6.2.4. Employment status

In all of the four study areas, the minority (17.7%) of the respondents were formally employed in the tourism sector and other various sectors of the economy. Almost 43% of the sampled population were classified as unemployed. Gumare and Matsaudi had the highest numbers of unemployed people than the other two study sites (Figure 6.2). Statistics Botswana (2015)

defines the unemployed population as persons who are actively searching for employment but are unable to find work.

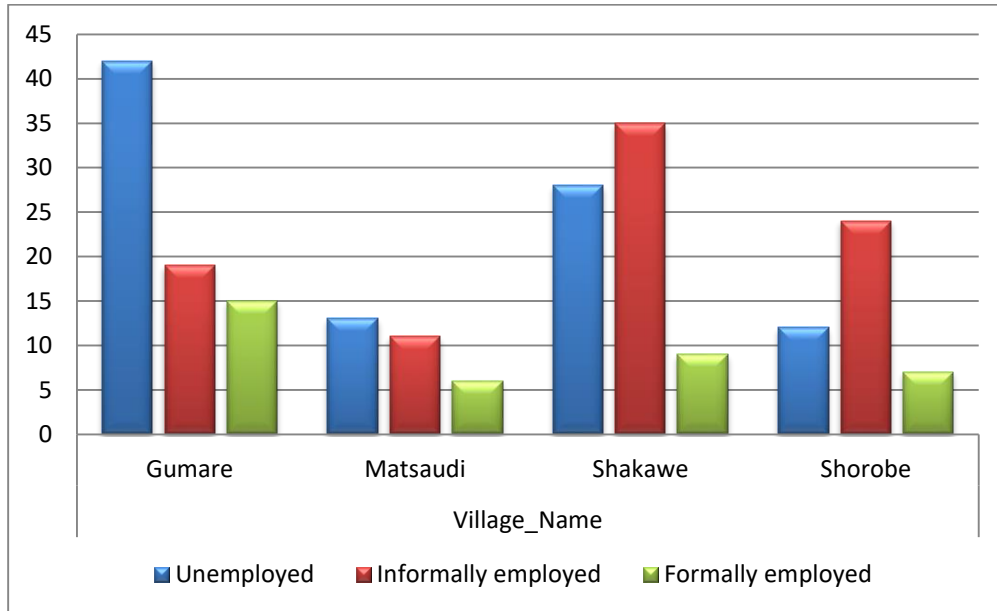


Figure 6.2: Employment status of the household heads

In order to obtain the unemployment rates in this study, people aged 61 years and above were excluded from the labour force. This age group was considered to be economically inactive. In Botswana, early retirement starts at 45 years, but the normal retirement age is 60 (Botswana Public Officers Pension Fund, 2015). In this study, the labour force was defined as the economically active population and was derived through the summation of a number of persons employed and the number of persons unemployed. This definition is consistent with the one used by the International Labour Organisation (ILO, 2015). Therefore, the unemployment rate was calculated by expressing the number of unemployed persons as a percentage of the total number of persons in the labour force.

The unemployment rate determined in this study was 26.2%. The average unemployment rate in the Okavango Delta is estimated to be 26.9%, which is the highest in the country (Statistics Botswana, 2017). Therefore, the rate obtained in this study is almost equal to the one determined

by Statistics Botswana. However, the unemployment rate obtained in the study areas is higher than the national average of 17.7% (Statistics Botswana, 2017).

The unemployment rate is crucial as it reflects the ability, or lack thereof, of the local and national economy to generate employment for those persons classified as economically active. The rate is an indicator of whether or not the economy can absorb the labour force efficiently and effectively (ILO, 2015). By implication, the high unemployment rate in study areas reflects that the local economy of the Okavango Delta is arguably struggling to absorb the labour force available in the region effectively.

6.2.5. Household size and sources of livelihood

The highest number of people in a household recorded in this study was 15, while the minimum was one person in a household (Table 6.5). The average number of household members in this study is almost six people per household, which is slightly higher than the average of five people per household observed by Statistics Botswana (2011). Within both the sustainable livelihood framework and the SLFT, the household size is a component of human capital (Shen et al., 2008; Shen, 2009; Wang et al., 2017). It is often hypothesised that larger households have a wider pool of human capital resources to engage in both farming and non-farming activities (Sultana and Lu, 2017; Wang et al., 2017).

Table 6.5: Household size and sources of income

	Household size	Number of members with cash income
N	221	221
Minimum	1	0
Maximum	15	4
Mean	6.76	1.26
Std. Deviation	2.831	0.821
Variance	8.013	0.674
Skewness	0.317	0.833
Std. Error	0.164	0.164

As illustrated in Table 6.5, an average of at least one person in a household had cash income in the study areas. In this study, cash income included salaries or wages from formal employment, earnings or income derived from the sale of natural resources, handcrafts, food and other products to tourists and tourism-related establishments (TRAs), as well as earnings from other informal employment activities (NTRAs). It also included cash received from government welfare programmes as NTRA. As illustrated in Table 6.5, some households reported that they do not receive cash at all. The maximum number of household members with cash income was four. Some households in the study obtained cash income from a combination of TRAs and NTRAs in order to achieve their livelihood goals. Using a combination of activities is argued to be one of the effective ways of reducing the households' levels of vulnerabilities within both the generally sustainable livelihoods framework and the SLFT (Shen et al., 2008; Shen, 2009; Wang et al., 2017). Farming households "no longer rely on traditional agriculture only, but transform to a variety of livelihood strategies, such as employment in the commercial and service industries, and migration" (Wang et al., 2017: 2290).

In addition to cash income from TRAs and NTRAs, this study considered ownership of livestock and *masimo* as livelihood asset bases necessary for improving the households' welfare. All (100%) of the respondents were involved in at least one form of agricultural activities. Seventy one point

nine per cent (71.9%) of the respondents owned *masimo*. Only households who actively plough their fields were included in the computation of ownership of *masimo*. Similarly, 59.7% of the respondents own livestock. It was estimated that at least 52% of the respondents were involved in both arable and livestock farming.

Arntzen (2005: 14) argues that in the Okavango Delta, farming is one of the mainland uses for “achieving better and secure livelihoods”. However, arable farming often yields low productivity in the Okavango Delta compared to the national average (Arntzen, 2005). Furthermore, in the Delta, the distribution of livestock, especially livestock, has “become more skewed, implying that fewer livelihoods benefits from livestock farming” (Arntzen, 2005: 17). These factors arguably limit the amount of livestock and other agricultural output offered by the local subsistence farmers for sale to the tourism sector. Therefore, the constraints in productivity imply a reduction in surplus output for sale.

The following section analyses the economic benefits of tourism to local subsistence farmers. The benefits range from wages from formal employment, earnings from informal employment and the revenue for the sale of livestock, livestock products and other farm output.

6.3. The Economic Benefits of Tourism to Local Subsistence Farmers

As highlighted in both Chapters 1 and 3 of this thesis, agritourism is conceptualised as a form of tourism that contributes positively to the socio-economic development of rural communities within which it is situated. It also promotes positive interactions between the local traditional stakeholders and tourists without compromising the sustainability of natural resources and social values. Equally, ecotourism is considered as a form of tourism that positive impacts on rural communities (Telfer and Sharpley, 2008; Snyman, 2014). It is viewed as a potential tool for conservation and broader socio-economic welfare of communities (Snyman, 2014).

This section analyses the benefits of tourism to households within communities in the Okavango Delta. The social aspects are beyond the scope of this chapter. For ease of the flow of the argument, the analysis is classified into three main subsections. The first subsection analyses the economic benefits associated with employment. The second subsection analyses the economic benefits derived from the sale of agricultural output. The last subsection analyses the economic benefits using econometric models.

6.3.1. Employment

According to Mitchell and Ashley (2010), one of the principal arguments for sustainable tourism and its corresponding forms, such as ecotourism, agritourism, CBT and pro-poor tourism, is that it serves as a source of rural employment, especially in areas where few economic opportunities exist for local communities. It also offers a market for craft makers, grass sellers and casual labourers, among others, who earn casual earnings. Therefore, the employment opportunities in the tourism sector range from formal and informal employment. The results for formal employment economic benefits are analysed in the following subsection.

6.3.1.1. Formal employment for household heads and members of the household

In this study, formal employment is conceptualised as a form of employment that generates regular wages or salaries for the participants. Within the parameters of this description, only 8.6% of the household were formally employed in tourism-related establishments. Similarly, only 21.3% of the respondents reported that other members of the household were employed formally in the sector. Some households had up to three members, other than the head, employed in tourism-related establishments. For such members, the most common services they offer to the establishments are cleaning (53.2%), cooking (23.4%) and gatekeeping (10.6%). Only 2.1% of other family members are employed as managers.

The duration of employment for household heads ranged between 2 years and 14 years. Their jobs ranged from the manager (12%), cleaner (12%), cook and chefs (41%) and others. The results are summarised in Figure 6.3. The majority of those employed formally are in occupations that require semi-skilled personnel.

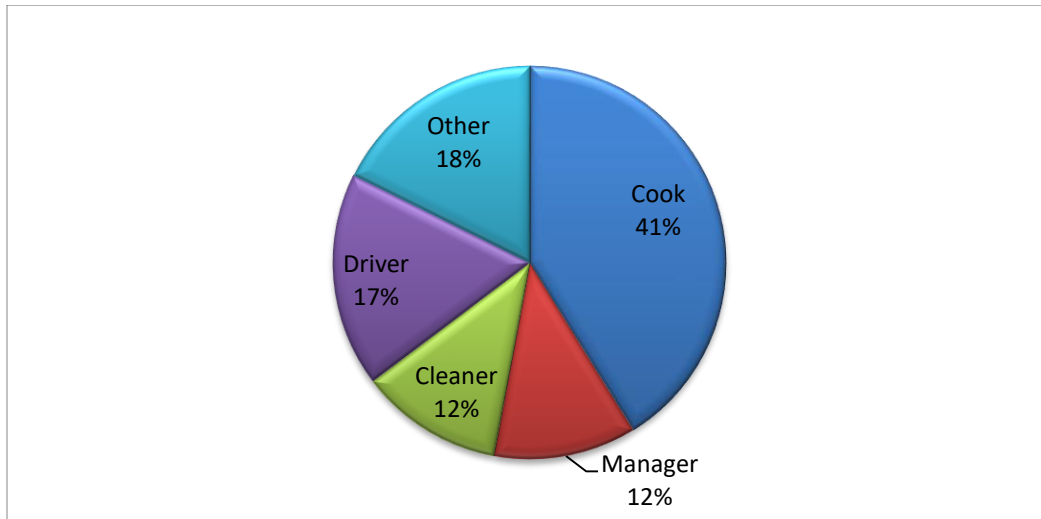


Figure 6.3: Formal employment by occupation for household heads

Rahman (2010) argues that the tourism industry often requires a higher proportion of unskilled and semi-skilled labour than other industries. This is primarily due to the fact that, often, the majority of personnel absorbed by the sector does not need formal training to get the job done (Burns and Holden, 1995). The sector depends mostly on periphery workers for washing, serving and cleaning. These activities earn low wages (Rahman, 2010). This argument is substantiated by the results of this study. The majority (64.7%) of the household heads formally employed in tourism-related establishment earned monthly salaries within the range of BWP 1501.00 to BWP 3500.00 as reflected in Figure 6.4. None of the household heads earned salaries above BWP 5501.00.

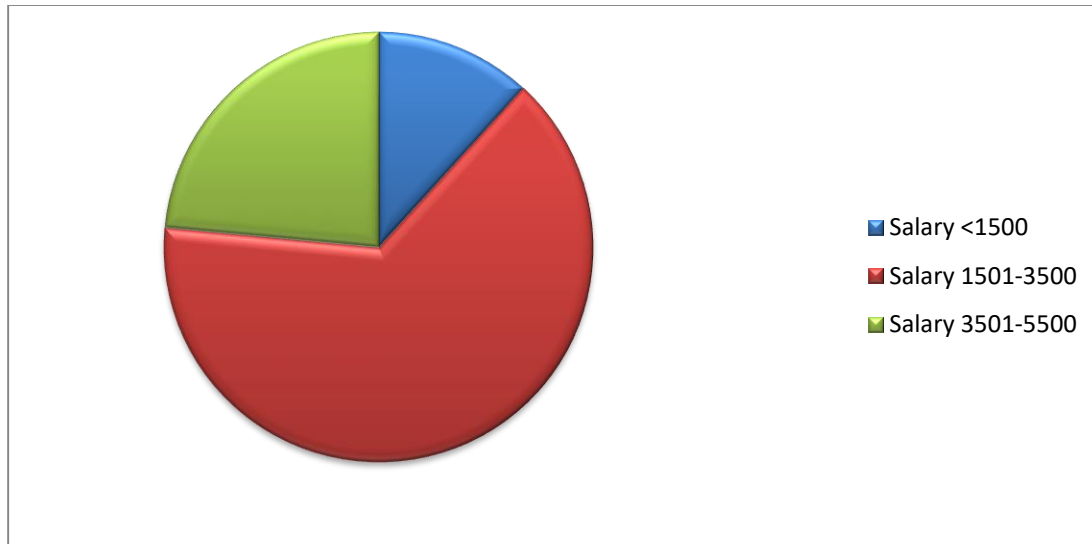


Figure 6.4: The salaries earned by household heads

Contrariwise, the majority (64.7%) of other household members employed formally in tourism-related establishments earned a salary less than BWP1500.00 per month. While the wages paid to other members of the household formally employed in tourism-related establishments predominantly fall within the lower range in this study, they exceed the threshold of BWP926.40² set as the minimum wage for the majority of services in Botswana (the Republic of Botswana, 2017). The wages also exceed the minimum wage of BWP700.00 payable to labour services in the agricultural sector (the Republic of Botswana, 2017). About this point, one of the respondents lamented,

“Although the cleaning services I offer to a lodge pay me P1300.00 per month, I am better off [compared to] those who are offering similar services to [private] homes and the government. I am a better slave. Your government says we deserve a mere P3.21 per hour. If this is not modern day slavery, then I do not know what it is. The lodges and camps are paying us peanuts, but at least they are more humane than your government.”

Manwa and Manwa (2014) argue that in Botswana, pro-poor tourism development and other variations of sustainable tourism have the potential of alleviating rural poverty through direct

² Calculated using the BWP5.79 per hour for a maximum of 8 hours recommended by the Employment Act, Cap 47:01. The calculation used a 5 days week and a 4 weeks month.

and formal employment creation. This is because the tourism industry is, by its nature, labour intensive. This labour-intensity feature enables the industry to employ the “disadvantaged members of the community with very little formal training” (Manwa and Manwa, 2014: 5698). The authors, however, caution that by being profit-making entities, tourism-related businesses are private sector enterprises controlled by market forces (Manwa and Manwa, 2014). Therefore, wages paid to workers are tied to both the profit-maximisation objective of the businesses as well as to market forces such as labour demand and supply.

While the focus of international organisations, such as UNWTO, is to promote tourism development that is pro-poor and creates jobs for the rural poor living on less than a dollar a day (UNWTO, 2014), such objectives are auxiliary for a tourism enterprise operating in a perfectly competitive setup. As argued by Scheyvens (2009: 91), the expectation that “tourism industry operators should have some ethical commitment to ensuring that their businesses contribute to local poverty alleviation” is a misconception. Nonetheless, the role played by the tourism-related establishments to formal employment creation, although minimal, contributes economically to the livelihoods of the participating households.

6.3.1.2. Informal employment opportunities

The tourism sector is a source of casual earnings from such NTRAs as the sale of goods and services to both tourism-related businesses and the tourists. The people who offer such goods and services in the study areas were classified as informally employed. They include grass and reed sellers, craft makers, traditional dance performers, builders, plumbers and others involved in the construction and maintenance of tourism-related business, sellers of food to tourists. The results reveal that only 39.4% of the respondents were informally employed in the tourism sector.

Only 4.6% of the respondents sell food products to tourists at strategic spots within and outside their villages (Figure 6.5). They also sell services, such as cleaning, to tourism-related businesses

on a seasonal basis. The latter observation finds support in Rahman's (2010) study, wherein it was argued that in Cox's Bazar, Bangladesh, employment in the tourism industry is predominantly seasonal or part-time, where services of the locals are needed during some parts of the year such as the peak season.

As illustrated in Figure 6.5, 20.7% of the respondents reported that they offer other products and services to the tourism-related business, such as selling grass, firewood and reeds (33.3%), traditional dancing at the establishments on a contractual basis during certain periods of the year (33.3%), among other services. The households are still dependent on natural resource harvesting for their livelihood. The respondents reported that they sell the raw materials, such as bundles of grass, reeds and palm leaves to tourism businesses. The tourism businesses use such materials for various purposes.

The majority (65.5%) of the respondents reported that they sell various handicrafts to tourism businesses and to the tourists who pass through their villages (Figure 6.5). The handicraft products include basket weaving, sleeping mats and woodcarving, among others. A study by Turpie et al. (2006: iv) established that an average of "276 000 poles, 150 000 bundles of reeds and 174 000 bundles of grass are harvested annually" in the Okavango Delta. For example, palm leaves are harvested and utilised for producing crafts by some respondents in this study. Turpie et al. (2006) determined that, on average, over 9000 bundles of palm leaves are harvested annually for producing baskets and other products.

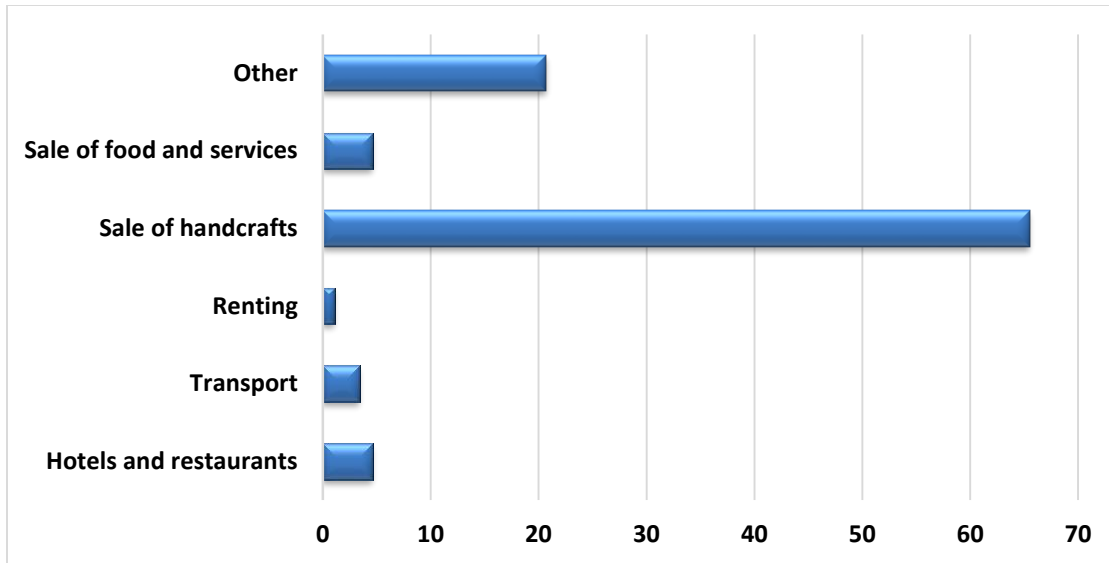


Figure 6.5: Informal employment opportunities

Fifty six point one per cent (56.1%) of those who are involved in the sale of handicrafts were males. A χ^2 test of independence was used to determine if there is a significant relationship between gender of the household head and informal employment in the tourism sector. At $\chi^2 = 10.496$ and $p = 0.021 < 0.05$, it is thus concluded that there is a significant statistical relationship between the gender of the household head and informal employment in the tourism sector. However, the relationship is weak as revealed by the Spearman's rho ($r = 0.28$; $p < 0.01$) in Table 6.6.

Table 6.6: Correlation between the gender of the household head and informal employment in the tourism sector

	Gender	
Informal employment	Correlation coefficient	.280**
	Sig. (2-tailed)	.009
	N	87

** . Correlation is significant at the 0.01 level (2-tailed)

Although weak, the positive relationship implied that there is a slightly high chance of men being informally employed in the informal sector. This is arguably due to their involvement in physical activities of thatching, building and harvesting reeds, among other activities. Furthermore, all of the 3.4% respondents offering transport services to tourism business on a part-time basis were males. The earnings from informal employment in tourism-related establishments range from less than BWP1500.00 to over BWP7501.00 (Table 6.7).

The majority (66.0%) of the respondents earn less than BWP1500.00. This finding has two main implications. First, the earnings fall below the global poverty datum line of US\$1.90 per day. Second, given the average household size of six members (Table 6.5), the per capita household earnings are even lower. A study by Mbaiwa (2005) has similar findings regarding generally low earnings from the tourism industry in the Okavango Delta. Accordingly, Mbaiwa (2005: 165) states that “62% of the junior workers in the tourism industry of the Okavango Delta were found to be paid salaries that range between P300 (US\$60) and P990 (US\$165) per month in 2001”.

Table 6.7: Monthly earning from informal employment in the tourism sector

	Frequency	Percentage
<1500	31	66.0
1501-3500	11	23.4
3501-7500	2	4.3
5501-7500	2	4.3
>7501	1	2.1
Total	47	100.0

In light of the results regarding the economic benefits of tourism to local subsistence farmers through employment opportunities, the following subsection makes concluding discussions about both formal and informal employment benefits.

6.3.1.2. Discussion of the economic benefits through employment

Employment creation opportunities by the tourism industry potentially contribute to the sustainable livelihoods of local and rural communities by creating a source of income, through either regular wages or casual earnings. Therefore, the industry has the potential to develop economic linkages with the local communities. In this context, the economic linkage is loosely defined as the consumption of local goods and services by the tourism businesses in order to meet their needs and those of the tourists. In this case, the service of interest is labour. The labour services analysed in this study are formal and informal.

The results of this study show that only 8.6% and 21.3% of the household heads and other members of the household, respectively, are formally employed in tourism-related establishments. The low rates of employment on a formal basis could be attributable to a myriad of factors. For instance, 26.3% of the respondents cited 'lack of education, skills and training' as one of the factors inhibiting the economic contribution of tourism to household livelihoods. The other factor that could be restricting the optimal economic linkages between tourism businesses and the local communities could be a mismatch in both the quality and quantity of labour resources required by the business and supplied by the local communities. In cases of low formal labour demand by tourism businesses, fewer formal labour opportunities are bound to exist for local communities. There is, therefore, a need to address this formal labour demand-supply mismatch through strategies, institutions and initiatives that empower local communities to be less reliant on formal employment opportunities of the tourism industries.

The proportion of the sample employed informally in the tourism sector (39.4%) is slightly higher than those employed formally. Considering the proportion of the labour force in the study areas, 39.4% is relatively low. The value implies that the sector absorbs and involves the locals in the provision of labour services on an occasional basis. Therefore, in some periods, those involved do not have earnings. The economic linkages generated by informal employment opportunities for local subsistence farmers are therefore mostly sporadic. MacLellan et al., (2000) argue that the few links between tourism and local sectors in developing countries are often characterised by a large informal economy that supplies labour, other services and products.

Previous studies in the Okavango Delta region have also established that the enclave nature of tourism in the Delta makes the quality and wages of jobs held to be skewed against the favour of the locals (see Mbaiwa 1999 and 2005). The locals are often hired into low-rank positions with low wages. In this study, 64.7% of the household heads formally employed in tourism-related establishments earned monthly salaries within the range of BWP1501.00 to BWP3500.00, while 66% of the respondents informally employed in the sector earn less than BWP1500.00 per month. As noted by Mbaiwa (2005: 165),

“In the Okavango Delta, the jobs occupied by local people in the tourism sector are mainly unskilled and attract low salaries. These jobs include manual labour and work as drivers, maids, cleaners, night watchmen, gatekeepers, and cooks.”

According to Healy (1994), the participation of the locals in tourism is primarily through employment. The local communities in developing countries rarely participate in business due to restrictive factors such as education and skills, high capital costs and other constraints (Healy, 1994). One of the ways of improving the participation of local communities in tourism is through linking the local economy to the tourism sector. In the Okavango Delta, farming is one of the widely practised activities. The following section analyses the economic benefits derived by local subsistence farmers through the sale of livestock and other agricultural output.

6.3.2. Sale of livestock and other agricultural output

Noting the low usage of local labour resources discussed in the previous section, there is a need to enhance the linkages between the tourism businesses and the local economy. Mshenga et al. (2010) argue that one of the ways of improving the economic benefits of tourism to local communities is through the enhancement to linkages between tourism and agriculture. In the Okavango Delta, small-scale and subsistence farming are widely practised.

This section analyses the economic benefits derived by local subsistence farmers through the sale of agricultural output to tourists and tourism-related businesses. The exclusion of sales of produce would have resulted in an under calculation of the economic benefits derived. The section is divided into two subsections. The first subsection discusses the results of the sale of agricultural produce to tourism-related businesses. The second subsection discusses the sale of livestock by local small-scale farmers to tourism-related establishments.

6.3.2.1. Sale of agricultural produce to tourism businesses

Only 10.9% of the respondents reported that they had sold agricultural produce to tourism-related businesses in the past three months. The results are summarised in Figure 6.6. One of the reasons cited by some of the respondents (50%; n = 24) is low productivity due to unfavourable climatic conditions, leading to low excess left for sale. Although studies such as ones by Fidzani et al. (1999) and Kgathi et al. (2007) have revealed that households often rank arable farming as the most critical livelihood activity, they also argue that the region is prone to drought, high temperatures and low rainfall levels. These unfavourable climatic conditions are situated within the vulnerability context of in the sustainable livelihoods framework.

The other reason for the lack of excess produce for sale given by 29.2% of the respondents is that diseases often attack their cattle, leading to mass deaths in some cases. This is classified as a shock within the sustainable livelihoods framework. Kgathi et al. (2007) buttress this point by stating that animal diseases are one of the common shocks in the Delta. The most common diseases in the region are cattle lung disease, and African animal trypanosomiasis and contagious bovine pleuropneumonia (Kgathi et al., 2007). In addition, the region is prone to foot and mouth disease outbreaks. Therefore, livestock is faced with the double burden of unfavourable climatic conditions and diseases in the study areas, leading to a low number of households to sell excess by-products of livestock as reflected in Figure 6.6 below.

A substantial majority (91.7%) of the respondents highlighted human-wildlife conflict as one of the main constraints of having excess agricultural produce for sale. The respondents reported

that elephants often raid their fields, destroying the fences in the process. The destroyed fences provide easy access into the fields by livestock. As stated by one of the respondents,

“We are trapped in the vicious cycle of having to mend the fences repeatedly. The elephants destroy the fences. Cattle, donkeys and goats get into the fields and continue the damage caused by elephants. We incur costs of replacing or repairing the fences. We plough again hoping to reap something to eat and sell. Then, the elephants destroy the fences again, making way for livestock to cause more damage to the crops. We repair the fences yet again. It is a never-ending cycle. However, the hope to get P100 from selling a few watermelons to buy candles keeps us ploughing. It is like chasing your tail. What other choice do we have?”

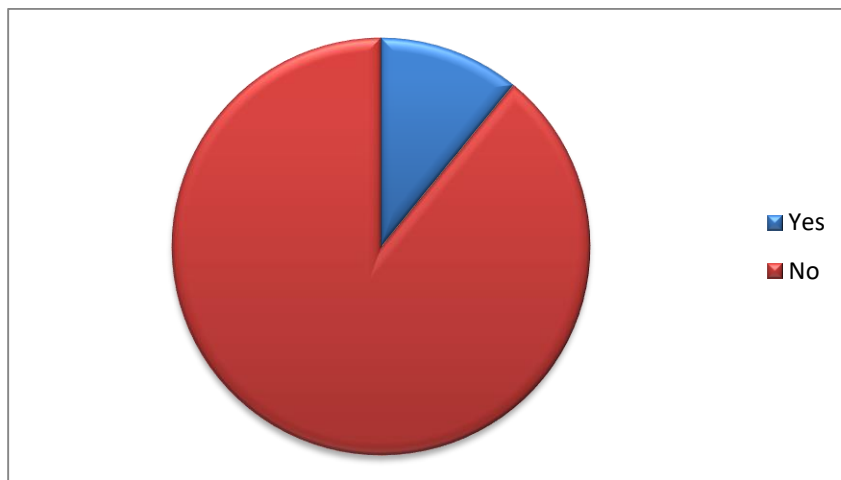


Figure 6.6: Sale of agricultural produce to tourism-related businesses

The majority (29.2%; n = 24) of the respondents sell dairy to tourism-related businesses (Figure 6.7). They sell mostly milk and sour milk. One of the interesting observations made in this study is that 100% of such respondents are employed formally in tourism-related businesses. One of the respondents noted that “selling agricultural produce is easier if one has ‘connections’ with tourism-related businesses”. A χ^2 test of association was used to test this hypothesis. Tests were done for formal employment of the household head and other members of the household. The results are summarised in Table 6.7. At $p = 0.002 < 0.005$ and $p = 0.000 < 0.005$ for household heads and member of the household, respectively, it can be argued that there is an association between employment in tourism-related establishments and sale of agricultural produce. Therefore, being employed in tourism-related businesses may improve the farmer’s chance of

selling agricultural produce to tourism-related businesses. However, correlation does not imply causation.

Table 6.7: Test for association between employment in the tourism industry and the sale of agricultural produce

	Value	df	Asymptotic Significance (2-sided)
Household head and sale of agricultural produce			
Pearson Chi-Square	9.704 ^a	1	.002
Continuity Correction ^b	8.128	1	.004
Likelihood Ratio	8.262	1	.004
Members of the households and sale of agricultural produce			
Pearson Chi-Square	28.622 ^c	1	.000
Continuity Correction ^d	24.644	1	.000
Likelihood Ratio	18.708	1	.000
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.10.			
b. Computed only for a 2x2 table			
c. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.06.			
d. Computed only for a 2x2 table			

About 25% of the respondents reported that they sell pumpkins, traditional squash, melons used for cooking (*lerotse*) and butternuts to tourism-related establishments. They perceive that the demand is due to the presence of traditional cuisine in the menus of some establishments. A study by Chatibura (2015) noted that *bogobe jwa lerotse* (pumpkin and sorghum) is one of the preferred Setswana cuisines by visitors at restaurant facilities. The types of pumpkins used in the cuisine are mostly sourced in locally and nationally. The nature of both the cuisine and the supply places the farmers favourably. They do not compete with imports. However, the supply is too low to influence any significant change to the menus of the tourism-related establishments, such as lodges, due to the low and inconsistent supply of the products. As argued by Mahachi-

Chatibura and Saayman (2015), irregularities and inconsistencies of supply were cited as some of the main reasons why some restaurants do not promote local cuisine in Botswana.

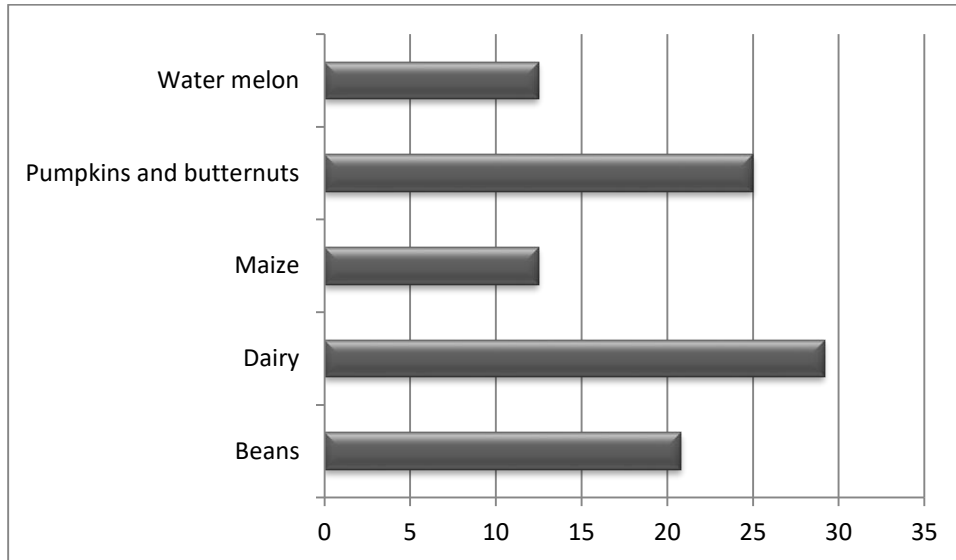


Figure 6.7: Type of produce sold to tourism-related businesses

Leechor and Fabricius (2004) argue that in Botswana, although it is difficult to conclude the economic benefits of the tourism sector and other sectors in the economy without a functional satellite accounting system, empirical data from interviews has revealed that a large percentage of tourism supplies, including food items, are imported. These imports serve as leakages from the economy. Mbaiwa (2003), as well as Mahachi-Chatibura and Saayman (2015), also note the importation of supplies. The former argues that the tourism-related businesses rely on wholesale and retail supplies from shops in Maun, who in turn import food products from South Africa (Mbaiwa, 2003). The latter equally argues that the industry mainly, and the country in general, depends on imports to meet the supply requirements (Mahachi-Chatibura and Saayman, 2015). The leakages are, consequently, high.

The low demand and supply of locally produced agricultural output, to some degree, reflects the enclave nature of tourism in the Okavango Delta. In enclave tourism, local producers and enterprises are deprived of business as they rarely interact with international tourist (Britton,

1982). Procurement of supplies by enclave tourism operators is rarely done by local suppliers who prefer to source from established multinational corporations. In most developing countries, their luxury goods are imported from outside the locality with some evidence that where the local elite own formal sector enterprises, they are more likely to use local suppliers (Ashley et al., 2000).

The agricultural activities done by the respondents are on a small-scale basis. Therefore, there is little, if ever, excess left for sale. According to Mahachi-Chatibura and Saayman (2015: 55),

“Low levels of supply could also be attributed to farming produce that is mainly reserved for domestic consumption; as the [Botswana Tourism Organisation] representative noted, *‘most farmers produce for their consumption and not for sale’*”.

Harrison and Maharaj (2013) have observed that as a result of weak backward linkages between other sectors and tourism in the Okavango Delta, the income derived by other sectors from tourism is generally low. In this study, the earnings derived from the sale of agricultural produce were calculated and treated as an indicator of backward linkages between tourism and agriculture at a local scale. The results are summarised in Table 6.8. The mean monthly earnings from the sale of agricultural produce are estimated to be BWP381.25. Only 4.2% of the respondents reported that they made an average of over BWP500.00 earnings from the sale of agricultural produce. Such respondents reported that their target is to plough pumpkins used in *bogobe jwa lerotse*, and they market the pumpkins to tourism-related establishments, predominantly those in accommodation and restaurants throughout the Delta. Their approach to the sale of agricultural produce through vigorous advertising arguably sets them apart from the other subsistence farmers, making them outliers of the sample in the process.

Table 6.8: Earnings from the sale of agricultural produce

Amount (BWP)	Percentage
150.00	4.2
200.00	16.7
300.00	45.8
350.00	4.2
400.00	16.7
450.00	4.2
500.00	4.2
2000.00	4.2
Total	100.0
Statistic	Value (BWP)
Mean	381.25
Median	300.00
Mode	300.00
Range	1850.00

The majority (68.7%) of the respondents earn up to BWP300.00 on average per month (Table 6.8). Consequently, it can be argued that tourism fails to contribute measurably through earnings from the sale of agricultural products derived by subsistence farmers in the Okavango Delta. The monthly earnings are too low to improve household economies and rural livelihoods significantly. The linkages of between local subsistence agriculture and tourism are weak. Therefore, there is a need to improve and promote local agricultural development, as well as the relationships between local farmers and tourism-related businesses.

As argued in the previous chapters, livestock farming is widely practised in the Okavango Delta, despite the past and present challenges, such as the outbreak of diseases, associated with the activity. The following subsection presents and analyses results on the sale of livestock to tourism-related business.

6.3.2.2. Sale of livestock

As discussed in section 6.2.5, 59.7% of the respondents participated in livestock farming only, while at least 52% of the respondents were involved in both arable and livestock farming. The

respondents were asked whether or not they sell livestock to tourism-related business. Only 9% of the respondents answered in the affirmative. Therefore, the vast majority of livestock farmers do not have any commercial relationship with tourism-related businesses. These findings seem to find support in a study by Alonso (2010), which examined the relationship between farmers and hospitality businesses. In the study, it was established that 80% of the farmers had any relationship with the tourism businesses. This subsection analyses, (i) the type of livestock sold by the 9% of the respondents, (ii) the number sold in the past three months, and (iii) the average earnings per head. The delimitation of the results in this manner is necessary for concluding the contribution of livestock to the rural livelihoods in the study area.

Table 6.9 presents a summary of the results regarding the sale of livestock in the past three months. The respondents reported that they had sold goats, sheep and cattle to tourism-related businesses. Goats had the highest number of heads sold to tourism-related businesses, while sheep had the least number of heads. Even though goats had the highest number of heads sold than cattle, 50% of the farmers who have sold livestock to tourism businesses in the past three months indicated that the type of livestock sold are cattle, which is 15% more than the proportion of respondents who have sold goats. The results are in line with the argument made by Bahta et al. (2013). In their study on the competitiveness of small-scale livestock in Botswana, Bahta et al. (2013) note that small-scale farming principally involves cattle and livestock. Small livestock identified in this study are goats and sheep. Furthermore, the authors have established that goats are the second largest livestock among small-scale farmers after cattle (Bahta et al., 2013).

Table 6.9: Summary of the sale of livestock in the past three months

	Goats	Sheep	Cattle
Respondents as a percentage of the sample	3.17%	1.81%	4.52%
Respondents as a percentage of livestock sellers	35%	15%	50%
Total number sold in the past three months	18	5	10
Average number sold	2.57	1.25	2
Minimum selling price (BWP)	700.00	800.00	900.00
Maximum selling price (BWP)	900.00	1500.00	2000.00
Average price (BWP)	828.56	1125.00	1640.00

As illustrated in Table 6.9, the average prices of goats, sheep and cattle are BWP828.56, BWP1125.00 and BWP1640.00, respectively. The prices are generally lower than the national average prices of livestock sold to the Botswana Meat Commission (BMC). For example, it was reported that on average, adult cattle sold to BMC yield earnings of between BWP3000.00³ and BWP4000.00 to the farmers (Bahta et al., 2013). Butcheries and individuals, however, are argued to buy adult cattle at lower rates than BMC (Bahta et al., 2013). In this study, respondents who reported that BMC prices are higher than the prices paid by tourism-related businesses corroborated this assertion. One of the respondents noted that generally, farmers in the Okavango Delta have no interest in selling to tourism-related businesses because

“Tourism business owners want to cheat us. All they want is to make massive profits from the sale of meat; they do not care about our livelihoods. They dictate the prices and set them so low with absolutely no regard for the costs incurred by us farmers. We prefer the BMC, and sometimes butcheries. We only sell to [tourism] business owners when we are desperate or when we urgently need the money because BMC takes long to give us money after sales.”

From the assertion made by the farmer, it can be argued that tourism-related establishments are low-priced channels for the sales of livestock. These channels expose the farmers to speculative

³ The study by Bahta et al. (2013) was dependent on the data collected in 2012. In Botswana, the average rate of inflation between 2012 and 2017 was 2.8 (Statistics Botswana, 2017).

pricing. Desperate farmers end up selling their herd at meager prices due to their household cash needs. The deliberate setting of low prices for livestock by tourism-related establishments arguably reflects a parasitic or opportunistic relationship between the establishments and farmers. Livestock farmers are not optimally benefiting economically from the existence of tourism businesses in and adjacent to their communities.

A study by Alonso (2010) supports the findings on tourism businesses as low-priced channels. It is argued that some farmers who are selling their output to tourism businesses in Alabama have raised concerns of “not receiving the ‘right price’” (Alonso, 2010: 1163). The study quotes one of the farmers saying that “They [restaurants] are not going to pay the price I need to make my product profitable. Moreover, they want it so cheap I laugh...” The low prices offered by tourism businesses to farmers do not conform to the definition agritourism, nor do they reflect the aims of ecotourism as defined by the NES in Botswana. As argued in Chapters 1 and 2, agritourism is a form of tourism that supports agricultural production (Wall, 2000; Barbieri and Mshenga, 2008). It promotes the use of agricultural output from local communities.

The next section analyses the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta using multivariate probit regression models. It also discusses the correlations between the different factors that possibly affect the economic contribution of tourism to farmers in the region.

6.4. Econometric Analyses of the Current Economic Benefits of Tourism to Farmers

Two multivariate probit regression models were used to analyse the relationship between the; (i) socio-economic and demographic attributes of the household head of a farming household against formal employment in the tourism sector, and (ii) socio-economic and demographic attributes of the household head of a farming household against formal employment in the tourism sector. In this study, binary choices existed for both models, that is, whether the

household head is employed formally or informally in the sector or not. The models used, as discussed in Chapter 4 are summarised as follows:

$$Y_i^* = \alpha + \sum X_i \beta_i + \varepsilon_i,$$
$$\varepsilon_i = N(0, 1)$$

Where X_i = vector of explanatory variables; β_i = corresponding coefficients; and ε_i = error term to account for any unexplained or unobserved variation.

6.4.1. Multivariate probit regression model for formal employment

The results for multivariate probit regression model the relationship between the socio-economic and demographic attributes of the household head of a farming household against formal employment in the tourism sector are summarised in Table 6.10 below. The independent variables included in the model were age, gender, highest qualification attained by the household head, household size, sale of agricultural produce to tourism businesses (SAP), sale of livestock to tourism businesses (SL), livestock ownership (own livestock), whether or not the household owns *masimo* (own *masimo*), the number of household members with cash income (HHCI) and the number of other members of the household employed in the tourism sector (members employed).

At Durbin-Watson statistic of 2.000, it can be concluded that there is no autocorrelation in the sample. A Durbin-Watson test is a test used to determine whether there is autocorrelation in the sample or not (Holt and Refenes, 1998). The null hypothesis in the Durbin-Watson test is that the residuals are autocorrelated. The Durbin-Watson statistic ranges between 0 and 4, where 2 indicates the absence of autocorrelation.

$R^2 = 0.638$ implies that the model explains about 64% of the variability of the response data around its mean. Therefore, 63.8% of the variations in formal employment in the tourism industry are explained by all the significant variables in the regression model. This shows a good

fit. Thus it can be concluded that there is a relatively good fit between the model and the sample data. Moreover, the p-value of the model is significant at 5% level of significant ($p = 0.000 < 0.05$).

Using all the statistics described above, it can be concluded that the model is robust. However, only three independent variables are significant at 5% level of significance, namely; SAP, 'own *masimo*' and HHCI.

Table 6.10: Regression results for formal employment in the tourism industry

Dependent variable: Formally employed in the tourism-related establishment	Unstandardised Coefficients		Standardised Coefficients	t
	B	Std. Error	Beta	
(Constant)	1.189	.183		6.508
Age (years)	.002	.001	.111	1.545*
Gender (1= male, 0= female)	-.004	.036	-.006	-.101
Highest Qualification (years of schooling)	.006	.022	.021	.285
Household size (continuous)	.011	.006	.113	1.846
SAP (1 = yes, 0 = no)	.196	.046	.276	4.229*
SL (1 = yes, 0 = no)	.025	.069	.025	.360
Own livestock (1 = yes, 0 = no)	.053	.039	.092	1.346
Own <i>masimo</i> (1 = yes, 0 = no)	-.108	.043	-.171	-2.500*
HHCI (continuous)	-.120	.024	-.349	-4.955*
Members employed (continuous)	.049	.052	.072	.945
* Correlation is significant at the 0.05 level (2-tailed) R ² = 0.638; Durbin-Watson = 2.000; p = 0.000				

The results in Table 6.10 show that the sale of agricultural produce to tourism businesses has both a positive and significant correlation ($p < 0.05$) with formal employment in the tourism industry. By implication, if the household is employed formally in the tourism industry, there is an increased livelihood of the household selling agricultural produce to tourism-related business. Perhaps, this emanates from the networks and social relations the household head forms within the industry by being formally employed. It could also be due to the information asymmetries

that exist between the people employed or with members employed, and those not employed in the industry.

In NIE, the assumption of the existence of perfect information by neoclassical economists is relaxed (Cox et al., 2010; Rossiaud and Locatelli, 2010). NIE scholars argue that the assumption of imperfect information reflects the reality better than the simplistic view of perfect information (Ferrari-Filho and Conceição, 2005; Rossiaud and Locatelli, 2010). Information affects the behaviour and choices made by economic agents. Through social relations and interaction in a particular setting, agents absorb knowledge and use it to improve their utility and welfare (Cox et al., 2010; Ostrom, 2011). In line with this argument, the information asymmetries between the farmers employed or with members employed, and those not employed in the industry act against the favour of those not employed in the industry regarding the supply needs of agricultural produce.

The results of the regression analysis further show that there is a negative and significant relationship between ownership of ploughing fields (*masimo*) and formal employment in the tourism industry. Essentially, people who own *masimo* and are actively involved in ploughing every season are less likely to be employed in the tourism industry. This implies that there is a competitive and not a complementary relationship between tourism and arable farming. Thus, formal employment in the tourism sector competes for scarce labour resources with the arable farming sector.

The regression results for formal employment in the industry are distinctively different from those of informal employment in the tourism industry. The following subsection discusses the results for the relationship between the socio-economic and demographic attributes of the household head of a farming household against informal employment in the tourism sector.

6.4.2. Multivariate probit regression model for informal employment

The same independent variables used for the multivariate probit regression model examining the relationship between the socio-economic and demographic attributes of the household head of a farming household against formal employment in the tourism sector were used for 'informal employment in the tourism industry' as the dependent variable in this section. However, as indicated by the statistics in Table 6.11, the model for informal employment is not as robust as the one for formal employment discussed in the previous subsection.

At $R^2 = 0.462$, only 46.2% of the variations in informal employment in the tourism industry are explained by all the significant variables in the regression model. This implies that the model is a moderately good fit. Collinearity statistics were obtained in order to determine whether there are high correlations among some independent variables. The statistics obtained were well below standard thresholds. Furthermore, the Durbin-Watson statistic of 2.001 indicates that there is no autocorrelation in the sample.

Table 6.11: Regression results for informal employment in the tourism industry

Dependent variable: Informally employed in the tourism-related establishment	Unstandardised Coefficients		Standardised Coefficients	t
	B	Std. Error	Beta	
(Constant)	2.665	2.052		1.299
Age (years)	.009	.014	.083	.661
Highest Qualification (years of schooling)	-.433	.269	-.221	-1.609*
Household size (continuous)	-.046	.063	-.086	-.724
SAP (1 = yes, 0 = no)	2.141	.759	.551	2.823*
SL (1 = yes, 0 = no)	2.554	.899	.563	2.841*
Own livestock (1 = yes, 0 = no)	-.065	.412	-.022	-.159
Own <i>masimo</i> (1 = yes, 0 = no)	-.147	.433	-.045	-.339
HHCI (continuous)	.156	.403	.042	.387
Members employed (continuous)	-.020	.596	-.004	-.033
Gender (1= male, 0= female)	.737	.324	.244	2.275*
* Correlation is significant at the 0.05 level (2-tailed) $R^2 = 0.462$; Durbin-Watson = 2.001; $p = 0.023$				

At $p \leq 0.005$, there is a positive and significant correlation between farmers' gender and informal employment in the tourism sector. This implies that men are at a slightly higher advantage of being employed informally in the tourism industry. As with formal employment in the tourism industry, there is a positive and significant relationship between informal employment in the tourism industry and the sale of agricultural produce. Similarly, there is a significant and positive relationship between informal employment in the tourism industry and the sale of livestock. The argument of information asymmetries could also be used to describe the relationship between these two variables. Therefore, farmers with relations within the sector, through informal employment, may have access to information about the needs for livestock supply by operators that other farmers who are not employed in the industry do not have. They may obtain this information from operators that other farmers who are not employed in the industry do not have. The former may use such information to influence their choices of selling livestock to the tourism businesses.

6.5. Chapter Summary

This chapter addressed the fourth specific objective of the study by determining the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta. The indicators used for economic benefits were salaries or wages from formal employment in tourism-related establishments, earnings from (i) informal employment in tourism-related establishments, (ii) the sale of agricultural produce, and (iii) the sale of livestock to tourism-related establishments. Only 8.6% of the household heads were formally employed in tourism-related establishments. Similarly, only 21.3% of the respondents reported that other members of the household were employed formally in the sector while just over 30% of the respondents were informally employed in the sector. The economic benefits derived by the farmers through employment are generally low. The majority (64.7%) of other household members employed formally in tourism-related establishments earned salaries less than BWP1500.00 per month.

The low and weak linkages of tourism with local small-scale farmers were further analysed using earnings from the sale of agricultural output, including livestock, as indicators of economic

benefits. Only 10.9% and 9% of the respondents have sold agricultural produce and livestock to tourism-related establishments in the past three months, respectively. The sales generally generate low earnings, reflecting that tourism-related businesses are low-priced channels. Overall, the results imply that local communities in the Okavango Delta seldom have direct economic benefits from tourism in their localities.

The multivariate regression results for farmers' features and formal employment in the tourism industry revealed that the sale of agricultural produce to tourism businesses has both a positive and significant correlation ($p < 0.05$) with formal employment in the tourism industry. Similarly, the sale of agricultural produce to tourism-related establishments has both a positive and significant correlation ($p < 0.05$) with informal employment in the tourism industry. These could mean that those employed in the industry formally and informally are at a slightly higher advantage regarding information about the need for agricultural produce and livestock sales in the industry. There is a need to reduce the enclave nature of tourism in the Okavango Delta in order to improve and strengthen the linkages between the industry and the local producers. Furthermore, there is a need to reduce the local communities' dependence on subsistence farming in order to enable them to benefit from the growing tourism industry in or adjacent to their communities. The next chapter analyses the conflict and coexistence of agriculture and tourism in the Okavango Delta using empirical data.

CHAPTER 7
ANALYSIS OF CONFLICT AND COEXISTENCE OF AGRICULTURE AND TOURISM IN THE
OKAVANGO DELTA

“Give me a one-handed economist! All my economics say, "On the one hand... on the other.” –

Harry Truman

7.1. Introduction

Wildlife resources play significant ecological and economically roles in the landscapes of the Okavango Delta. One of the most common income generating activities in the Delta is wildlife and safari tourism, which are also called nature-based tourism (Mogende and Moswete, 2018). Tourism and wildlife management are some of the contemporary land uses that are taking place in what was historically considered as the tribal land. However, as discussed in Chapter 1 of this thesis, there are a few studies that define traditional and contemporary land use patterns (see Bendsen and Meyer, 2003; Kgathi, 2002; Mbaiwa, 2004 and 2005, Mbaiwa et al., 2008). Further, there are even fewer studies that discuss the conflicts between contemporary and traditional land uses on the livelihoods of farmers (see Darkoh and Mbaiwa, 2005; ODMP 2007). There is also a dearth of studies that analyse natural resources institutions and the role they play in promoting coexistence and creating conflict between contemporary and traditional land uses.

Chapter 5 used document analysis to conclude that in Botswana generally, and in the Okavango Delta narrowly, the shifting institutional landscape of natural resources management has resulted in trade-offs between land uses, sustainability goals and ecosystem services. The institutions swing between promoting coexistence and igniting conflicts between agrarian communities and contemporary land uses, primarily conservation and tourism.

This chapter uses empirical data from focus group discussions, key informant interviews and household surveys to analyse the conflict and coexistence between agriculture and tourism in the Okavango Delta. This is especially important for addressing the last two specific objectives of

the study. The first section analyses the responses on land use in the Okavango Delta. The second section discusses the data on land use conflicts in the Delta broadly, and the conflicts between agriculture, wildlife and tourism specifically. The third section discusses the perceived role played by institutions in influencing the existence and the relationship between tourism and agriculture in the Okavango Delta. The fourth section analyses the farmers' attitudes towards land use conflicts generally, and the conflicts between agriculture and tourism specifically, using responses from Likert scale statements. The fifth section discusses some efforts to address the conflicts between tourism and agriculture, as well as their mixed results.

7.2. Land use in the Okavango Delta

In this study, the uses of land in the Okavango Delta were categorised into two broad groups, namely: traditional land contemporary land uses. The significant traditional land uses identified by focus groups in all of the four villages were residential, arable farming, livestock farming, fishing, harvesting of natural resources and livestock grazing. The groups highlighted that there is a difference in land used for livestock farming and livestock grazing. One of the members noted that,

“There is land used for kraals, and there is land used for grazing. We build kraals near our homesteads or cattle posts, but our livestock grazes freely anywhere. You release them in the morning for grazing [and] they are free to move anywhere. Our livestock uses the open space for grazing. Now you see – I can use the land for setting up a kraal and for my cattle post, and my livestock can use open land for grazing. These are two uses.”

The key informants substantiated the data obtained from focus group discussions. They cited residential, arable farming, livestock farming and harvesting of natural resources as the traditional land uses. A key informant from the Department of Wildlife National Parks highlighted, however, that the traditional land used were, and still are, mainly for subsistence purposes.

Various studies in the Okavango Delta have noted the traditional land uses and livelihood activities in the Delta similar to the ones identified in this study (see Bensen and Meyer, 2002; Kgathi et al., 2007; Mbaiwa, 1999; Darkoh and Mbaiwa, 2009; Ngwenya et al., 2012). However, Kgathi et al. (2007: 294) note that over the years, the importance of traditional land uses and their corresponding contribution to household livelihoods in the Delta have been reduced in part “because the land they depended on (and its resources) is now used for other activities such as tourism and conservation.”

The contemporary land uses identified through focus group discussions were ranches, commercial establishments associated with tourism such as camps, lodges and hotels, other commercial establishments such as shops, national parks, WMAs, CHAs and the erection of veterinary fences. They highlighted that the Ministry of Agriculture erected the veterinary fences in response to contagious bovine pleuro-pneumonia (CBPP) pandemic and foot and mouth disease. The fences serve as barriers for isolating livestock in case of a disease outbreak, and for preventing the transmission of diseases. The CBPP fences erected in the Delta are illustrated in Figure 7.1.

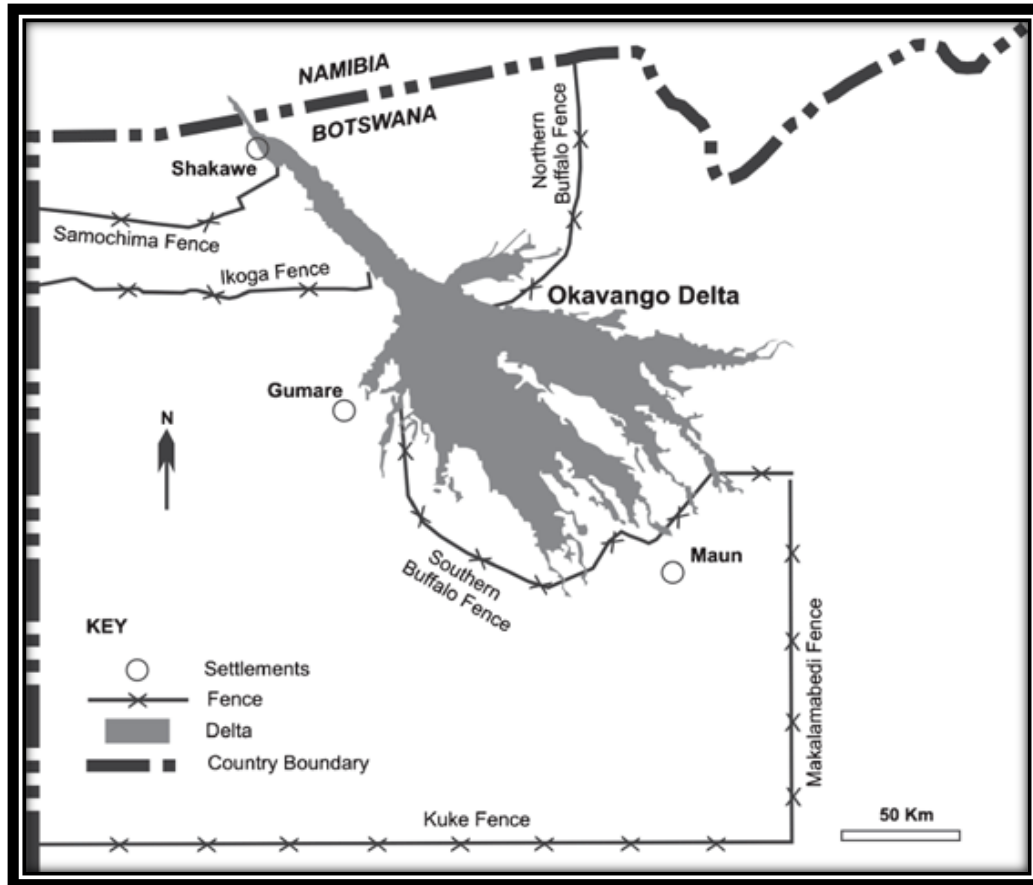


Figure 7.1: CBPP fences in the Okavango Delta (Sources: Bensen and Meyer, 2002; Darkoh and Mbaiwa, 2009)

The key informants supported the results obtained from focus group discussions on the contemporary land uses. In addition to the reasons for the erection of fences highlighted by the focus group participants and key informants in this study, a study by Darkoh and Mbaiwa (2009) argues that veterinary fences were also constructed to protect country's beef production and export, predominantly to the European markets. According to the results from both the focus group discussions and key informant interviews, the emergence of contemporary land uses in the Okavango Delta have led to conflicts between land uses and livelihood activities. The following section discusses the results on conflicting land uses in the Okavango Delta.

7.3. Land Use Conflicts in the Okavango Delta

This section analyses the results on land use conflicts in the Delta obtained from household surveys, focus group discussions and key informant interviews. As noted in the preceding section, after the emergence of contemporary land use in the region, there are conflicts between traditional land uses and the modern ones. There are cases of human-wildlife conflicts, which as are also described as agriculture-tourism conflicts in this study. The results are discussed using two classifications, namely; conflicts between contemporary land use with arable farming and livestock farming. The following subsection discusses the former.

7.3.1. Conflicts between contemporary land use with arable farming

Data from household surveys reveal that 72.4% of the respondents reported that they own *masimo* in various parts of the Okavango Delta (Figure 7.2). While dryland farming is widely practised in the region, some farmers in this study use flood recession farming, locally known as *molapo* arable farming in the Okavango Delta. Correspondingly, it has been established that 75% of arable land is used as dryland fields, while 25% is used for flood recession farming in the Delta (Vanderpost, 2009; Mfundisi and Petros, 2015). It is argued that “there is higher organic matter accumulation in flood recession farms which [makes] the *molapo* farms more fertile than dryland farms” (Mfundisi and Petros, 2015: 148).

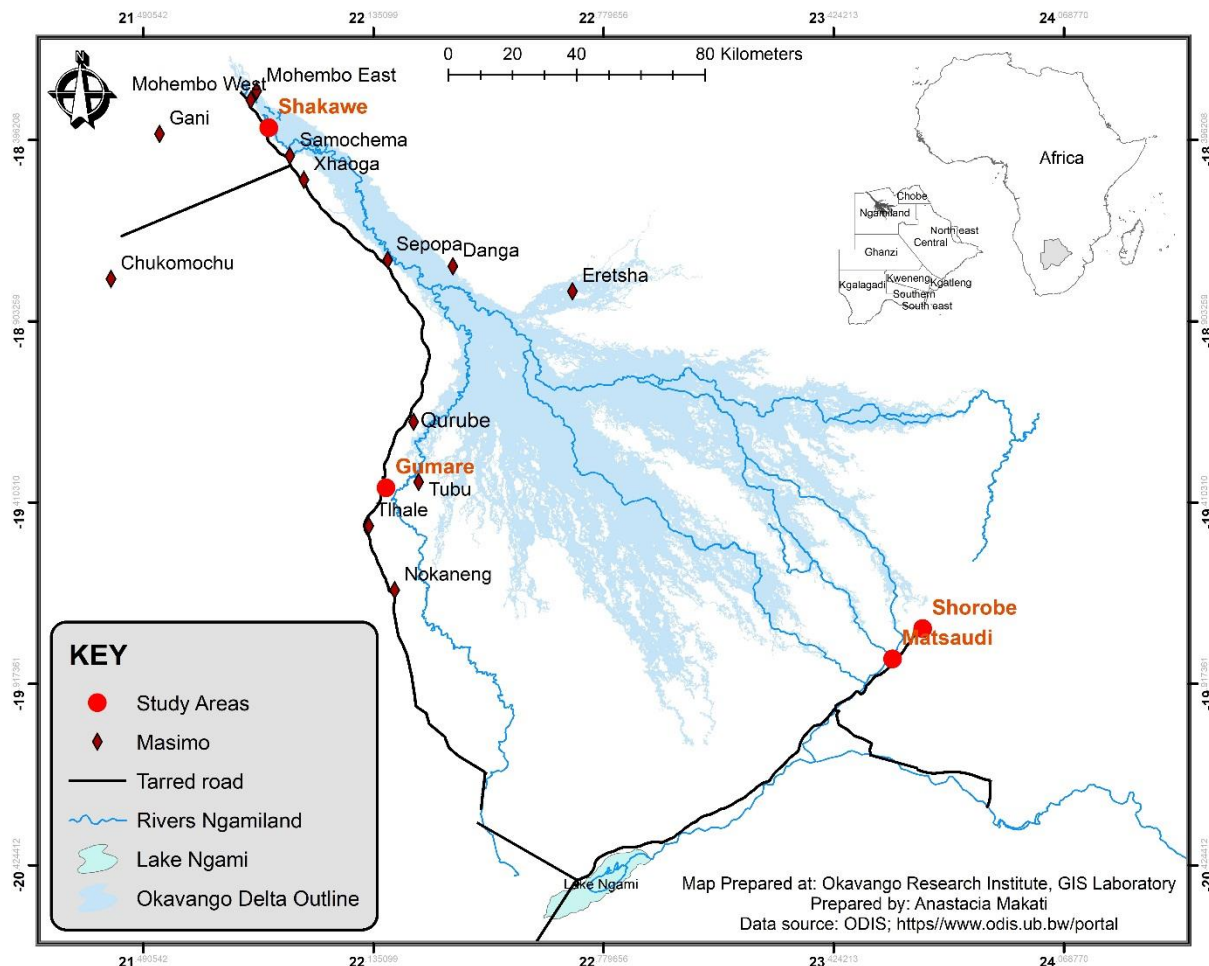


Figure 7.2: Study areas and respondents' ploughing fields (*masimo*) (Source: Okavango Research Institute, 2018)

In this study, 76.3% (n = 131) of the respondents indicated that they have experienced raiding in the last three years as illustrated in Table 7.1. Only 10% of the respondents noted that such animals as warthog, monkeys or baboons and hippopotamus raided their farms. The majority (90%) of the farmers' whose farms have been raided reported that elephants raided the farms. One of the respondents with *masimo* at Tubu noted that,

There are many palm trees in the area where my ploughing field is located. So, a lot of elephants are attracted by the palm trees. They come for the trees and raid our fields in the processes. Even if we did not have palm trees, there are high populations of the elephants in the area. We are bound to suffer.

Table 7.1: Crop raiding experiences and reporting

		Reported raiding to authorities		Total
		Yes	No	
Experienced raiding	Yes	100	31	131
Total				131

Some of the respondents lamented that when wildlife, especially elephants, raid into their farms, they do not only damage crops. They also damage their dwellings and other properties on the farm. For example, a farmer in Matsaudi reported that his water tanks were broken by the elephants during a raiding experience in 2017. Similarly, a farmer in Shorobe reported that elephants destroyed her water pumps in April 2018, while a farmer in Shakawe indicated that one of her huts collapsed due to raiding by elephants in 2016. All of the respondents who have experienced raiding reported that their fences were destroyed in the processes.

Those from focus group discussions substantiated the results from household surveys and key informant interviews, wherein elephants were cited as animals that cause the most damage to crops and other property. According to the Okavango Delta Management Plan (ODMP), in addition to damaging crops, the other destructions caused by elephants in farms include destroying boreholes and water storage, threatening human life as well as damaging houses and roads (ODMP, 2007).

Although the damages caused elephants and other wild animals to farms and crops, some (23.3%, n = 131) of the farmers whose farms were raided by wildlife in the past three years indicated that they did not report the raiding to relevant authorities (Table 7.1). A key informant from the Department of Wildlife and National Parks, based at Shakawe, also noted the incidences of non-reporting of wildlife raiding. The critical informant established that,

“We have registered numerous cases of crop raiding. Wildlife destroys the fences of *masimo* and the crops. We have recorded between 800 and 1000 cases in Shakawe in the last two years.

Elephants and hippos are the frequent culprits. We are also aware that some cases go unreported. We always encourage farmers to report, but some choose not to.”

Through the household survey questionnaire, farmers were asked to state the reason(s) for not reporting damages caused by wildlife to *masimo*. The reasons are summarised in Table 7.2 below. The commonly cited reasons for non-reporting were ‘authorities do not attend’ (29%) and ‘no need because the compensation is low’ (29%). In support of the former, a respondent from Gumare decried that,

“I reported to relevant authorities two years ago. The feedback after reported was that “we will visit the scene tomorrow”. It has been two full years. Surely their ‘tomorrow’ has not arrived yet. Maybe it will arrive when I’m dead. I am not the only victim of ‘tomorrow’ that takes months and years.”

Another respondent from Shakawe reflected the above sentiments,

“They (the authorities) continuously fail to visit the scene on time. One day they would tell you that they do not have transport. The other day they would tell you that the relevant people [to report to] are on leave. The next thing they would tell you [when they finally visit the scene] is that there is not enough evidence to prove that the damage was caused by wildlife. I am tired of reporting.”

Equally, the respondents noted that the reason for not reporting was that the compensation offered by the government is often ‘too low’. By implication, the respondents perceive that the compensation does not match the damage caused by wildlife. Therefore, for such respondent, there is no incentive to report to the Department of Wildlife and National Parks. Some studies have also noted the discrepancies between the amount paid as compensation for damage caused by wildlife and the amount of damage caused by the wildlife (see ODMP, 2006 and 2007; Mmopelwa and Mpolokeng, 2008).

About 23% of the respondents indicated that they did not report crop raiding because animals not listed for compensation caused the damages. Subsequent to recognising and appreciating

human-wildlife conflict in the country, the government of Botswana, through the Department of Wildlife and National Parks, has established a Problem Animal Control (PAC) unit (the Republic of Botswana, 2005). The unit aims to ensure that farmers who suffered damage, inconvenience and loss due to wildlife are compensated (Republic of Botswana, 2005). However, compensation is not paid for damage caused by some wildlife species. It is limited to damage caused by seven species, namely; cheetah, crocodile, elephant, leopard, lion, wild dog and hippopotamus (Republic of Botswana, 2005; Mmopelwa and Mpolokeng, 2008).

According to 6.5% of the respondents, the other reason for not reporting incidents of crop raiding is that the government does not offer compensation if the raiding occurred in unfenced fields. In a study by Sitati and Walpole (2006), it is argued that in rural Kenya, non-electrified fences serve as one of the traditional mitigation measures to deter wildlife from raiding the fields. However, fencing has financial and non-financial costs that prevent some low-income households from effecting it timeously (Sitati and Walpole, 2006).

Table 7.2: Reasons for not reporting crop raiding

	Frequency	Per cent
Authorities do not attend	9	29.0
Did not cause much damage	4	12.9
Damage caused by a species not listed	7	22.6
No compensation for unfenced fields	2	6.5
No need because the compensation is too low	9	29.0
Total	31	100.0

Focus group discussions echoed similar sentiments to household surveys. In addition to the reasons summarised in Table 7.2 above, the discussions with focus groups yielded two more reasons. The first one is that the payments of compensation by the appropriate offices take too long. One of the participants in Matsaudi indicated that they had waited to receive compensation since 2015. The other reason is that in some areas, there are no Agricultural Extension Officers

or field demonstrators, and the Officers are untrained in other areas. Similar observations were made by Gumbo (2016: 281), who noted that,

“The slow pace in the modernisation crusade was partly due to weak extension services. Perhaps, a more telling demonstration of this ‘weakness’ was the fact that not all agricultural demonstrators were adequately trained to deal with different ecological environments, especially in the remote *molapo* areas”.

The ODMP (2007) made similar observations regarding the incidence of non-reporting of crop raiding experiences. According to the ODMP (2007), 24% of the households in the sample did not report crop-raiding experiences to the Department of Wildlife and National Parks. The reasons for not reporting given by the respondents in the ODMP are similar to the ones noted by the respondents in this study.

The majority (58%) of the respondents who reported crop-raiding incidents by wildlife to relevant authorities alleged that they had not been compensated yet. The respondents cited various reasons for not receiving compensation. One of the commonly cited reasons for delayed compensations is that ‘it takes too long to receive compensation’ (32.7%) as reflected in Figure 7.3. A respondent from Shakawe with *masimo* at Xhaoga noted that,

“I long reported to Wildlife (Department of Wildlife and National Parks) when my field and crops were raided by elephants. That was three years ago. I have been on the list ever since. They keep assuring us not to worry, but nothing is being done. I need the compensation to fix my fence because I cannot plough again until the fence is fixed. Otherwise, they are going to use the fence as an excuse not to compensate me.”

The other respondent from Gumare whose ploughing field is located at Tubu confirmed this;

“I reported in 2016. I am still waiting for the compensation. We keep getting different stories. The most common story is that ‘there are no funds’. On other days, they tell us that the list is long. We have to wait, but the sad thing is that our children have to eat. They cannot eat excuses.”

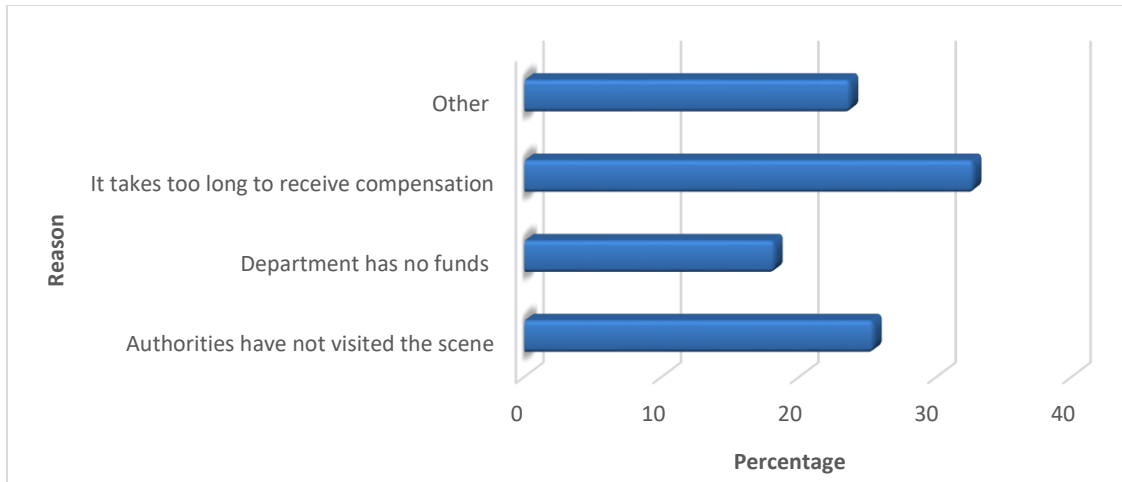


Figure 7.3: Reasons for not getting compensation

About 25% of the respondents reported that they had not received compensation yet because ‘authorities have not visited the scene’ as illustrated in Figure 7.3. As one of the respondents explained;

“We acknowledge that the offices that we are reporting to have other duties and that they have limited staff at times. However, they should start treating our cases as urgent. I reported last year March; they are yet to visit the scene.”

The ODMP (2007) report also notes the cases of delayed assessments of fields. According to the report, the Department of Wildlife and National Parks did not assess at least 19% of the fields. Further, “only 59% of the households who reported damage had received a compensation payment at the time of the household survey (or 73% of those whose fields were assessed)” (ODMP, 2007: 37).

In this study, only 33.3% of the respondents remarked that they were satisfied with the amount of compensation they had received. The majority (66.7%) of the respondents noted various reasons for their dissatisfaction. A significant proportion (75%) such respondents commented that the compensation payments were too low. One of the respondents stated that;

“When the elephants raided my field, they destroyed everything. I usually sell maize and watermelon by the roadside, but I had absolutely nothing to sell after the incident. I only had a

little left for subsistence. The damage was worth way more than the P500.00 I received as compensation.”

The ODMP (2007) reports that during the 2004/2005 ploughing season, 93% of the farmers in the Okavango Delta were unable to sell the surplus of their harvest due to damages caused by elephants. Female-headed households were especially at risk (ODMP, 2007). The occurrences of crop raiding, by implication, have an adverse effect on the household livelihoods of arable farmers. They affect the farmers’ financial capital by disallowing them to earn cash from the sale of surplus harvests, and they have a negative impact on the farmers’ physical capital through the destruction of property such as fences.

As noted in Chapter 5 of this thesis, more than 35% of the land in the Okavango Delta is designated as national parks, game reserves and WMAs. These areas are unfenced (Darkoh and Mbaiwa, 2005). Therefore, wildlife moves freely into grazing lands, leading to conflicts between wildlife conservation as contemporary land use and livestock farming as traditional land use. The following section discusses the conflicts between contemporary land uses with livestock farming in the Okavango Delta.

7.3.2. Conflicts between contemporary land use with livestock farming

According to focus group discussions, the erection of veterinary fences is one of the primary sources of conflict between contemporary land uses and livestock farming. The participants pronounced that the fences have significantly reduced the area of grazing lands, thereby affecting the productivity of the livestock negatively. One of the participants in Shorobe noted that;

“Livestock farming used to be the main livelihood activity in this village. The fences have taken that away from us. Our livestock died of thirst and hunger. They could not access fertile grazing lands, and they were restricted from accessing water sources. We only have a few livestock. I am not ashamed to declare my hate to wildlife conservation and tourism. They thrive out of our tears and misery.”

Generally, the participants linked the veterinary fences to wildlife conservation and tourism. They noted that their livestock in the Okavango Delta has lower value compared to livestock in other areas of the country due to foot and mouth disease spread by buffaloes. In a study by Stone and Nyaupane (2018) at Chobe, it is argued that buffaloes carry the virus responsible for the foot and mouth disease within the region. Consequently, cattle from the Chobe cannot be sold to the European Union (EU) beef market. “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” (Stone and Nyaupane, 2018: 317). The Okavango Delta is faced with a similar dilemma.

A key informant from the Department of Animal Health and Production (DAHP) in this study noted that the fences had promoted negative attitudes of farmers towards both wildlife conservation and tourism. The informant highlighted that the farmers’ negative attitudes have a basis and “their hatred towards wildlife conservation and tourism is not misplaced”. He further stated that,

“We all know that if it were not because of buffaloes, we wouldn’t be having foot and mouth in this area. But we need to protect the buffalo just as much as we need to protect our beef market. It is a pity that one has to suffer in the process and farmers have to carry the largest weight.”

In addition to the reduction of grazing land by fences, the other primary source of conflict between contemporary land uses and livestock farming identified in this thesis is livestock predation. Table 7.3 summarises the results of the responses regarding livestock predation between the years 2015 and 2018. These were obtained through household surveys. The majority (70.5%) of the respondents indicated that they had experienced livestock predation. The types of livestock killed included cattle, goats, sheep, donkeys and horses.

Table 7.3: Responses about livestock predation

	Response	Frequency	Percent
Livestock killed between 2015 to 2018	Yes	91	70.5
	No	38	29.5
	Total	129	100

About 51% of the respondents whose livestock have been killed indicated that they had not reported the predation incidences to the relevant offices. Their decisions for not reporting are supported by the reasons summarised in Figure 7.4. The majority (52.1%) of the respondents narrated that they have not reported because the authorities rarely ever visit the scenes timeously. Their concerns were similar to those of arable farmers discussed in the previous section. This arguably reflects a vacuum in the organisation in place that serves as an institutional apparatus. As discussed in Chapter 2 of this thesis, organisations are structural, institutional arrangements that serve as a framework for structuring relational actions between agents, as well as between agents and the natural environment. The existing vacuums in structural, institutional arrangements consequently constrain farmers' behaviour through serving as a disincentive for reporting as human action. The wildlife management institutions in place discussed in Chapter 3 of this thesis makes proscriptions and prescriptions for curbing, mitigating, controlling and managing human-wildlife conflicts that exist in Botswana and the Okavango Delta. However, the disincentive to report on account of non-attendance to the scene by those in positions reflect the vacuum in the enforcement of the institutions' proscriptions and prescriptions.

The second highest commonly cited reason for not reporting occurrences of livestock predation is that the compensation payments for donkeys are too low and at the time, no compensations are paid at all (20.8%). There seems to be a mismatch between the economic value attached to donkeys by the government and the communities. In 2013, the government noted some changes in the rates of compensation payments for livestock as follows,

“...in a case where a farmer’s cow was killed by a lion, it would be compensated with P3 000, which will be an increase from the current P1 050. [The] compensation for a donkey killed by a lion had increased from P70 to P200... in a case where a farmer’s bull had been killed by a lion, compensation was raised from P1 900 to P5 500” (Galeragwe, 2013).

The compensation payments for donkeys are significantly lower than those for cattle. However, in the Okavango Delta, the loss of donkeys due to predation represents an economic loss to farmers, not only regarding direct losses but also regarding the increased costs and work effort. According to the respondents in this study, the government has undervalued the importance of donkeys to their livelihoods. In the Okavango Delta, donkeys play an essential role in the livelihoods of subsistence farmers (Patrick et al., 2000; Geiger and Hovorka, 2015). They serve as an affordable means of transport and draught power for subsistence farmers (Geiger and Hovorka, 2015). They also contribute towards household incomes and food security for small-scale farmers (Geiger and Hovorka, 2015).

The mismatch in the values attached to donkeys by the government and the farmers in the Okavango Delta has not only created a disincentive in reporting incidences of donkey predation by lions and other wildlife but have also led to the retaliatory killing of the predators by the farmers. It has been noted that the failure of government institutions and their corresponding institutional arrangements often leave farmers with no alternative but retaliation (Graham et al., 2005; Minnie, 2009).

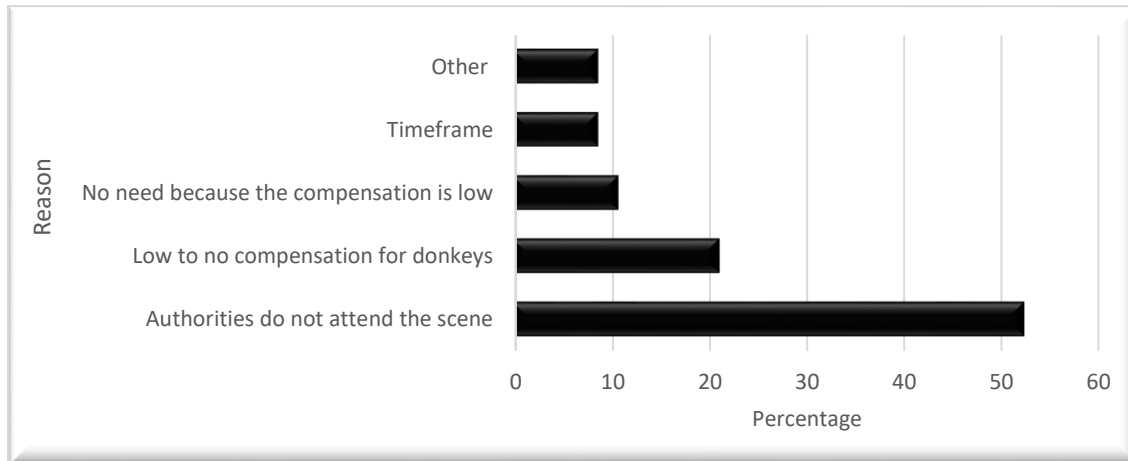


Figure 7.4: Reasons for not reporting livestock predation

The other noteworthy reason for not reporting livestock predation incidences to relevant offices is the ‘timeframe’ (Figure 7.4). According to 8.3% of the farmers, they often discover the carcass of their livestock days after the incidences. One of the farmers in Matsaudi noted that;

“I am a livestock farmer, and I also have *masimo*. These are located in different places. On top of that, I have kids who attend schools here in Matsaudi. I have to divide my time and efforts in three ways. Sometimes my cattle go missing, and I have to spend days looking for them. Sometimes I find one of them killed days prior, but when days have elapsed, you cannot report due to lack of evidence.”

In the Okavango Delta, as in other parts of the country, households widely practice the traditional three-tier land use system (Darkoh and Mbaiwa, 2005). The three-tier system encompasses the village, the lands (*masimo*) and the cattle post (*moraka*). As evidenced by the above quote, the household has to divide time, and other resources among the three-tier land use. However, the evidence of livestock predation is lost as time elapses. The farmers noted that the livestock could be killed by any of the large carnivores in the Okavango Delta, such as the lion (*Panthera leo*), leopard (*Panthera pardus*), cheetah (*Acinonyx jubatus*), African wild dog (*Lycaon pictus*) and spotted hyena (*Crocuta crocuta*). However, some of these carnivores, such as spotted hyena, are not in the list of predator species identified for compensation payments. It, therefore, becomes difficult to identify the species that killed the livestock after several days have passed.

Of the 49% of farmers who reported livestock predation to the relevant authorities, only 39% were not compensated as illustrated in Figure 7.5. In this study, a χ^2 test of independence was used to determine if there is a significant relationship between socio-demographic features of the farmers, namely age, gender and highest qualification, and compensation payments. The null hypothesis of the test assumed that there is no significant association between the payment of compensation and the farmers' socio-demographic features. At $p > 0.05$ for all the variables, no association was found between the payment of compensation and the farmers' socio-demographic profiles. The null hypothesis is therefore accepted.

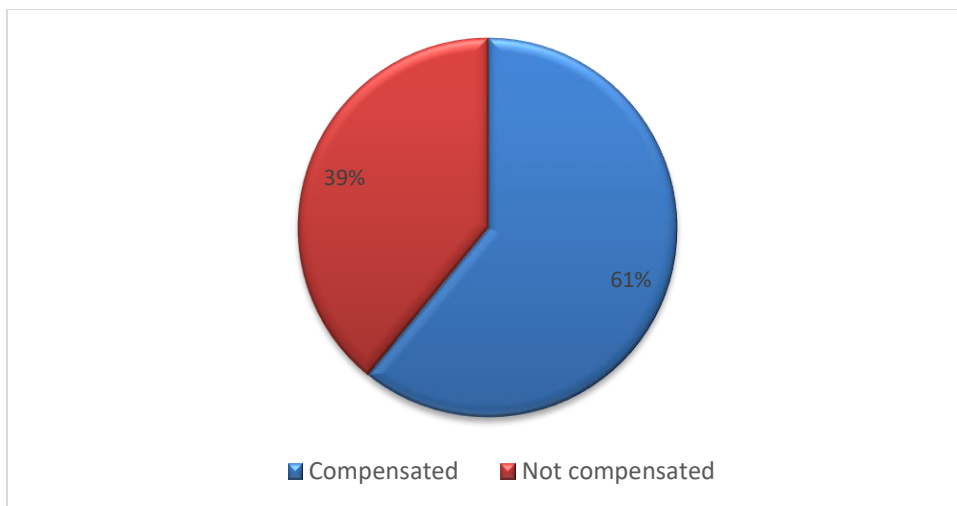


Figure 7.5: Proportion of farmers who have received compensation subsequent to livestock predation

Although the majority (about 61%) of the farmers received compensation payments, only one respondent (3.6%) reported that he was satisfied with the payment. The results are summarised in Table 7.4. One of the highly quoted reasons for the farmers' degree of dissatisfaction is 'compensation was too low' (74.1%). One of the respondents in Shorobe highlighted that;

"The compensation payments are so low that you cannot do anything productive with the money. If my bull gets attacked and killed by a lion, it doesn't matter the breed, the payment that will be far below the value of a bull, even of the cheapest breed. [Therefore,] I would then be forced to replace a bull with a goat or sheep."

Table 7.4: Responses on farmers' satisfaction regarding compensation payments

Response	Frequency	Percentage
Satisfied	1	3.6
Not satisfied	27	96.4
Total	28	100.0

The key informant from the PAC unit acknowledged the concerns about the low rates of compensation payments. In his words, "the money is not meant to be more than or equal to the value of the livestock. It aims to help the farmer in the events of conflict with wildlife". He further noted that his office had not made follow-ups to enquire whether the complainants were satisfied with the compensation payments they had received between 2015 and 2018.

7.3.3. Discussion of the conflicts between the contemporary and traditional land uses

Overall, the results show that there are conflicts between contemporary and traditional land uses in the Okavango Delta. Livestock predation and crop raiding are prevalent in the Okavango Delta. They inflict significant losses to farmers' livelihoods. According to the respondents in this study, the PAC unit as an institutional arrangement, is failing to address the conflict between wildlife and agriculture. This is evidenced by 29% of the respondents whose farms were raided by wildlife but did not report because 'authorities do not attend' to the scenes. Similarly, 51% of the respondents whose livestock have been killed indicated that they had not reported the predation incidences to the PAC unit, while a significant proportion of these respondents (52.1%) used the reason that 'authorities do not visit the scenes' as a justification for not reporting.

An earlier study by Osborn and Parker (2003) argues that PAC unit is a centralised organisation, and therefore it is prone to the overall shortcomings of centralisation in Botswana, such as limitations of financial and human resources. In natural resources management, the centralised system has been criticised for its failure to incorporate the individual needs of communities (Plummer and Slaymaker, 2007; Madigele, 2016). This failure is manifested in the Okavango Delta.

Equally, there were incidences where farmers reported crop raiding and livestock predation. However there were no scene visitations by officials from the Department of Wildlife National Parks broadly, or officers from the PAC unit specifically. Some reports were made as far back as 2015 or earlier. As argued by Noga et al. (2018: 216),

But when wildlife authorities fail to stave off the problem or to respond to farmers' reports of raiding incidences, it often results in anger and resentment among members of a community who live with wildlife.

The manifestations of anger and resentment are reflected by such actions as retaliatory killings of predators noted in this section. Consequently, the sustainability of wildlife resources and the survival of nature-based tourism in the Okavango Delta are threatened. Madden (2008) reasons that more often than not, institutions have a role to play towards contributing to the conflicts between agriculture and wildlife resources. For instance, in East Africa, land use institutions have ignited and exasperated the conflict between the Maasai pastoralists and wildlife by altering their farming traditions (Madden, 2008). The institutions also play a role in mitigating and preventing the conflicts between agriculture and wildlife resources (Madden, 2008). The following section analyses the role played by institutions in influencing the existence and the relationship between tourism and agriculture in the Okavango Delta.

7.4. The Role Played by Institutions in Influencing the Existence and the Relationship between Tourism and Agriculture in the Okavango Delta

The degree of interaction and the quality of the relationship between tourism, wildlife resources and farming communities are shaped by an array of historical, economical, institutional and geographical factors, among others. According to Dublin and Hoare (2004), attaining sustainability of wildlife and livelihoods of communities adjacent to tourism and wildlife areas, there is a need to have clear and balanced land use institutions in place. This section uses the data obtained from all of the three primary sources to analyse the role played by institutions in influencing the existence and the relationship between tourism and agriculture in the Okavango

Delta. The first subsection analyses the data from key informants and focus groups on land zoning by the Tribal Land Act.

7.4.1. The Tribal Land Act and land zoning

According to the focus group discussions, the process of land zoning in the Okavango Delta was ill-planned with minimal and no consultation with farmers and other stakeholders. The participants perceived that the top-down approach by the government and formal institutions without regard to the prevailing traditional land uses is the primary source of conflict between contemporary and traditional land uses. A participant in one of the two focus group discussions in Shorobe argued that the establishment of WMAs and the extension of Moremi Game Reserve have not only restricted their access to natural resources but have significantly reduced the area for farming. According to the respondent,

“The government has the habit of zoning land and extending the conservation land without consulting us. Before 1982, the zoning process left us with significantly low levels of natural resources. In 1982, they took almost half of my lands (*masimo*). By 1990, I had to decide to quit fighting and take their abuse. We cannot access veld products. Our cattle have a little area for grazing.”

In the Okavango Delta, the failure to regard both the contemporary and traditional users of natural resources in policy-formulation through encouraging networking, building relationships and emphasising negotiation and collective action has led to natural resources conflicts at the local level. Both of the focus group discussions in Shorobe noted that the land zoning exercise had disposed them of large areas of land, while the erection of fences, particularly the Southern Buffalo Fence (Figure 7.1) has reduced their communal grazing lands.

Darkoh and Mbaiwa (2005) captured similar sentiments in their study. The study argues that land use institutions, such as the Tribal Land Act and its supporting policies lack “appropriateness and

local people's support mainly because of the top-down approach in policy-formulation and adoption" (Darkoh and Mbaiwa, 2005: 57). According to the authors,

"The top-down approach to land management has resulted in land use conflicts between the Government and the rural communities in the Okavango Delta... The periodic extensions of Moremi Game Reserve into land belonging to the people of Shorobe, Sankoyo and Mababe without due consent, has in the process caused land use conflicts between rural communities and the government" (Darkoh and Mbaiwa, 2005: 58).

The extensions of land zoned for conservation are what this thesis likened to the 'camel's nose' in Chapter 5. While the top-down approach is argued to harmonise and standardise the practices of natural resources access and management to ensure equity in enforcement by central authorities (Tabellini, 2003; Madigele, 2015), they are argued to be a source of conflict between contemporary and traditional land uses in this thesis. They have failed to take into consideration the social, ecological, economic and other realities of communities in the Okavango Delta, leading to dispossessions of land, restrictions to accessing natural resources and overall negative impacts on livelihoods. In NIE, it is argued that the failure to acknowledge the diversity and complexity of natural resources utilisation and needs in various communities often leads to the failure of centralised natural resource management in the bid to balance conservation and rural livelihoods (Plummer and Slaymaker, 2007).

One of the key informants from the Department of Wildlife and National Parks noted that;

"The land has been zoned without foresight. For example, residential plots and *masimo* have been allocated in elephants' corridors. Overall, there are so many layers of conflicts. There are even conflicts between the governmental departments and organisations, specifically the Department of Wildlife [and National Parks], Department of Agriculture and [Tawana] land board."

According to the key informants, farming and residential land have been allocated on wildlife corridors. The key informants shift the blame to the Tawana Land Board, and by extension to the Tribal Land Act. A key informant from the Village Development Committee (VDC) in Shakawe commented that the land had been allocated in wildlife corridors because of two main reasons;

“First, communities were not consulted because someone in his ivory towers in Gaborone decided to make laws and impose them on our land without consulting us. Secondly, it was a deliberate move by the government because they want to push us out of our ancestral lands and give it to wildlife and tourism businesses. They have done it at the CKGR [Central Kalahari Game Reserve], now they want to do it here.”

The majority of the key informants raised the concerns about lack of harmony in the views and actions between departments of various ministries. For instance, the critical informant from DAHP blamed the Ministry of Environment, Natural Resources Conservation and Tourism for prioritising wildlife conservation and tourism revenues over the welfare of pastoral farmers in the Okavango Delta, while a representative from Botswana Tourism Organisation blamed the land boards in the region for lacking forethought and for their failure to engage with communities. In the midst of divergence in views and actions, the key informants seemed to agree that there is a need for thorough consultations and healthier dialogue between or among; (i) the government departments; (ii) the relevant departments and communities; (iii) the tourism businesses and communities, and (iv) all stakeholders in the region.

In addition to the failures of the land zoning processes, both of the key informants and focus group participants argued that the hunting ban is another source of conflict between contemporary and traditional land uses in the Okavango Delta. The following subsection discusses the primary data results regarding the hunting ban.

7.4.2. The hunting ban and poaching

Traditionally, some tribal groups in the Okavango Delta were involved in hunting, gathering, fishing and farming, among other activities in their customary land. However, these livelihood activities were “drastically affected by tourism development” (Mbaiwa and Stronza, 2010), other contemporary land uses and land use institutions over the years. According to Mbaiwa and Stronza (2010), after the growth of tourism and other contemporary land use in the Okavango Delta, subsistence hunting was either reduced or abandoned in favour of hunting quotas and

commercial hunting under both CBNRM and community trusts. However, the study by Mbaiwa and Stronza was carried out before the hunting ban discussed in Chapter 5 of this thesis. Through household surveys, this study established that hunting is still prevalent in the Okavango Delta.

During the piloting of household questionnaires, it was discovered that 'hunters' do not readily admit to poaching in the study area. Initially, a large majority (over 90%) denied any occurrences of poaching activities for subsistence purposes within their communities. However, when the question was rephrased to 'killing wild animals for subsistence, commercial or both purposes without a permit', the demeanour of the respondents and their responses changed probably because the criminality undertone or element inherent in poaching was eliminated or at least toned down. For the analysis, the 'killing of wild animals for subsistence, commercial or both purposes without a permit' are regarded as poaching.

The majority (51.6%) of the respondents answered on the affirmative when asked about the existence of poaching within their local communities. The results are illustrated in Table 7.5. One of the respondents in Matsaudi noted that;

"Traditionally, we are hunters, gatherers and farmers. We have been doing it for centuries. The new requirements to obtain licences and permits will not deter us from hunting; it is our tradition and culture."

Another respondent in Shorobe held similar views;

"Hunting is part of our lives. Our forefathers did it, and there were no concerns about the depletion of wildlife. However, when you are ruled by a stubborn government that wants to change traditions in favour of profit, then you become stubborn as well. It is my responsibility as the head of the family to teach my sons how to hunt, with or without a permit."

Table 7.5: Responses regarding experiences of poaching within respective communities

Do you experience poaching in your area?	Frequency	Per cent
Yes	114	51.6
No	107	48.4
Total	221	100.0

Generally, the respondents argue that the contemporary institutions that restrict hunting were designed and implemented without prior consultation with hunting communities. The sentiments aired through the quotes above are noted by Hübschle-Finch (2016) in her study on motivations for poaching in communities adjacent to the Kruger National Park. According to Hübschle-Finch (2016: 1), through killing certain wildlife species without a permit, “The poacher is claiming back his right to hunt by poaching in modern-day conservation areas, which were the traditional hunting grounds of his forefathers”.

Almost 35% of the respondents noted that the poaching activities that take place within their communities are for commercial purposes (Figure 7.6). The respondents perceived that poaching activities for commercial purposes involve the killing of elephants and rhinos for their ivories and horns. They differentiated between commercial and subsistence poaching using motive, profit opportunities and method of killing as criteria. According to the respondents, commercial poachers use sophisticated firearms, and they poach in large scales for profit. It has been established that factors such as the increasing demand for trophies of elephants and rhinos, the availability of an automatic and modern firearm, and financial gains have motivated commercial poaching in most African countries (Leader-Williams et al., 1990; Skonhoft and Solstad, 1996).

Some respondents alleged that people do the exercise of poaching for commercial purposes not from their communities. Their observations seem to find support in a study by Skonhoft and Solstad (1996: 168), which argues that in some African countries, commercial poachers are often “outsiders employed by middlemen (dealers)”.

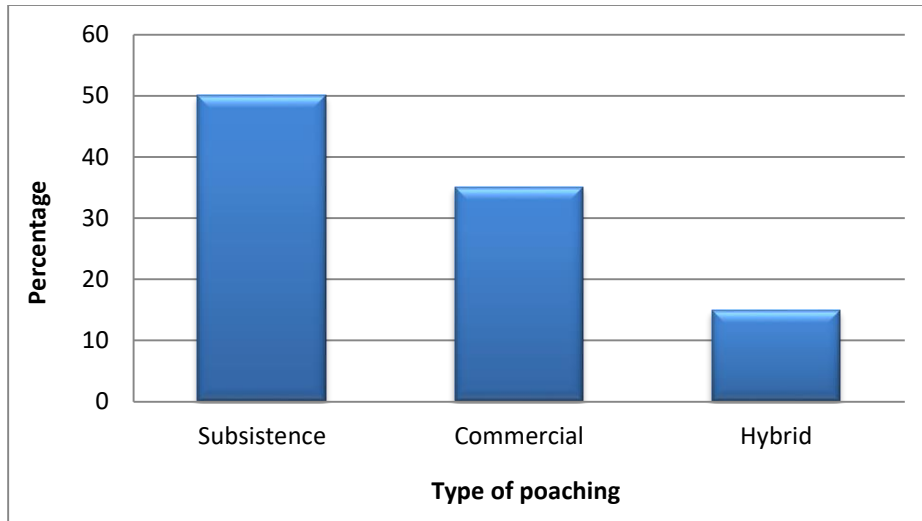


Figure 7.6: Types of poaching

About half of the respondents noted that they poach for subsistence purposes as reflected in Figure 7.6. By implication, according to the respondents, the majority of poaching activities within communities are not for income. For such respondents, poaching is not the supplementary source of household income. Therefore, the majority of the households do not derive economic benefits from poaching in the study area. The institutions that have led to the zoning of conservation land within customary lands in the Okavango Delta, as well as the hunting ban discussed in Chapter 5 of this thesis, prohibit communities adjacent to areas with wildlife resources from accessing such resources for subsistence purposes. As a result, the communities have been marginalised socio-economically and geographically from legally benefiting from wildlife through hunting.

Mogomotsi and Madigele (2017) argue that in northern Botswana, where the Okavango Delta is located, the marginalisation of communities and their restricted access to wildlife have led to negative attitudes towards wildlife, tourism and conservation. “This is due to poorly managed human-wildlife conflicts, and rural communities’ belief that government prioritises conservation over human welfare” (Mogomotsi and Madigele, 2017: 52). In Botswana, the prioritisation of conservation over human welfare is reflected by institutional pronouncements such as, “Where

the farmer had killed a lion that had caused the damage, compensation will not be paid” (Galegarwe, 2013).

Suppose there are n -farmers faced with a hunting ban while they conflict with wildlife. They are faced with penalties when they poach wildlife, and they receive no compensation if they kill wildlife that either destroyed their crops or killed their livestock. The farmers are faced with a decision of poaching or enforcing the law. Each poaching farmer does not have an incentive to alter his strategic objectives given the other farmer’s decision. Therefore, each subsistence poacher has the optimal strategy of maximising his benefits from wildlife resources by using the game rules. The outcomes of the decisions are summarised in Table 7.6 below.

Table 7.6: Conceptualisation of the payoff matrix for subsistence poachers

Farmer 1	Farmer 2	
	Poach	Enforce the law
Poach	(c, c)*	(0, e)
Enforce the law	(e, 0)	(a, a)

*Where $0 < a$, but $a < b$, $b < c$, $c < d \dots j < k$. Therefore, $0 < j$

(Source: Author’s conceptualisation)

The game yields a dominant strategy with the payoff (c, c), that is when both farmers poach. They derive the highest utility from poaching for subsistence purposes. Although the payoff corresponding to both farmers enforcing the law is positive, it is less than the one attained when both farmers poach for subsistence purposes, that is $(a, a) < (c, c)$. It has established that when communities are excluded from conservation decision-making processes, they are likely to retaliate, through poaching for example, as “they feel that their own needs are being subordinated to those of wildlife” (Madden, 2008: 190). Furthermore, Gibson and Marks (1995: 941) argue that;

“...conventional wildlife policies exclude rural residents from most legal uses of wildlife. While paying the costs for conservation in the form of damaged crops and even human lives, rural communities receive few legal benefits from wildlife. Consequently, such exclusionary wildlife policies provide few incentives for the sustainable use of wild animals; rural and urban residents consistently choose to kill wildlife despite the restrictive legal codes.”

Through household survey questionnaires, the farmers were asked whether their communities are actively engaged in anti-poaching efforts. The results of their responses are summarised in Figure 7.7. The majority (70.6%) of the respondents indicated that their communities are not involved in anti-poaching efforts.

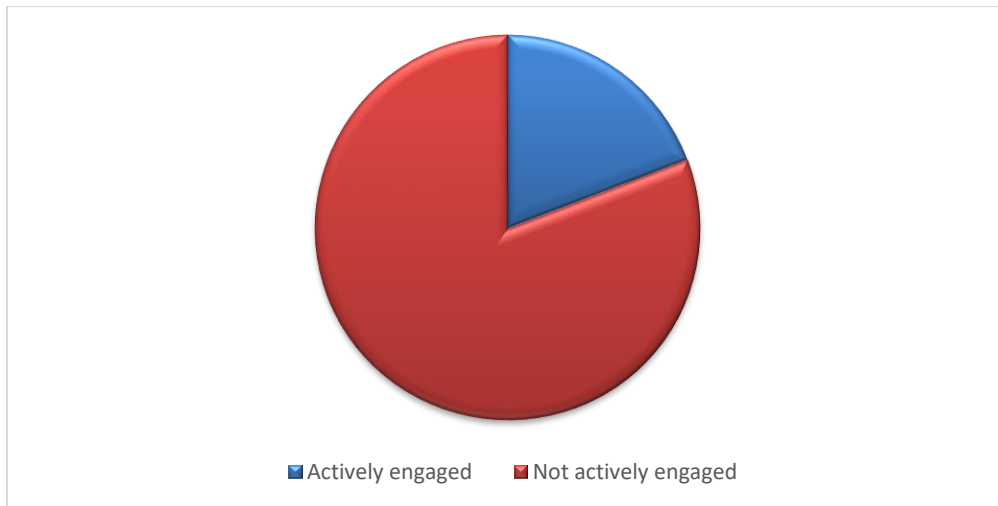


Figure 7.7: Communities' involvement in anti-poaching activities

The respondents noted some reasons why their communities were not involved in anti-poaching efforts. Some respondents (11.6%) cited the existence of anti-poaching legislation and policies as their primary reason for not being actively involved in anti-poaching efforts or activities. One of such respondents alleged that “the government’s anti-poaching laws are designed to exclude communities” from being actively engaged in anti-poaching activities. Other respondents (5.35%) claimed that there are hired scouts who are paid to guard against poaching. Therefore the communities cannot do the job for free.

A significant proportion (36.6%) of the respondents indicated that their communities are not actively engaged in anti-poaching efforts because of lack of interest as illustrated in Figure 7.8. A 72-year-old farmer in Shorobe elaborated the 'lack of interest' point by stating that,

“We used to be very actively involved in protecting our wildlife. We even alerted the police when we noticed poachers. But ever since the government banned hunting and called our community members ‘poachers’, we have absolutely no interest. The wildlife belongs to tourism businesses, the tourists and the government because they are the only beneficiaries. Let them pay for anti-poaching, not us.”

The sentiments aired by the 72-year-old farmer were widely spread, with the majority of respondents arguing that they have been alienated from the wildlife resources. They argue that wildlife resources are protected in favour of the tourism industry while no regard is paid to their livelihoods. The general lack of interest by communities to safeguard wildlife by being engaged in anti-poaching arguably reflects the failure of the top-down approach in ensuring integrated management of natural resource management. The absence of community-level institutional arrangements to guide the use of wildlife is an institutional vacuum with negative consequences to the sustainability of wildlife resources. The alienation of communities from wildlife serves as one of the causes of the substantial conservation problems facing the Okavango Delta.

For some tribal groups in the Okavango Delta, hunting is (or was) a tradition and custom. Before the hunting ban, such groups and broader communities benefited from the proceeds of safari hunting. The communities had an incentive to protect wildlife resources because of the direct benefits they derived. The ban not only created a disincentive but also arguably reignited their need to remain true to their tradition of hunting, which is termed 'poaching' by contemporary wildlife institutions. As discussed in Chapters 2 and 5 of this thesis, pre-existing norms, traditions and customs influence the operations of level 2 institutions. In the context of poaching and the hunting ban in the Okavango Delta, the shadows of the past continue to restrict and constrain the macro level institutions from preserving and conserving wildlife.

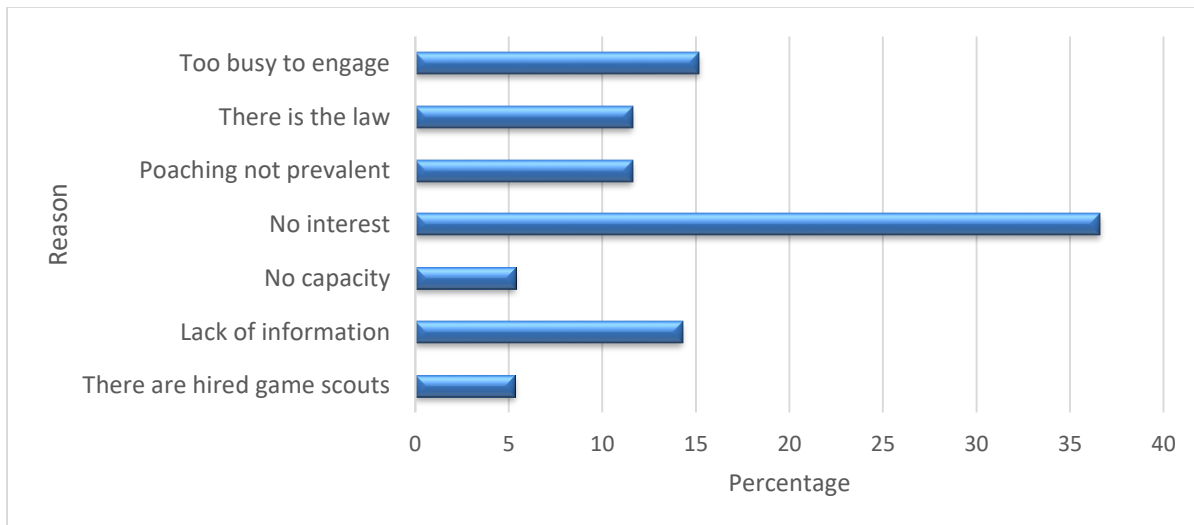


Figure 7.8: Reasons for not being actively engaged in anti-poaching efforts

Some scholars argue that in most cases, communities become actively engaged in protecting wildlife and other natural resources if they have a legal and clear stake in the resources (Martin, 1986; Gibson and Marks, 1995). Thus, when the ultimate ownership of wildlife shifts from communities to the government, and when the wildlife is perceived to benefit the tourism industry over communities, then the communities' incentive to protect the wildlife becomes limited. The *de jure* control and management of wildlife by the government disenfranchises local communities from wildlife resources. As Gibson and Marks (1995: 942), "conservation will be more successful at the local level when residents possess significant legal claims over wildlife resources and [their] management". Noga et al. (2018: 218) buttress this point by stating that,

Local resource users with authority and decision-making autonomy over natural resources management are more likely to become intrinsically motivated and highly committed to implementing planned solutions.

Despite the general resistance of communities from being engaged in anti-poaching activities, 29.4% of the respondents indicated their communities are involved in at least three anti-poaching activities. Only 5.4% of the respondents claimed that their communities are involved in anti-poaching efforts through reporting poaching incidents to the police and the Department of Wildlife and National Parks (Table 7.7). The general lack of involvement in reporting of poaching

incidents was noted in some African countries, such as Zimbabwe before the introduction of the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) (Mesterton and Milner-Gulland, 1998).

Table 7.7: Communities’ anti-poaching strategies identified by the respondents

Activity	Percentage
Clusters	81.1
Public awareness campaigns	15.5
Reporting	5.4
Total	100

The majority of the respondents indicated that their communities have cluster volunteers (commonly called ‘clusters’ in the study areas) who patrol using shifts. The volunteers are paid an average of sum BWP500.00 per month by the government for their services. They generally consider the financial incentive to be low. According to the respondents, the law enforcement agencies in Botswana are constrained in their efforts to combat poaching due to limited resources. Therefore, the participation of communities through cluster volunteering is valuable. It creates jobs for rural communities living adjacent to wildlife resources. They protect the resources while earning an income that contributes to their livelihoods.

In a study by Mesterton and Milner-Gulland (1998), game theory was applied to examine scenarios through which communities monitor their behaviours and conserve wildlife resources in Zimbabwe. However, this study is not interested in using mathematical simulations for arriving at the outcomes of the games. Preferably, it translates the decisions of the players into matrices of payoffs that are aligned to both the findings of this study and the literature (see Gibson and Marks, 1995; Mesterton-Gibbons and Milner-Gulland, 1998; Colyvan et al., 2011).

Suppose there are n-players consisting of residents and cluster volunteers. The players can cheat in two ways. On the one hand, the resident can cheat by poaching. On the other hand, the cluster

volunteers may cheat by not enforcing the law. The outcomes of the decisions are summarised in Table 7.8 below. If player one decides to poach when Player 2 enforces the law, then Player 1 receives a payoff of a while Player 2 receives a zero payoff ($a > 0$). Therefore, a respective player's decision to poach yields a positive payoff. However, the best strategy is for both players to poach. This happens when the incentive of enforcing the law is lower than that of poaching. It is for this reason that Mesterton-Gibbons and Milner-Gulland (1998: 1242) conclude that,

“We have shown how important it is to consider not only whether there are sufficient incentives for residents to stop poaching, but also whether there are sufficient incentives for them to continue monitoring. No self-monitoring agreement can be sustainable without payment to each that exceeds the opportunity cost of monitoring - even if no one is poaching.”

Table 7.8: Conceptualisation of the payoff matrix when there are cluster volunteers

Player 1	Player 2	
	Poach	Enforce the law
	Poach	(b, b)*
Enforce the law	(a, 0)	(a, a)

Although Ostrom (1990) argues that natural resource users can develop functional self-governing institutional arrangements to solve resource-related problems such as agriculture-tourism conflict with little or no intervention from the government, she also acknowledged that self-governance of resources by communities is not a panacea of all resource management problems (Ostrom, 2007). It has been proposed that the government can contribute to the promotion of natural use efficiency and equity through integrated natural resource use which promotes a balanced and sustainable use of resources without coercion or undermining the autonomy of communities and their efforts to manage their natural resources (Ostrom, 2007; Sarker, 2013; DeCaro et al., 2017).

As reflected in Table 7.8, when the benefits of such an action exceed the incentive of protecting the wildlife resources, poaching becomes a preferred option, even by paid cluster volunteers and

other personnel. Tourism-related businesses and the government directly enjoy the benefits of wildlife protection while rural communities living adjacent to protected areas bear the cost of wildlife conservation. This, consequently, affects their attitudes toward tourism as well as wildlife. The following section analyses the farmers' attitudes toward land use conflicts in the Okavango Delta.

7.5. Analysis of the Farmers' Attitudes towards Land Use Conflicts

This section analyses the farmers' attitudes towards the conflicts between contemporary land uses and traditional land use broadly, and the conflict between agriculture and tourism narrowly. The responses were measured using a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). The first subsection analyses the attitude of the farmers towards the erection of veterinary fences in or around their communities. The second subsection analyses the attitudes of farmers towards wildlife and protected areas. The last subsection discusses the attitudes of farmers towards the development of tourism and CBNRMs within their communities.

7.5.1. The attitudes of farmers towards the erection of veterinary fences

The farmers were asked to opine on the inherent conflicts between the veterinary fences erected in or around their communities and agriculture. Three questions were asked using a five-point Likert scale (1 = strongly agree, 5 = strongly disagree). The three questions were then collectively used to create the composite variable labelled the 'attitudes of farmers towards the erection of veterinary fences' (Table 7.9). The attitudes of the farmers towards the erection of the veterinary fences lean more towards neutral (mean = 3.36, SD = 78), implying that the majority of farmers were indifferent. In order to assess the coherence of the three questions forming the composite variable, an internal consistency reliability test was conducted, and a Cronbach's alpha was derived as illustrated in Table 7.9. The Cronbach's alpha is commonly used to assess the internal consistency of a questionnaire that contains multiple Likert scales statements or questions (Gliem and Gliem, 2003). Its coefficients normally range between 0 and 1 (Gliem and Gliem, 2003).

According to George and Mallery (2003: 231), as a rule of thumb, the following coefficients correspond with their respective conclusions, “_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable”.

Table 7.9: The attitudes of farmers towards the erection of veterinary fences

	Number of items	n	Mean	Standard deviation (SD)	Cronbach's alpha
Attitudes of farmers towards the erection of veterinary fences	3	221	3.36	0.76	0.78

In this study, all of the three statements yielded coefficients above 0.7 while the coefficient of the composite variable is 0.78 (Table 7.9). It can, hence, be concluded that the three questions were acceptable in coherently measuring the attitudes of farmers towards the erection of veterinary fences in or around their communities. It is, however, worth noting that the mean of one of the three statements, namely ‘veterinary fences are important in separating grazing areas’ was 2.3 (SD = 0.85). The means leans more towards ‘agree’. Therefore, while the farmers are mostly neutral towards the erection of veterinary fences in or around their communities, they mostly agree that the fences play an essential role in separating the grazing areas.

7.5.2. The attitudes of farmers towards wildlife and protected areas

The farmers were asked to state their opinions regarding the wildlife resources and the development of WMAs and PAs in their areas. The responses were measured using a five-point Likert scale (1 = strongly agree, 5 = strongly disagree). Their responses are summarised in Table 7.10. The majority of the respondents disagreed with the statement that ‘an increase in agricultural productivity reduces poaching’ (mean = 4.49, SD = 1.2). The response is aligned with the farmers’ views regarding the link between agricultural produce and poaching incidents in their communities. The majority (78.7%) of the farmers opined that there is no link between agricultural produce and poaching incidents within communities in the Okavango Delta.

Table 7.10: The attitudes of farmers towards wildlife and protected areas

	Mean	SD	N
WMAs conflict with arable farming	2.90	.847	221
WMAs conflict with livestock farming	2.21	.882	221
PAs conflict with crop farming	3.97	.665	221
PAs conflict with livestock farming	3.37	.651	221
Rural development is more important than wildlife conservation	2.18	1.236	221
An increase in agricultural productivity reduces poaching in my area	4.49	1.205	221

With a mean of 2.18, the farmers generally perceive that rural development is more important than wildlife conservation (Table 7.10). This is arguably supported by the alienation of rural communities in the Okavango Delta from wildlife resources discussed in the preceding sections of this chapter. It has been argued that when the existing institutions fail to minimise the cost and maximise the benefits of local communities impacted by wildlife conservation, the communities tend to have negative attitudes towards the conservation of wildlife (Madden, 2008).

Some farmers agreed (although weakly) with the statement that ‘WMAs conflict with arable farming’ (mean = 2.90, SD = 0.847). Furthermore, they mostly agreed that WMAs conflict with livestock farming in their areas (mean = 2.21, SD = 0.882). The WMAs are often unfenced (Darkoh and Mbaiwa, 2005), leading to the free movement of wildlife into agricultural land as previously discussed in the preceding sections of this chapter.

7.5.3. The attitudes of farmers towards the development of tourism in their communities

The attitudes of farmers towards the development of tourism in their communities were measured using three Likert scale statements reflected in Table 7.11 below. The farmers mostly believe that the development of tourism in the Okavango Delta conflicts with both livestock and

arable farming. The farmers allege that the development of the tourism industry in the Okavango Delta is given priority over farming and their other livelihood activities.

Table 7.11: The attitudes of farmers towards the development of tourism in their communities

	Mean	SD	n
Development of tourism in my area conflicts with livestock farming	2.80	1.257	221
Development of tourism in my area conflicts with crop farming	2.70	1.353	221
Development of CBNRM in my area is important	2.03	.777	221

As illustrated in Table 7.11, the farmers perceive the development of CBNRM in their communities as crucial with a mean of 2.03. This emphasises the importance of CBNRM in serving as a potential solution for the communities' negative attitudes towards tourism and conservation. Child (1996: 369) argues that the CBNRM and its similar frameworks serve as,

A potential solution to the inter-linked problems of poverty and conservation if it is based on sound management principles that also incorporate transparency, accountability and democracy because the unit of management is a community.

Having established the existence of conflicts between contemporary and traditional land uses in the preceding sections, the following section uses the responses from key informants and focus groups on analysing the efforts employed to address the conflicts in the study areas.

7.6. Mitigation Strategies for Land Use Conflicts Implemented in the Okavango Delta

The key informants noted that farmers already have some mitigation strategies in place to minimise the effects of conflicts on their livelihoods. A key informant from the Department of Crop Production argued that the failure of land use institutions to provide viable, effective and affordable options from addressing land use conflicts had forced some farmers to rely on indigenous or traditional knowledge in mitigating the conflicts. For example, the key informants

indicated that farmers often build kraals to enclose their livestock during the night. They argued that strong kraals are usually 'game proof', thereby preventing lions to predate on livestock. Kraals are one of the non-fatal mitigation strategies used in African and Asian countries by rural communities (Hoare, 2001; Sitati and Walpole, 2006). They serve as inexpensive passive barriers that require little or no technology (Sitati and Walpole, 2006).

A key informant from the Village Development Committee (VDC) in Shorobe noted that some farmers build trenches around *masimo*. She argued that the trenches help in deterring elephants from raiding the fields. However, she noted that in the long term, elephants often habituate to the trenches when they recognise that they are false threats.

According to a key informant from the Department Wildlife and National Parks in Shakawe, some farmers use chillies (*Capsicum* spp.) as one of the mitigation measures. In the study areas, the farmers burn the chilli pepper to create an essence that serves as an active deterrent, especially for elephants. Chillies are widely used in other countries as a mitigation method. For example, in Kenya, the use of chillies has been found to be an effective strategy in deterring African elephants (*Loxodonta africana*) from raiding crops (Sitati and Walpole, 2006). Equally, in Mozambique, some farmers mix ground chillies with elephant dung and then burn the dried mixture along the boundaries of the fields to create an essence that deters elephants from raiding the fields (Osborn and Anstey, 2002).

Representatives from the Department Wildlife and National Parks relayed that their department is involved in teaching communities about the approaches they should use, animal behaviour and precautionary behaviours, among other lessons. They disseminate the information to the general public through *kgotla* meetings. The focus group participants confirmed that awareness campaigns by the Department Wildlife and National Parks as well as by other agents are often held at the respective villages' *kgotla*. One of the focus group participants in Matsaudi, however, noted that the *kgotla* attendances are usually low because "farmers are often too busy to attend, especially during the ploughing season".

Generally, the key informants and focus group participants noted that the farmers' mitigation strategies are effective in deterring and displacing the elephants in the short-term. They also noted that the strategies are preferred by farmers because they aligned with their indigenous knowledge, and they are affordable. Studies have shown that traditional mitigation strategies are often useful in the short-term but mostly ineffective in the long term (see O'Connell-Rodwell et al., 2000; Sitati and Walpole, 2006). There is a need, therefore, to create and adapt affordable strategies that are effective even in the long term. This requires the necessary support from formal institutions and the government, considering the levels of income and the general livelihoods of small-scale farmers in the Okavango Delta.

7.7. Chapter Summary

This chapter analysed the land use conflicts in the Okavango Delta and highlighted the inherent conflicts between tourism and agriculture in the region. The emergence and development of contemporary land use in the region, such as WMAs and tourism, have created conflicts between traditional land uses and the modern ones. The conflicts are further ignited by the institutions that seem to favour contemporary land uses due to their income related benefits over farming, which is mostly unprofitable in the region.

Although the government offers compensation to farmers who have suffered loss due to wildlife, some farmers choose not to report the incidents of crop raiding and livestock predation. In cases where farmers report, some receive no compensation while those who receive compensation are generally not satisfied with the payments for various reasons. One of the most common reasons for the dissatisfaction is that the compensation payment is far exceeded by the loss suffered. Therefore, compensation payments are ineffective in the study areas.

The farmers seem to have negative attitudes towards the development of tourism in the Okavango Delta. They argue that the development of tourism conflicts with their farming

activities. However, they believe that the CBNRM could potentially improve their benefits from natural resources. Based on these discussions in this chapter, the following and final chapter discusses options and frameworks for developing institutions that more effectively address the conflicts and promote coexistence between the two livelihood activities. These are agriculture and tourism.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

“Economics is not a discipline that comes to correct answers - economies are too complex.” –

Adam Davidson

8.1. Introduction

The main aim of this study was to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana. To obtain the relevant results, this study used a case study of the Okavango Delta. The study generated six specific objectives designed to meet the main aim. This chapter provides a summary and conclusion of the results of the study. From the results, the chapter makes recommendations for promoting coexistence of conflicting livelihood activities in Botswana and other similar settings with land use conflicts.

The first objective of the study was to evaluate the literature on New Institutional Economics (NIE) and natural resource management. The objective was achieved through Chapter 2, wherein the definitions, historical background and the application of NIE natural resource management were provided. There is a distinction between ‘institutions’ and organisations. Institutions are understood mainly as rules of the game, such as traditions, customs, policies, acts and legislation. This study defined organisations as structural, institutional arrangements that serve as frameworks for structuring relational actions between agents. The chapter also differentiated between the old institutional economics (OIE) and the NIE. The main weakness of the OIE is that it failed to focus on neither theory building nor theory explanation, but rather on theory description, while the NIE systematically operationalised the insights from predecessor theories by adopting and modifying some of the neoclassical economics. Therefore, NIE integrates the study of institutions into neoclassical economics and explores the implications for human behaviour, economic development and policy reform. The chapter also discussed that

institutional arrangements such as property rights could be used to influence natural resource use, conflict, access and management.

The second objective was to synthesise the literature on sustainable tourism theories and rural livelihoods. The objective was achieved through Chapter 3. Some scholars propose that there is a need to promote sustainable tourism as a tool to attain sustainable development. Sustainability is defined through the PoS model as an integrative concept of four pillars of ecological sustainability, social and cultural sustainability, economic sustainability, and institutional sustainability. Within the broad scholarship of sustainability and sustainable development, there is sustainable tourism.

Sustainable tourism is loosely defined as the type of tourism that emphasises on attaining a balance in the use of natural resources while protecting and enhancing the opportunity for the future. There are various forms of sustainable tourism. Among these, there are pro-poor tourism, Community Based Tourism (CBT), ecotourism and agritourism. Ecotourism addresses the needs and wellbeing of local communities while agritourism promotes positive interactions between the local traditional stakeholders and tourists without compromising the sustainability of natural resources and social values. These forms of tourism are aimed at contributing positively to the sustainable livelihoods of rural communities.

The third objective of this study was to analyse the institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta. Chapter 5 achieved this objective. The chapter relied on document analysis using the methods discussed in Chapter 4. The Okavango Delta and other areas in Botswana have experienced an institutional shift in land tenure over the years. During the pre-colonial period, land resources were managed through customary law. The open-access and communal system for grazing was used. During the colonial period, the British colonisers merged the traditional or informal institutions with colonial institutions. Although the powers and roles of *dikgosi* were reduced, the British appreciated and acknowledged the role of *bogosi* in the decision-making and information dissemination settings

of the country. The institutional framework in independent Botswana uses combination common and customary laws in order to govern the country's land resources, reflecting interactive relations between formal and informal institutions. Generally, the land use institutions in Botswana oscillate between promoting coexistence and instigating conflict between agriculture and contemporary land uses, primarily conservation and tourism.

The fourth objective was to determine the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta. This objective is achieved in Chapter 6 using the empirical data collected through the methods discussed in Chapter 4. As it was argued in Chapter 1, to date, no study has been carried out in the Okavango Delta to establish the linkages between agriculture and tourism. This study, therefore, addressed this research gap by determining the economic benefits of tourism to local farmers. The indicators for economic benefits were salaries or wages from formal employment in tourism-related establishments, as well as earnings from informal employment in tourism-related establishments, the sale of agricultural produce, and the sale of livestock to tourism-related establishments. The chapter concluded that economic benefits derived by the farmers through employment are generally low. Furthermore, there are low and weak linkages of tourism with local small-scale farmers in the region.

The fifth objective was to analyse the conflict and coexistence of agriculture and tourism in the Okavango Delta using the empirical data collected. The objective was achieved through Chapter 7. The chapter concluded that the emergence and development of contemporary land use in the region, such as WMAs and tourism, have created conflicts between traditional land uses and the modern ones. As a result, rural livelihoods are negatively affected by the conflicts. Moreover, the farmers perceive that the development of tourism in their areas conflicts with both arable and pastoral farming.

The sixth and final objective of this thesis was to draw conclusions and recommend viable and sustainable options for the creation a mutually inclusive environment for the economic growth of both tourism and agriculture in the Okavango Delta based on the results of the study.

Therefore, the aim of this chapter is to present the conclusions and recommend a Sustainable Institutional Framework for the Coexistence of Tourism and Agriculture in Botswana and other developing countries faced with conflicts between livelihood activities.

8.2. Contribution

This study offered methodological, literature and practical contributions. The respective contributions are summarised as follows.

8.2.1. Methodological contribution

This study was the first to apply the NIE framework in analysing land use institutions generally, and tourism and agriculture institutions narrowly in Botswana and the study area. The study traced the historical institutional footprints and discussed their role in the management and utilisation of land resources. It also establishes how property rights and community participation affect choices, human behaviour and incentives in the Okavango Delta. This was also done through using game theory to formulate possible scenarios that define choices using payoffs. Game theory was useful in analysing the strategic interactions between conscious players whose aim is to maximise utility in the short-term. In Chapter 5, for example, the payoffs that face the farmers were conceptualised, and it was concluded that the incentives for using the communal grazing land are higher than the incentives of gaining exclusive grazing rights in Botswana and other similar settings where the consequences of using dual grazing are not well defined.

8.2.2. Literature contribution

This study has contributed to the literature in various ways. The study's literature contribution will be discussed under two subsections, namely (i) promoting the linkages between tourism and agriculture, and (ii) developing a sustainable institutional framework for promoting coexistence between tourism and agriculture.

8.2.2.1. Promoting the linkages between tourism and agriculture

As argued in Chapter 1 of this thesis, there is a dearth of literature on the linkages between agriculture and tourism in the Okavango Delta. This study addressed this research gap by assessing the linkages through analysing the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta. When managing natural resources in the midst of conflicting activities, such as tourism and agriculture, it is necessary to understand the current levels, directions and strengths of relations between the activities in order to propose mutually beneficial synergies that could promote coexistence. The diversity of tourism and agriculture specifically, and traditional and contemporary land uses broadly, may lead to conflict between stakeholders and inhibit rural livelihoods.

In order to promote the linkages between tourism and agriculture in the Okavango Delta, this study proposes a conceptual framework illustrated in Figure 8.1. Considering the low economic benefits of tourism to farming households established through the results in Chapter 6, there is a need to adequately plan for sustainable tourism development in order to strengthen the linkages of tourism with agriculture and the general domestic economy. In this study, a framework was conceptualised and illustrated in Figure 8.1. According to the proposed framework, the promotion of the linkages between tourism and agriculture is dependent on the bidirectional relationships between the four interactive components, namely; sustainable tourism, an enabling institutional environment, the local economy and an enabling business environment. The linkages represented in the inner component are necessary to promote the functionality and benefits derived by the four outer components (Anderies et al., 2003). The linkages were discussed in Chapter 2.

The sustainable tourism component advocates for the development of agritourism and ecotourism. Through promoting agritourism and ecotourism, the broader tourism sector may contribute positively to the socio-economic development of rural communities while protecting the ecological sustainability of the natural environment. This requires an enabling institutional

environment. Equally, the other form of sustainable tourism this study proposes is pro-poor tourism. Pro-poor emphasises the role of communities as critical drivers of the sustainable development of the tourism industry (Reid, 2003; Weaver, 2004). It is concerned with the pro-poor growth strategies to improve net benefits to the poor communities from the tourism industry, such as improving the broader participation of poor people in tourism decisions, equitable distribution of benefits and costs and enhancing the impacts on the poor within the parameters of commercial viability (Ashley et al., 2000; Chok et al., 2007).

It has been argued that an enabling institutional environment should be created in order to promote useful contribution of tourism in agrarian communities (Honey and Gilpin, 2009). The institutional environment should clearly define the responsibility of the industry to the communities, environment and the broader economy, and it should promote participation of the industry in decision-making and policy formulation.

The enabling institutional environment is necessary for defining the conditions for competition and coexistence in natural resource access and utilisation. The conceptual framework in Figure 8.1 defines the enabling institutional environment using the indicators of robust natural resource institutions discussed in Chapter 2. Substantially, the institutions should be aligned to natural resource conditions, clearly defined, create a room for community participation and devise accountability mechanisms for monitors, among other features (Ostrom, 1990; Dietz et al., 2003; Gandhi and Crase, 2009).

The enabling institutional environment is also necessary for the provision of timely and less costly conflict management to farmers and other community members. Furthermore, they should provide an avenue for the participation of farmers and the general community in decision-making processes and institutional design processes such as policy-formulation.

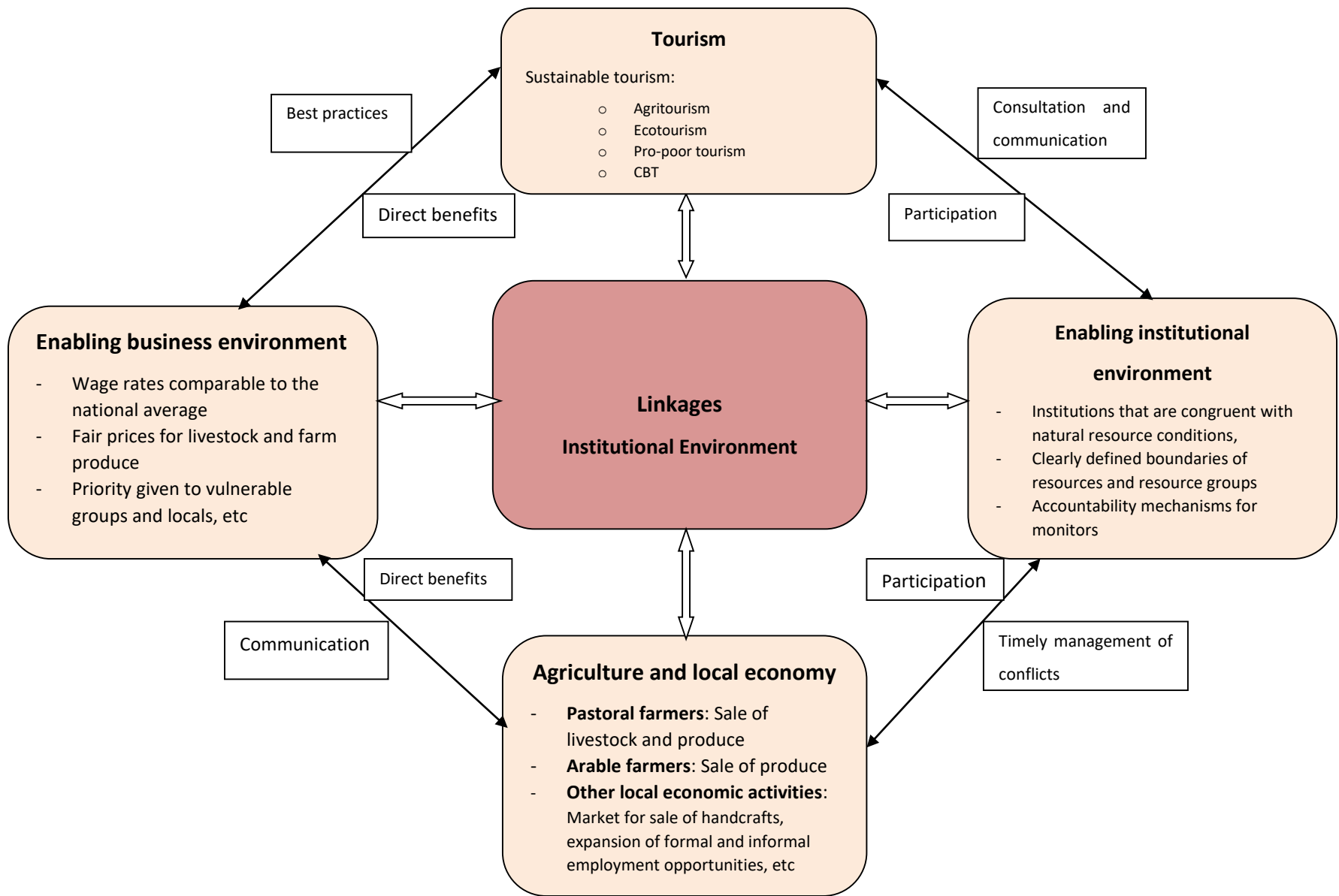


Figure 8.1: Promoting the linkages between tourism and agriculture (Source: Author's conceptualisation based on available literature and the results)

As it was discussed in Chapter 6, the weak economic linkages between tourism businesses and the local economy could be due to a mismatch in both the quality and quantity of labour and other resources required by the business and supplied by the local communities. Therefore, it is essential to strengthen such links through the creation of an enabling business environment (Figure 8.1). Such an environment should promote communication between the tourism industry and the farmers in order to align their needs and address the current mismatches in demand and supply. In return, the direct benefits derived by the locals from tourism could be improved. The enabling business environment should address the issues of low economic benefits derived by farmers and the local economy from tourism, such as low salaries and wages and low prices for livestock and agricultural produce. It should also reduce the leakages of money and other resources from the region through giving priority and preference to local agricultural produce, livestock and labour resources where applicable. The enabling business environment could, therefore, encourage best business practices while promoting the interrelations between the tourism industry and the local economy.

8.2.2.2. Developing a sustainable institutional framework for promoting coexistence between tourism and agriculture

This study's other unique contribution is through a three component sustainable institutional framework for promoting coexistence between traditional and contemporary land uses, specifically tourism and agriculture (Figure 8.2). Although the study uses the case of the Okavango Delta, the framework has been designed in such a way that the emphasis is not narrowly on tourism-agriculture conflicts, but instead on traditional vis-à-vis contemporary land uses in general. Therefore, it can be applied in Botswana, and other cases where there are conflicting land uses and livelihood activities. The three components are interactive as shown in Figure 8.2. The following subsections discuss the components.

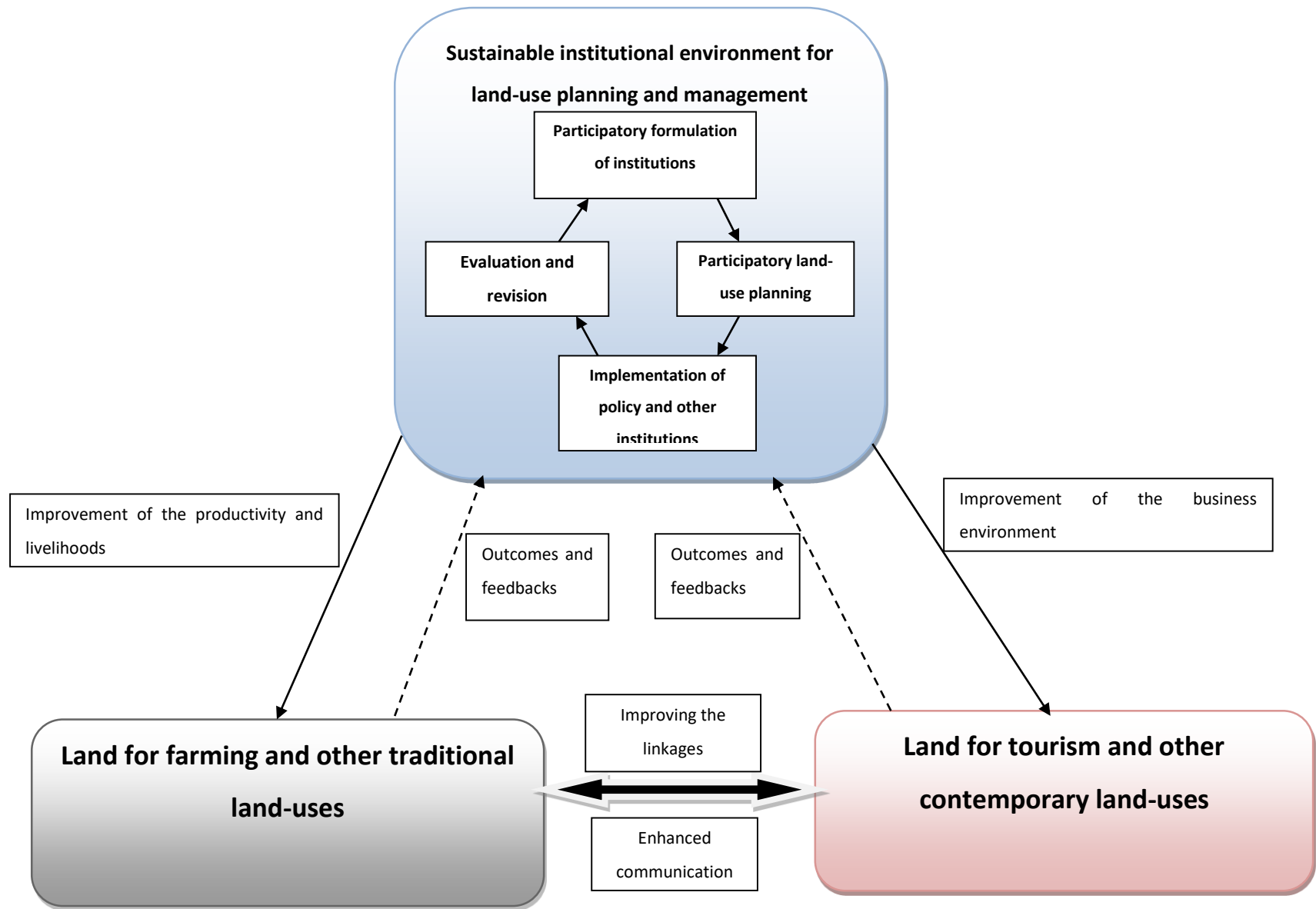


Figure 8.2: A sustainable institutional framework for promoting coexistence between tourism and agriculture (Source: Author's conceptualisation based on available literature and the results)

8.2.2.2.1. The sustainable institutional environment for land use planning and management

Land use institutions are interdependent arrangements, whose apparatus, such as property rights, operate within a complex system (Ollila, 2009). The system comprises of agents with divergent and competing interests. As argued in Chapter 2, a 'one-size-fits-all' approach by macro-institutions often fails to account for varying degrees of heterogeneity of ecological, geological and sociological features, as well as the intensity of natural resource conflicts within geographical settings. In Botswana, the land use institutions, such as the Tribal Land Act, have failed in their production, conservation and equity objectives (Chapter 5 through 7). The failure is not only manifested in the propagation of inequalities and the rich-poor divide (c.f. 5.4) but also in their role in instigating conflicts between traditional and contemporary land uses. Agricultural productivity is negatively affected by wildlife, and the linkages between tourism and agriculture are weak. One of the key failures of institutions that govern land use in Botswana noted in Chapter 7 is lack of communication and consultation of local communities when land use changes are made, or when new land uses are introduced.

In light of these concerns, the study proposes a sustainable institutional environment premised on four (4) key activities, which are a continuous process. These activities include;

- i. Participatory formulation of institutions
- ii. Participatory land use planning
- iii. Implementation
- iv. Evaluation and revision

The proposed activities are discussed as follows;

i. Activity 1: Participatory formulation of institutions

The first activity towards the creation of a sustainable institutional environment proposed by the framework is the participatory formulation of institutions. The participation should include traditional land users, contemporary land users and all other stakeholders. This could promote the development of institutions that are site specific or at least acknowledge the

complexities, conflicts and resource use dynamics that are prevalent within a geographical setting. Darkoh and Mbaiwa (2005: 81) note,

“...it is clear that nothing will change until the government institutional frameworks expand to include the “community voice”... Laws and institutions become sustainable when they come from the local people and other stakeholders and are enforced by them.”

The institutions that govern land use need to be informed by stakeholders and their realities, as well as by the ecological needs. The realities may be influenced by such factors as history and the existing power dynamics. This may provide a more holistic understanding of the agriculture-tourism interaction and interference, or the relations between land uses in general, within a setting. The incorporation of local needs and knowledge during the formulation stages of institutions can never be underestimated (Madigele, 2015). After the participatory formulation of institutions, the sustainable institutional environment should allow for participatory land use planning.

ii. Activity 2: Participatory land use planning

As argued in Chapter 5, the land in the Okavango Delta was primarily tribal land, governed by customary law. The land zoning process guided by the Tribal Land Act excluded the traditional land users, such as farmers. The spatial planning exercise inherent in the land zoning process was ill-planned with minimal and no consultation with farmers and other stakeholders (c.f. 7.4.1). The failure to consult the traditional land users and other land users have consequently resulted in the marginalisation and adverse effects of livelihoods of small-scale farmers and the poor (CAR, 2005). The top-down approach of spatial planning resulted in land dispossession and the relocations of rural communities, small-scale farmers and their herds. Furthermore, the areas of some farming lands were significantly reduced (c.f. 7.4.1).

The participatory land use planning could promote the zoning, allocation and development of land in a transparent, democratic and accountable manner. The bottom-up and participatory land use planning could also offer local and affected communities a considerable role to play in influencing steering land resources utilisation towards sustainability (Pienaar et al., 2013). Some new institutional economists argue that improved community participation often leads

to increased incentives to preserve and conserve natural resources by communities (Ostrom, 1990; Bromley, 1992; Pienaar et al., 2013). Participatory land use planning ought to be followed by the third activity, which is the implementation of policy and other institutions.

iii. Activity 3: Implementation of policies and other institutions

The third activity will ensure that the country's sustainable institutional environment for land use planning and management is enforced and attained through the implementation of the outcomes derived from the first two steps. Due to the participatory nature of the formulation of institutions and land use planning, this thesis proposes a decentralised implementation. This is because a decentralised approach is argued to be a robust and inclusive approach preferred for achieving sustainable resource use in a way that responds to community needs through transmitting control to communities and creating incentives for decision-making aligned to their needs (Elobeid, 2012). It has the potential to make institutions more responsive to local needs, thereby improving the efficiency and effectiveness of formal institutions. However, the implementation should not be treated as an end on its own, but rather as a means to an end. The evolving and dynamic resource needs require responsive institutions. Therefore constant monitoring, evaluation and revision of the institutions are proposed as the fourth activity within the continuous cycle of creating a sustainable institutional environment for land use planning and management.

iv. Evaluation and revision of policies and other institutions

As argued in Chapter 5, the changing institutional landscape of natural resources management in Botswana has resulted in trade-offs between land uses, sustainability goals and ecosystem services. The final step proposed for the construction and development of a sustainable institutional environment is the evaluation of the implemented institutions through the assessment of outcomes and feedback from both the traditional and contemporary land users. The sustainable institutional environment ought to be geared towards responding to the land needs of all stakeholders through a process of engagement, communication and consultation. The evaluation and revision processes could help in

innovating responses and solutions for conflict resolutions through lessons learnt. Such lessons could include, for example, the discrepancies between the amount paid as compensation for damage caused by wildlife and the amount of damage caused by the wildlife were identified in this study (Chapter 7). However, the relevant organisations such as the Department of Wildlife and National Parks, have not made follow-ups and do not have mechanisms for receiving feedback from the victims of the conflicts (c.f. 7.3.2).

Through the processes of evaluation and revision of institutions, the sustainable institutional environment for land use planning and management could be enhanced by making the institutions adaptable and dynamic to the changing land use needs that are site specific. The process could also be useful in offering guidance and alternative approaches to promoting the coexistence of agriculture and tourism within a setting.

8.2.2.2.2. Attaining a balance of contemporary and traditional land uses

The framework in Figure 8.2 proposes that the sustainable institutional environment for land use planning and management should attain a balance between contemporary and traditional land uses in order to simultaneously improve the productivity and livelihoods for farmers and develop the business environment for tourism-related businesses. This could be attained through the stakeholders' participation in the formulation of policies and other institutions, as well as through promoting a participatory approach to land use planning and management (activities 1 and 2). The environment should allow for communication of outcomes and feedback after the implementation of the institutions (activity 3) illustrated by the broken arrows in Figure 8.2. The feedback ought to be incorporated in the evaluation and revision exercise (activity 4) in order to better align the institutions to the needs of both contemporary and traditional land users.

Furthermore, the framework proposes that the enhanced communication between both tourism and agricultural land users could promote balanced and sustainable use of land resources in a mutually beneficial way. The enhanced communication may potentially improve the linkages between tourism and agriculture while minimising the leakages from the local economy and promoting rural livelihoods.

The following sections present the conclusions from the literature review and the primary data results.

8.3. Conclusions on the Review of Extant Literature

This section presents the main conclusions drawn from the literature review conducted in this study. The review of existing literature was done in Chapter 2 and Chapter 3. Chapter 2 evaluated the extant literature on NIE and natural resource management, while Chapter 3 reviewed the literature on sustainable tourism theories and rural livelihoods.

8.3.1. Conclusions from Chapter 2

Over the years, there has been a shift in economics towards using the institutional lens for developing of paradigms necessary for reviewing and defining such problems as natural resource scarcity and resource misallocation within a complex interconnected system (c.f. 2.1). The definitions and conceptualisations of the term ‘institutions’, however, diverge considerably over history and across academic disciplines (c.f. 2.2). According to North (1990), institutions are rules of the game (c.f. 2.2). The literature distinguishes between formal and informal institutions using their respective features. Despite this, it is argued that distinguishing the two is not always feasible due to the overlaps that exist between different institutional domains (c.f. 2.2).

One of the two key objectives of the institutions is to create certainty and improve the predictability of human behaviour and to facilitate order in human interactions by stabilising expectations (c.f. 2.2). In attaining these objectives, the institutions should clearly define the boundaries of natural resource access, exploitation and use in order to prevent conflicts and problems such as overharvesting (c.f. 2.2).

The scholarship of institutional economics mostly critiques the orthodox economics assumptions and influenced a methodological shift towards using inductive empirical

generalisation and historical approach in economic analysis (c.f. 2.3). One of the notable successes of the scholarship is its application of legal apparatus such as contracts and property rights to economics through tracing their contribution to economic growth and reduction in transaction costs (c.f. 2.3). Within institutional economics, there are two research paradigms, namely the OIE and the NIE. While the OIE embraced a stance of “methodological hostility” (Williamson, 1990a: 64) to neoclassical economics, the NIE systematically operationalised some of the insights from the neoclassical economics (c.f. 2.4). The NIE is concerned with determining the role played by the institutional environment in influencing changes in the governance structure, as well as driving human choices and economic behaviour (c.f. 2.5).

Institutions can be operationalised from a centralised approach or a decentralised approach (c.f. 2.5.1.1). A centralised approach relies on a top-down hierarchical approach to policy-formulation, while a decentralised approach involves local governments and users of natural resources in policy-formulation (c.f. 2.5.1.1). Before and during operationalisation, the institutions are faced with favorable *ex-ante* and *ex-post* transaction costs (c.f. 2.6.1). In order to reduce the transaction costs, some natural resource governance and institutions may rely on an adaptation of historical experiences, behaviours and identities that once proved to be effective and efficient in contemporary resource use challenges (c.f. 2.6.1). This phenomenon is referred to as ‘path dependence’ in literature.

A fragmented and unsustainable institutional environment may exasperate natural resource use conflicts. To address such conflicts, NIE formulates decision-making mechanisms using game theory (c.f. 2.6.1.2). In NIE, game theory is applied to illustrate how natural resource conflicts could be managed, and how allocative efficiency could be promoted through formulating probable outcomes from the strategic interaction between competing and complementary resource natural users (c.f. 2.6.1.2). The simulation of games necessitates an understanding of existing and potential linkages between resource users as these sources of fluctuations within the natural resource management environment (c.f. 2.6.2). The chapter concludes that despite the discussed important applications of NIE in natural resource

management, NIE is not the panacea to natural resource conflicts, hence the need to fuse it with lessons from the sustainable tourism theories and rural livelihoods (c.f. 2.7).

8.3.2. Conclusions from Chapter 3

The concept of sustainability is characterised by multiple definitions, with no single operational definition (c.f. 3.2). Some conceptualisations of sustainability give environmental considerations utmost importance, while others tend to be biased in favour of economic agents and economic growth (c.f. 3.2). Some frameworks used to conceptualise sustainability, such as the Triple Bottom Line (TBL) consider sustainability as an integrative concept with three main pillars of ecological sustainability, social and cultural sustainability, and economic sustainability (c.f. 3.2). However, the three-pillar conceptualisation lacks the fourth pillar of institutional sustainability, which calls for broader participation of local communities in natural resource governance processes (c.f. 3.2).

Within the broader scholarship of sustainability, there is sustainable tourism. Sustainable tourism is argued to have developed in response to adverse environmental, cultural and social externalities of tourism (c.f. 3.3). Over the years, there has emerged an array of sustainable tourism definitions. Amidst the myriad of different definitions, there seems to be a convergence towards the need for sustainable tourism to attain a balance in the use of natural resources (c.f. 3.3). There are various forms or types of sustainable tourism, including ecotourism, agritourism, CBT and pro-poor tourism. However, some forms of sustainable tourism seem to have a narrow focus on the economic benefits of tourism, which is argued to be inadequate (c.f. 3.3).

Some literature sources use the sustainable livelihoods framework as a holistic approach beyond the economic considerations. However, the interface between tourism and sustainable livelihoods cannot be fully understood within the sustainable livelihoods framework due to the peculiarity of the tourism industry, such as being a tertiary industry (c.f. 3.4). In order to address this shortcoming, Shen (2009) proposes a Sustainable Livelihoods

Framework for Tourism (SLFT) as a guiding framework in rural development when tourism is a livelihood strategy (c.f. 3.4).

8.4. Conclusions on document analysis (Chapter 5)

There are three main categories of land tenure in Botswana, namely; tribal land, state land and freehold land (c.f. 5.2). The enactment of the Tribal Land Act marked a shift towards the democratisation of rural land administration and modernisation of rural land tenure in response to such factors as population increase, new technologies and economic growth (c.f. 5.3.1). The Act also marked the transfer of land allocation powers to land boards and guided the land zoning process (c.f. 5.3.1).

Generally, the changing institutional landscape of land use institutions through the years reflects, to some degree, the concept of path dependence (c.f. 5.3.3.2). However, contemporary land use institutions have inherent and inhibitive transaction costs, and the burden of financing institutional change has been transferred to the individual agents (c.f. 5.3.3.3). Consequently, the inhibitive transaction costs may serve as disincentives for adopting, and adapting to, the institutional change.

The institutional changes that have occurred in the country over the years, such as land zoning, have negatively affected the livelihoods of small-scale farmers and rural communities adjacent to conservation areas (c.f. 5.6). The changes have imposed trade-offs between land uses, sustainability goals and ecosystem services, prompting the oscillation of institutions between promoting coexistence and igniting conflicts between agrarian communities and contemporary land use, primarily conservation and tourism (c.f. 5.6).

8.5. Conclusions on the empirical data

This section presents some of the main conclusions drawn from the empirical data collected to address two specific objectives, namely, to; (i) determine the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta, and (ii) analyse the conflict

and coexistence of agriculture and tourism in the Okavango Delta. The specific objectives were addressed in Chapter 6 and 7. The following subsections present the main conclusions of the chapters.

8.5.1. Conclusions on the current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta (Chapter 6)

The sample for household surveys provided a good representation of both gender groups with 47.5% respondents being females. Through a Pearson Chi-Square (χ^2) test of independence, it was determined that there is a statistically insignificant relationship between gender and formal employment in the tourism sector ($p > 0.05$). The ages of the respondents ranged from 21 years to 90 years. Although there was a statistically insignificant relationship between the age of the respondent and formal employment in tourism-related establishments ($p > 0.05$), the relationship between the age of the respondent and informal employment in tourism-related establishments was statistically significant ($p < 0.05$). The majority (54.8%) of the respondents possessed up to secondary education. The χ^2 test results revealed a statistically insignificant relationship between the education level attained by the household head and formal employment in tourism-related establishments ($p > 0.05$) and a statistically significant relationship between the education level attained by the household head and informal employment in tourism-related establishments ($p < 0.05$).

Only 8.6% of the households were formally employed in tourism-related establishments, and only 21.3% of the respondents reported that other members of the household were employed formally in the sector. Just 2.1% of other family members occupied managerial positions, while the majority were employed at lower ranks. None of the households formally employed in the tourism sector earned salaries above BWP 5501.00. The chapter argued that there is an array of factors that contribute to low rates of employment on a formal basis in the study areas. These are lack of education, skills and training, as well as a mismatch in both the quality and quantity of labour resources required by the business and supplied by the local communities.

The results further revealed that only 39.4% of the respondents were informally employed in the tourism sector, the majority of which (66.0%) earned less than BWP1500.00. Generally, there are weak and sporadic economic linkages between local subsistence farmers and the tourism industry generated by informal employment opportunities.

The results on the sale of agricultural produce to tourism-related businesses revealed that only 10.9% of the respondents reported that they had sold agricultural produce to tourism-related businesses in the past three months. Furthermore, a significant proportion (91.7%) of the respondents cited human-wildlife conflict as one of the main constraints of not having excess agricultural produce for sale to tourism-related businesses. The mean monthly earnings from the sale of agricultural produce are estimated to be BWP381.25. Generally, the income derived by local small-scale farmers from tourism is low. This is due to the weak backward linkages between agriculture and tourism in the Okavango Delta (Harrison and Maharaj, 2013).

Similarly, the results on the sale of livestock to tourism-related businesses indicated that only 9% of the respondents reported that they had sold livestock to tourism-related businesses in the past three months. However, the study concluded that tourism-related establishments are low-priced channels for the sale of livestock due to the discrepancies between the prices of livestock paid by tourism-related businesses compared to other buyers such as the BMC. Such discrepancies contradict the principles of such sustainable tourism types as ecotourism, pro-poor tourism and agritourism.

8.5.2. Conclusions on the analysis of the conflict and coexistence of agriculture and tourism in the Okavango Delta (Chapter 7)

Some of the traditional lands uses in the Okavango Delta identified through empirical data were residential, arable farming, livestock farming, fishing, harvesting of natural resources and livestock grazing. The respondents identified ranches, commercial establishments associated with tourism such as camps, lodges and hotels, other commercial establishments such as shops, national parks, WMAs, CHAs and the erection of veterinary fences as

contemporary land uses in the region. The emergence of contemporary land uses in the region is argued to have led to some conflicts between traditional land uses and the contemporary ones.

The majority of the arable farmers (76.3%) indicated that they had experienced raiding by wildlife in the last three years. The wildlife does not only damage crops, but also lead to destructions to dwellings and other properties in the farm. Despite the damages caused by wildlife during raiding, 23.3% of the farmers whose farms were raided in the past three years indicated that they did not report the raiding to relevant authorities. Some of the reasons for non-reporting included the failure of authorities to attend to the scenes (29.0%), low compensation (29.0%) and unfenced fields (6.5%), among others. The majority (58%) of the respondents who reported crop-raiding incidents by wildlife to relevant authorities noted that they had not been compensated.

Similarly, the majority (70.5%) of the livestock farmers indicated that they had experienced livestock predation in the last three years, the majority (51%) indicated that they had not reported the predation incidences to the relevant offices. Some farmers noted that the authorities often fail to attend to the scenes (52.1%) among other reasons for not reporting. The Department of Wildlife and National Parks and its PAC unit are centralised and are therefore susceptible to the overall shortcomings of centralisation in Botswana (Osborn and Parker, 2003). Some of their shortcomings include limitations of financial and human resources.

The institutions in Botswana generally often fail to promote the participation of both the contemporary and traditional users of land resources in policy-formulation. However, in NIE, it is argued that the failure to regard and acknowledge the diversity and complexity of natural resources utilisation and needs in various communities often leads to the general failure to attain a balance between the promotion of conservation and rural livelihood (Plummer and Slaymaker, 2007). The results also revealed that the hunting ban removed the incentive of communities to protect wildlife resources. Generally, the incentive of protecting the wildlife resources is exceeded by the benefits of such an action (Table 7.8).

8.6. Recommendations

In light of the results and conclusions derived from this study, some recommendations have been formulated. This section presents such recommendations using two categories, namely; (i) general recommendations, and (ii) recommendations for future research. The categories are discussed in the following subsections.

8.6.1. General recommendations

In addition to the proposed conceptual frameworks in Figures 8.1 and 8.2, this study makes some other general recommendations as follows;

i. Addressing open-access concerns and the tragedy of the commons

The analysis in Chapter 5 revealed that the 'best' strategy for a farmer with exclusive land rights is to adopt a dual grazing system (c.f. 5.3.3.4). It is argued that such a strategy is promoted by the lack of mechanisms for excluding farmers with private rights from the communal grazing lands. This study recommends that the government, through relevant institutions, should introduce and enforce penalties for farmers with exclusive grazing land rights but use communal grazing land. This should be promoted through participatory approach where farmers are encouraged to ensure enforcement through reporting incidences of dual grazing within the communal lands. Such an act may promote sustainable use of grazing land and avoid overharvesting while promoting the productivity of livestock owned by small-scale farmers who cannot afford to attain exclusive land rights for grazing.

ii. Dealing with the underlying institutional complexities and irregularities

The institutional changes in Botswana, such as dispossession and zoning of land, have led to adverse effects on the livelihoods of small-scale farmers and other vulnerable groups while benefiting the elite few as argued in Chapter 5 (c.f. 5.4.2.1). The government should involve

the affected stakeholders in performing an in-depth diagnosis of the institutional structures through mapping of land uses and conflicts in order to determine sources of conflicts, overlaps and other irregularities. This is linked to Activity 1 for creating a sustainable institutional environment for land use planning and management (Figure 8.2). The enactment of formal institutions should acknowledge the heterogeneities and diversities prevalent in communities within the country, as well as the extant and operational informal institutional arrangements.

iii. Setting appropriate compensation rates

One of the key findings from empirical data is that the compensation rates paid by the government to farmers often do not match the extent of the damages done by wildlife to livestock and crops. In the process, the livelihoods of the farmers are negatively affected. Therefore, the institutional instruments should be revised and mechanisms of calculating the value of the damage caused and value lost should be developed. The mechanisms should use the market rates and other objective measures to calculate the costs related to wildlife damages. This will also address the concerns of lack of compensation for damage caused to harvested crops.

iv. Promoting community participation

The study argued that such institutional decision-making processes as the safari-hunting ban that uses the top-down approach have proven to be retrogressive. As a result, they have had negative socio-economic and ecological consequences. The government should realise and release the potential and capabilities of local communities in sustainably managing their natural resources through promoting community participation in the processes of creating a sustainable institutional environment for land use planning and management (Figure 8.2). This could promote positive attitudes of local communities towards natural resources.

v. Promoting and strengthening the agriculture-tourism linkages

The study has noted low economic contributions of tourism to the livelihoods of farmers. There is a need to instigate changes in favour of coexistence between tourism and agriculture by improving the linkages between the two sectors, reducing the leakages and creating the reciprocity of benefits from both sectors. It, therefore, recommends that this should be addressed not only through the framework in Figure 8.1, but also addressing the challenges faced by ecotourism projects in communities in order to improve their contribution to rural development, ecological and environmental sustainability and to sustainable rural livelihoods. This ought to be done by providing support to the existing and emerging CBNRM projects. The government and the tourism sector should provide the support through their corporate social responsibility exercises. There should be institutions and initiatives in place to empower farmers in order to improve the agricultural productivity, reduce the reliance on formal employment opportunities within the tourism sector, and to promote the mutually beneficial relations between the tourism industry and the small-scale agricultural sector.

8.6.2. Recommendations for future research

The study has identified some research gaps that could be considered in future research as follows;

i. Implementation of the conceptual frameworks developed in this study

Researchers have to implement the frameworks within the Okavango Delta and other similar settings in order to enhance the proposed models or frameworks. This would improve its applicability and adaptability. The research should use a time series approach in order to determine the changes in the intensity of conflicts over time.

ii. Expansion of the analysis using more indicators

This study narrowly analysed the economic contributions of tourism to farming households. However, it acknowledges that farmers may be benefiting in other ways from the tourism sector, other than through economic or financial means. Therefore, future research should

analyse the contribution of tourism to farmers using a more holistic approach that includes other benefits such as cultural preservation and social benefits, among others.

iii. Using other models and expanding the number of variables

This study used the multivariate probit regression models for determining the relationships between the socio-economic and demographic attributes of the farming household head against both formal and informal employment in the tourism sector. However, the majority of the variables were statistically insignificant. Other researchers should improve the quality of the results by expanding the number of independent variables and using other models to define the relationships.

iv. Increasing the sample size

Future research ought to expand the sample size in order to improve the generalisation of the results. The sample should increase the number of villages within the Okavango Delta beyond four. Furthermore, the researchers could also enhance the analysis by making comparisons between case studies.

8.7. Chapter Summary

This chapter addressed the sixth and final specific objective of this study by recommending viable and sustainable conceptual frameworks for creating a mutually inclusive environment for the economic growth of both tourism and agriculture in the Okavango Delta. The first frameworks aim at promoting the linkages between tourism and agriculture (Figure 8.1), while the second conceptual framework proposes a sustainable institutional environment premised on four key activities, which are a continuous process (Figure 8.2). The chapter finally presented general recommendations and recommendations for future research.

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Appendix 1: Key Informant Interview Guide

Developing a Sustainable Institutional Framework for the Coexistence of Tourism and Agriculture in Botswana

Key Informant Interview Guide

My name is Patricia Kefilwe Mogomotsi. I am a PhD candidate at North West University. I am kindly inviting you to participate in this study entitled, "*An institutional framework for the sustainable co-existence of tourism and agriculture in Botswana*", which seeks to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana.

The information obtained from this interview will be used purely for academic purposes and possibly as input to government policy. Your responses will not be used for any research other than the one indicated. Your participation in this survey is voluntary.

You do not have to answer questions that you do not want to answer. You may end the interview at any time you want to. However, your honest answers to these questions will help us better understand what people think, say and do about the subject matter, which would help us draw well informed conclusions.

The proceedings of this interview will be recorded with your approval.

Date: _____

Organisation: _____

Position of the key informant: _____

A. Demographic data

A1. Gender

Male	Female
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A2. Age _____

A3. Highest level of formal education

None	Primary	Secondary	Tertiary	Other
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A4. Length of time in current position (years) _____

B. Land use

- a. What are the main traditional land uses for communities in the Okavango Delta? Please rank them in order of importance.
- b. In your opinion, do the above mentioned traditional activities conflict with other land use activities in the Okavango Delta?

Yes	No
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- i. If yes, how?

- c. How do you characterise the economic contributions of tourism development on the local community?

Very significant	Significant	Neutral	Little	Very little
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- d. Are the impacts of tourism development in the Okavango generally positive or negative? Why?
- e. Are they any relevant household livelihood alternative measures supported by your Department to:
 - i. Reduce their dependence on natural resource for economic gains, and/or
 - ii. To support or promote agricultural productivity?
 - iii. Do you have any suggestions for household livelihood alternatives?
- f. Is the current land use tenure in the Okavango Delta environmentally sustainable in your expert opinion? Why or why not? [probe]

C. Land use conflicts

- a. What kinds of land use conflicts or grievances are reported to your offices?
- b. How often are such grievances reported to your office?
- c. What help is offered to the complainants?
 - i. Does your office make follow-up to enquire if the complainants are satisfied with the help they receive?
 - ii. How does your office make follow-up?
- d. What do you think should be done to minimise land use conflicts you mentioned above?
 - i. What efforts are made by your Department to educate communities about environmental sustainability, sustainable natural resource management and conservation?
 - ii. How did the community receive such efforts?
 - iii. What are the challenges?
- e. What roles do the community and the traditional leadership play in the resolution of land use conflicts?
- f. In your view, what is the general attitude of the communities to the existing land use conflict resolution mechanism?
- g. Do you think that the land use conflict mechanisms are efficient and effective? If yes, why? If no, what are the challenges?
- h. Do the land use conflict mechanisms positively impact the economic and social wellbeing of the communities they are intended for?

D. Institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta

- a. What are the major institutional frameworks (by category – policies, strategy documents etc.) that have impacted on wildlife management in Botswana generally and in Okavango Delta particularly?
 - i. What are the strengths and weaknesses of such institutions? Are the institutions in conflict with one another? [probe]
 - ii. Were communities involved in the drafting and/or crafting of such institutions? If no, what are the possible reasons? What would help to encourage such interactions? What are the challenges?

- iii. How are communities informed about such institutions? What would help to encourage interactions between your office and communities? What are the challenges?
- iv. How receptive are communities to such institutions? What are the challenges?
- b. What is the role of communities in the formulation of environmental policies, especially those that have the potential to affect their social and economic wellbeing?
- c. How would you characterise the nature of the institutional relationship between Community Based Organisations (CBOs) in the Okavango Delta and your Department?
 - i. How would you characterise the practical interactions between CBOs organisations in the Okavango Delta and your Department? What are the challenges? What would help to encourage such interactions?
- d. In your opinion, does tourism improve the livelihood of farming households?
 - i. If yes, in what form? If no, what are the possible reasons?

E. Closing questions

- a. Do you have any further thoughts of tourism-agriculture conflicts in general?
- b. Are there other people you think we should talk to?

Thank you very much for your time. Your knowledge and insights will be very helpful to my study.

Appendix 2: Focus Group Discussion Guide (English)

Developing a Sustainable Institutional Framework for the Coexistence of Tourism and Agriculture in Botswana

Focus Group Discussion Guide

My name is Patricia Kefilwe Mogomotsi. I am a PhD candidate at North West University. I am kindly inviting you to participate in this study entitled, “*An institutional framework for the sustainable co-existence of tourism and agriculture in Botswana*”, which seeks to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana.

The information obtained from this interview will be used purely for academic purposes and possibly as input to government policy. Your responses will not be used for any research other than the one indicated. Your participation in this survey is voluntary.

You do not have to answer questions that you do not want to answer. You may end the interview at any time you want to. However, your honest answers to these questions will help us better understand what people think, say and do about the subject matter, which would help us draw well informed conclusions.

The proceedings of this interview will be recorded with your approval.

Date: _____

Name of village: _____

Group number: _____

Group composition:

Gender	Number of participants
Male	
Female	
Total	

Land use

- a. What are the main traditional land uses for communities in the Okavango Delta? Please rank them in order of importance.
- b. In your opinion, do the above mentioned traditional activities conflict with other land use activities in the Okavango Delta?

Yes	No
-----	----

- i. If yes, how?
- c. What are the contemporary land uses in the Okavango Delta? Please rank them in order of importance.
- d. How do you characterise the economic contributions of tourism development on the local community?

Very significant	Significant	Neutral	Little	Very little
------------------	-------------	---------	--------	-------------

- e. Are the impacts of tourism development in the Okavango generally positive or negative? Why?

F. Land use conflicts

- a. What kinds of land use conflict or grievances have you experienced in the last 3 years?
- b. What are the primary factors of land use conflicts in your area?
 - i. Which of these factors are a result of agriculture, tourism and the government?
 - ii. How do relevant parties address these factors?
- c. Do the villagers report such conflicts to relevant offices? If no, what are the reasons?
- d. Are you generally satisfied with the help you get from relevant government departments? Please explain. What are the challenges?
- e. What roles do the community and the traditional leadership play in the resolution of land use conflicts?
- f. Do the land use conflict mechanisms positively impact of the economic and social wellbeing of the communities they are intended for?
- g. Do you think that the land use conflict mechanisms are efficient and effective? If yes, why? If no, what are the challenges?
- h. What do you think should be done to minimise land use conflicts you mentioned above?

G. Institutions that influence the existence and the relationship between tourism and agriculture in the Okavango Delta

- a. Which institutional frameworks (organisational, regulatory and legal) are you aware of?
- b. What are the strengths and weaknesses of such institutions? Are the institutions in conflict with one another? [Probe]
- c. Do you think institutional frameworks have positively contributed to wildlife and environmental management? If yes, what have been their major contributions? If no, what are their shortcomings?
 - i. Were communities involved in the drafting and/or crafting of such institutions? If no, what are the possible reasons? What would help to encourage such interactions? What are the challenges?
 - ii. How are communities informed about such institutions? What would help to encourage interactions between your office and communities? What are the challenges?
 - iii. How receptive are communities to such institutions? What are the challenges?
- d. What role does your community play in the formulation of environmental policies, especially those that have the potential to affect your social and economic wellbeing?
- e. How would you characterise the nature of the institutional relationship and practical interactions between community based organisation (CBOs) officials and the broader community?
- f. In your opinion, does tourism improve the livelihood of farming households?
 - i. If yes, in what form?
 - ii. If no, what are the possible reasons?
 - iii. What would help to encourage such interactions? What are the challenges?

H. Closing questions

- a. Do you have any further thoughts of tourism-agriculture conflicts in general?

Thank you very much for your time. Your knowledge and insights will be very helpful to my study.

Appendix 3: Focus Group Discussion Guide (Setswana)

**Tsamaiso ya sennelaruri e e thusang gore Bojanala le Temo thuo di
tswelele mmogo di sa gotlha-gotlhane mo Botswana**

Focus Group Discussion Guide

My name is Patricia Kefilwe Mogomotsi. I am a PhD candidate at North West University. I am kindly inviting you to participate in this study entitled, “*An institutional framework for the sustainable co-existence of tourism and agriculture in Botswana*”, which seeks to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana.

The information obtained from this interview will be used purely for academic purposes and possibly as input to government policy. Your responses will not be used for any research other than the one indicated. Your participation in this survey is voluntary.

You do not have to answer questions that you do not want to answer. You may end the interview at any time you want to. However, your honest answers to these questions will help us better understand what people think, say and do about the subject matter, which would help us draw well informed conclusions.

The proceedings of this interview will be recorded with your approval.

Date: _____

Name of village: _____

Group number: _____

Group composition:

Gender	Number of participants
Male	
Female	
Total	

Tiriso Ya Lefatshe

- a. Ke mehuta efe ya tiriso lefatshe ka mekgwa ya segologolo, e gantsi merafe ee nnang mo makgobokgobong a Okavango ee dirisang? Tswee-tswee, tlhomaganya mehuta e go ya ka botlhokwa ja yone.
- b. Go ya ka kakanyo ya gago, a mehuta ee kailweng fa godimo e kgoreletsa mehuta e mengwe ya tiriso lefatshe kwa makgobokgobong a Okavango?

Ee	Nnyaa
----	-------

- i. Fa karabo ele ee, tlhalosa gore jang?
- c. Ke efe gape mehuta ya go dirisa lefatshe ele ya segompiano, kwa makgobokgobong a Okavango? Tswee-tswee e tlhomaganye ka botlhokwa ja yone.
- d. O ka kaya jang maduo a tlabolola ya Bojanala mo matselong a batho ba kgaolo?

A bonala thata	A a bonala	A mo selekanyetsong	Ga se aa kalo	Maduo ga se a sepe
----------------	------------	------------------------	---------------	--------------------

- e. A maduo a go tlabolola Bojanala mo kgaolong ya Okavango ke aa molemo kgotsa aa bosula? Ke ka go reng o rialo?

B. Kgotlha-kgotlhanano mo tirisong ya lefatshe

- a. Ke dikgotlhang dife tsa tiriso ya lefatshe kana matshwenyego ao a itemogetseng mo dingwageng tse tharo tse di fetileng?
- b. Ke dintlha di fe tsa konokono tse di bakang kgotlhang mo tirisong ya lefatshe mo kgaolong ya gago?
 - i. Mo dintlheng tse, ke di fe tse di bakiwang ke temo thuo, Bojanala le mmuso?
 - ii. Baemedi ba ba lebaneng ba itebaganya jang le dintlha tse?
- c. A banni ba motse ba bega matshwenyego a kwa diofising tse di lebaneng? Fa karabo ele nnyaa, mabaka ke eng?
- d. A o itumelela thuso e o e boneng go tswa kwa maphateng aa lebaneng a mmuso? Tswee-tswee tlhalosa. Dikgwetlho tse di leng teng ke eng?
- e. Seabe sa morafe le baeteledipele ba motse/Dikgosi mo go rarabololeng dikgotlhang tsa tiriso ya lefatshe ke eng?
- f. A methale ee leng teng ya go rarabolola dikgotlhang tsa lefatshe e thusa mo go tokahatseng seemo sa matselo le itsholelo ya batho ba ba lebaneng?

- g. A methale e ya go rarabolola dikgotlhang tsa tiriso ya lefatshe e na le mosola e bile e a bereka? Fa karabo e le Ee, ke ka go reng o rialo? Fa karabo e le nnyaa, dikgwetlho e ka tswa e le eng?
- h. O akanya gore go ka dirwang go hokotsa dikgotlhang tsa tiriso ya lefatshe tse o di boletseng fa godimo?

C. Melawana le ditsamaiso tse di ka thusang go tlhomama le go lomagana ga Bojanala le Temo thuo kwa makgobokgobong a Okavango

- a. Ke melao efe le ditsamaiso tse o di itseng?
- b. Ditsamaiso tse, di na le dithata di le kafe le gore ga di kgone go le kafe? A di a gotlha-gotlhana ka bo-tstone? [Probe]
- c. A melawana le ditsamaiso tse, di thusitse mo tsamaisong le tlhokomelo diphologolo le makgabisa naga? Fa karabo e le Ee, seabe se segolo sa ditsamaiso le melawana e nnile eng? Fa karabo e le nnyaa, di reteletswe fa kae?
 - i. A merafe e ne ya akarediwa mo go kwalweng kgotsa go rulaganngweng ga melawana e? Fa karabo e le nnyaa, mabaka e a tswa e le eng? Ke eng se se ka thusang go rotloetsa tirisanyo e? Dikgwetlho ke eng?
 - ii. Merafe e bolelelwa jang ka ditsamaiso tse? Ke eng se se ka thusang go rotloetsa tirisanyo ya ofisi ya gago le merafe? Dikgwetlho tse di leng teng ke eng?
 - iii. Merafe e amogela jang magotla a? Dikgwetlho ke eng?
- d. Seabe sa morafe wa gago ke eng mo go dirweng ga mananeo a tsa tikologo, segolo bogolo aa ka kgonang go tokahatsa matshelo a batho le itsholelo?
- e. O ka kaya jang tomagano le tirisanyo fa gare ga bagolwane ba makgotla a merafe (CBOs) le merafe ka kakaretso?
- f. Go ya ka kakanyo ya gago, a bojanala bo tokahatsa matshelo a malwapa a a itshetsang ka temo thuo?
 - i. Fa karabo e le ee, ka tsela e ntseng jang?

- ii. Fa karabo e le nnyaa, mabaka e ka tswa e le eng?
- iii. Ke eng se se ka thusang go rotloetsa tshwaragano ya go nna jaana? Dikgwetlho ke eng?

D. Dipotso tsa go wetsa

- a. A o na le megopolo e mengwe tebang le kgotlha-kgotlhano ya bojanala le temo thuo ka kakaretso?

Re lebogela nako ya gago. Kitso le megopolo ya gago e tlaa thusa thata mo dipatlisisong tsa me.

Appendix 4: Household survey questionnaire

Developing a Sustainable Institutional Framework for the Coexistence of Tourism and Agriculture in Botswana

Household survey questionnaire

My name is Patricia Kefilwe Mogomotsi. I am a PhD candidate at North West University. I am kindly inviting you to participate in this study entitled, "*An institutional framework for the sustainable co-existence of tourism and agriculture in Botswana*", which seeks to develop and propose a sustainable institutional framework that will allow for the coexistence of both tourism and agriculture in Botswana.

The information obtained from this interview will be used purely for academic purposes and possibly as input to government policy. Your responses will not be used for any research other than the one indicated. Your participation in this survey is voluntary. The completion of this questionnaire is highly confidential and your identity will be kept anonymous. You do not have to answer questions that you do not want to answer. You may end the interview at any time you want to. However, your honest answers to these questions will help us better understand what people think, say and do about the subject matter, which would help us draw well informed conclusions.

Thank you for your cooperation in participating in the survey.

Patricia Kefilwe Mogomotsi
PhD Candidate
North West University

SECTION A: Demographic and socio-economic data

Please Tick the Box That Best Applies to You

A1. Name of village _____

A2. Gender

Male	Female
------	--------

A3. Age _____

A4. Highest level of formal education

None	Primary	Secondary	Tertiary	Other
------	---------	-----------	----------	-------

A5. Ethnic background

OvaHerero	Wayeyi	Tawana	Other (specify)
-----------	--------	--------	-----------------

A6. Employment status

Unemployed	Informally employed	Formally employed
------------	---------------------	-------------------

A7. How many people live in this household? _____

A8. How many people who live in this household have a cash income?

No one	One	Two	Three	Other (specify) _____
--------	-----	-----	-------	--------------------------

A9. How much, on average, is the monthly household income? _____

SECTION B: The current economic benefits of tourism to local subsistence farmers in the rural Okavango Delta

Please tick the box that best applies to you

Question	Response	Code
B1. Are you employed in any tourism organisation in your village?	1.Yes 2.No	1..... 2.....
B2. If yes, where are you employed?	1.Lodge	1.....

	2.Camp 3.Hotels and Restaurant 4.Safaris 5. Other (specify) _____	2..... 3..... 4..... 5.....
B3. What are you employed as?	1.Tour guide 2.Cook 3.Gate keeper 4.Manager 5.cleaner 6.Driver 7.Other (specify) _____	1..... 2..... 3..... 4..... 5..... 6..... 7.....
B4. How long have you been employed in years?	_____	
B5. How much do you earn on a monthly basis?	1.Below BWP 1500 2.BWP1501-BWP 3500 3.BWP 3501-BWP 5500 4.BWP 5501-BWP 7500 5.Above BWP 7501	1..... 2..... 3..... 4..... 5.....
B6. Are there any members of the family employed in the tourism business? B6.1. If yes, how many?	1.Yes 2.No _____	1..... 2.....
B7. Where are they employed as?	1.Tour guide 2.Cook 3.Gate keeper 4.Manager 5.Cleaner 6.Driver 7. Other (specify)_____	1..... 2..... 3..... 4..... 5..... 6..... 7.....
B8. How much do they earn on a monthly basis?	1.Below BWP 1500 2.BWP1501-BWP 3500 3.BWP 3501-BWP 5500 4.BWP 5501-BWP 7500 5.Above BWP 7501	1..... 2..... 3..... 4..... 5.....

<p>B9. What other tourism activities is your household involved in?</p>	<p>1.Hotels and restaurants 2.Transport 3.Renting 4.Sale of handcrafts 5.Sale of food and services 6.Sales of pottery 7. Other (specify) _____</p>	<p>1..... 2..... 3..... 4..... 5..... 6.....</p>
<p>B10. Do you sell agricultural produce (e.g. milk, maize, beans etc.) to tourism-related businesses?</p> <p>B10.1. What kind of produce do you sell to tourism-related businesses?</p> <p>B10.2. How much on average do you make monthly from the sales?</p>	<p>1. Yes 2. No</p> <hr/> <hr/> <hr/> <p>_____</p>	<p>1..... 2.....</p>
<p>B11. Do you sell livestock to tourism-related business?</p> <p>B11.1. If yes, what kind of livestock?</p> <p>B11.2. How many have you sold in the past 3 months?</p> <p>B11.3. How much on average do you sell per head?</p>	<p>1. Yes 2. No</p> <p>1. Goats 2. Sheep 3. Cattle 4. Donkeys 5. Other (specify)_____</p> <p>1. Goats _____ 2. Sheep _____ 3. Cattle _____ 4. Donkeys _____ 5. Other (specify)_____</p> <p>1. Goats: BWP _____ 2. Sheep: BWP _____ 3. Cattle: BWP _____ 4. Donkeys: BWP _____</p>	<p>1..... 2.....</p> <p>1..... 2..... 3..... 4..... 5.....</p> <p>1..... 2..... 3..... 4..... 5.....</p> <p>1..... 2..... 3..... 4.....</p>

	5. Other: (specify) BWP _____	5.....
B12. Of all the tourism activities which one contributes the highest income?	1.Hotels and restaurants 2.Transport 3.Renting 4.Sale of handcrafts 5.Sale of food and services 6. Sale of agricultural produce 7.Sales of pottery 8. Other (specify)_____	1..... 2..... 3..... 4..... 5..... 6..... 7.

B13. In your view do you think members of your household benefit from tourism in this area?

1. Yes..... 2.No.....

B14. If yes, how do they benefit from tourism activities?

.....
.....
.....

B15. If no, what are the reasons for not benefiting from tourism (e.g. lack of education and skills, inappropriate policies, lack of access to resources, poverty etc.)

.....
.....

B16. What do you think should be done to improve the contribution of tourism to households?

.....
.....
.....

SECTION C: Land use conflicts

C1. Livestock-wildlife conflicts

C1.1. Do you own livestock?

Yes	No
-----	----

C1.2. If yes, how many of these do you own?

Type of livestock	Number
Cattle	

Goats	
Sheep	
Donkeys	
Others (specify) _____	

C1.3. Have you had any of your livestock killed by wildlife in the last 3 years?

Yes	No
-----	----

C1.4. Did you report wildlife predation to relevant authorities?

Yes	No
-----	----

C1.4.1. If no, why did you fail to report? _____

C1.4.2. If yes, where you compensated?

Yes	No
-----	----

C1.4.2.1. If yes, were you satisfied with the compensation amount you received?

Yes	No
-----	----

C1.4.2.2. Why? _____

C2. Arable farming-wildlife conflict

C2.1. Do you have *masimo* (ploughing field)?

Yes	No
-----	----

C2.2. Where is your *tshimo* located? _____

C2.3. Have you experienced field raiding by wildlife in the last 3 years?

Yes	No
-----	----

C2.4. Did you report wildlife predation to relevant authorities?

Yes	No
-----	----

C2.4.1. If no, why did you fail to report? _____

C2.4.2. If yes, were you compensated?

Yes	No
-----	----

C2.4.2.1. If yes, were you satisfied with the compensation amount you received?

Yes	No
-----	----

C2.4.2.2. Why? _____

C3: General farming-wildlife conflicts

C3.1. Do you experience poaching in your area?

Yes	No
-----	----

C3.1.1. If the answer is yes, specify the type of poaching

Subsistence	Commercial	Hybrid
-------------	------------	--------

C3.2. Suggest ways in which Tourism Policy can contribute to a reduction in poaching.

CBNRM	Tapping consumers surplus from tourists with a willingness to pay for adverse impacts of tourism on agriculture	Other (specify) _____
-------	---	--------------------------

C3.3. Are communities actively engaged in anti-poaching efforts?

Yes	No
-----	----

C3.3.1. If yes, how? _____

C3.3.2. If no, why? _____

C3.4. In your view, is there a link between damage on agricultural produce and poaching incidents?

Yes	No
-----	----

C3.4.1. If yes, how? _____

Please tick the box that best applies to you

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
C3.5. Veterinary fences have negative impacts on livestock farming					
C3.6. Veterinary fences have negative impacts on arable farming					
C3.7. Veterinary fences are important in separating grazing areas					
C3.8. Wildlife Management Areas (WMA) conflict with arable farming					
C3.9. WMA conflict with livestock farming					

C3.10. Protected Areas (PAs) conflict with crop farming					
C3.11. Protected Areas (PAs) conflict with livestock farming					
C3.12. Development of tourism in my area conflicts with livestock farming					
C3.13. Development of tourism in my area conflicts with crop farming					
3.14. Development of CBNRM in my area is important					
3.15. The government addresses the land use conflicts timeously					
3.16. The government addresses the land use conflicts to my satisfaction					
3.17. Communities around the Delta should contribute towards a compensation fund for the damages caused by wildlife to their property.					
3.18. Rural development is more important than wildlife conservation					
3.19. An increase in agricultural productivity reduces poaching in my area					

C3.20. What do you think should be done to minimise land use conflicts you mentioned above?

Thank you for your cooperation

Appendix 7: Research permit

PRIVATE BAG 00434
GABORONE
BOTSWANA



TELEPHONE: + (267) 3682000
FAX: + (267) 3911591/3913055

MINISTRY OF LAND MANAGEMENT, WATER & SANITATION SERVICES

CMLWS 1/ 17 /4 II (31)

31 July, 2018

Mrs. Kefilwe Mogomotsi
Private Bag 285
Maun

(Attention: Mrs. Kefilwe Mogomotsi)

RE: APPLICATION FOR RESEARCH PERMIT BY MRS KEFILWE MOGOMOTSI TITLED, "DEVELOPING A SUSTAINABLE INSTITUTIONAL FRAMEWORK FOR THE CO-EXISTENCE OF TOURISM AND AGRICULTURE IN BOTSWANA".

The above subject matter refers.

- Permission is being granted to conduct research titled "Developing a Sustainable Institutional Framework for the Co-Existence of Tourism and Agriculture in Botswana".
- We trust the research programme will be conducted in accordance with local and international ethical norms and as per research guidelines of July 2004 issued by the Office of the President attached herewith.
- We request an oral presentation on the findings to the Senior Management and the final copy to be submitted to the ministry.

Vision: Sustainable Human Settlements
Mission: Management of land and water resources for socio-economic development



- The focal person for the ministry is head of research Mr. Khawulani Ace Bachobeli.
- The following personnel will be involved in the research:
 - i. Mrs. Kefilwe Mogomotsi (Principal Investigator)
 - ii. Prof. Dr. Melville Saayman (Supervisor)
 - iii. Prof. Dr. Andrea Saayman (Supervisor)
- Any changes on the research personnel should be communicated to this Ministry.
- The research will be undertaken in the following areas:
 - i. Shorobe
 - ii. Matsaudi
 - iii. Gumare
 - iv. Shakawe

The research should run for a period of **Two Years (2)**, commencing from **31 July 2018** to **31 July 2020**. However quarterly reports should be sent to the Ministry.

Yours Faithfully,



Khawulani Ace Bachobeli
Assistant Director (Research and Policy Development)
+267 71576661

Vision: Sustainable Human Settlements
Mission: Management of land and water resources for socio-economic development

