

**National parks as economic engines: an overview of  
economic research methods for a developing country:  
Case Study: Hwange National Park, Zimbabwe**

by

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## Abstract

The objective of this study is to consider and attempt to better understand the various methods which can be used to measure economic impacts of a National Park to a developing country's economy. Through large amounts of international research, it is clear that National Parks are valued by stakeholders in a number of ways, with one of them being the economic activity that they generate through various sectors of the economy such as tourism, hospitality, construction and conservation. However, despite the potential benefits of National Parks that are investigated in this study, many governments still do not account an adequate financial allowance through the National Budget when it comes to their maintenance and management. Therefore a greater understanding of the financial transformation to economic outputs needs to be done through research and data capture to raise awareness of their potential impacts to the relevant government bodies. Unfortunately, Zimbabwe has had a very limited amount of primary economic research undertaken since its economic crisis between 2000 and 2010. This information gap is therefore one which needs to be filled through engagement of academic and research based institutions.

With this in mind, this study has therefore screened a number of environmentally orientated papers and reports which have an economic impact aspect as part of its outputs. Through this process, 7 papers were identified and analysed based on their research methods and measurable outputs of the data captured. The information from this was then used to compile a primary research methodology in the form of interviews and questionnaires which was trialled within one of Zimbabwe's largest National Parks. This form of primary data capture gathered information from both tourists and lodge managers within Hwange National Park to determine spending patterns and various demographics which will be produced into various summaries. This will provide information on the positive and negative aspects of the developed research methods which will then be assessed and a second attempt undertaken to determine which methods worked the best. However, due to a number of circumstances, the second survey received no useable feedback and therefore assumptions made from it were done through a sample of participants rather than through actual visitors within Hwange.

The outputs and lessons learnt from the study are then used to build a toolkit or guideline to conducting environmental economic research under the specific condition experienced in a developing country such as Zimbabwe. Where possible, the collected data was used to generate economic assumptions such as elasticity, demand, supply chain and financial impacts of Hwange National Park and a few conclusions highlighted on these issues. More relevant is the understanding of where the collected data could actually be used based on the various theories and methods analysed in previous conducted research. The limitation of the various actions undertaken is also highlighted and discussed and is based on first-hand experience when undertaking primary research. Although this was somewhat ambitious based on the available resources and hands on the ground, the purpose was more of an experimental type of research to determine how best to tackle this type of data collection despite the lack of available information, communications and relevant institutional assistance that is currently experienced within Zimbabwe.

The main findings of the study can be found in chapter 4 but are not limited to include average tourism spending, linkages between household income and average daily expenditure, linkages between geographic origination and average spending, employment of lodges, community initiatives and potential income generated through national parks.

## OPSOMMING

Hierdie vraestel geskryf is te oorweeg en probeer om beter te verstaan die verskillende metodes wat gebruik kan word om ekonomiese impak van 'n Nasionale Park ekonomie 'n ontwikkelende land te meet. Deur groot hoeveelhede van die internasionale navorsing, is dit duidelik dat die Nasionale Parke gewaardeer deur belanghebbendes in 'n aantal maniere, met een van hulle die ekonomiese aktiwiteit wat hulle genereer deur middel van verskeie sektore van die ekonomie soos toerisme, gasvryheid, konstruksie, bewaring en so aan. Maar, ten spyte van die potensiële voordele van Nasionale Parke wat verder bespreek sal word in hierdie vraestel, baie regerings steeds nie 'n voldoende rekening finansiële toelae deur die Nasionale Begroting wanneer dit kom by hul onderhoud en bestuur. Dus 'n groter begrip van die finansiële transformasie ekonomiese uitsette gedoen moet word deur middel van navorsing en data capture om bewustheid van hul potensiële impakte op die betrokke regering liggame in te samel. Ongelukkig het Zimbabwe 'n baie beperkte bedrag van primêre ekonomiese navorsing onderneem sedert sy ekonomiese krisis tussen 2000 en 2010. Hierdie inligting gaping het is dus een wat gevul moet word deur middel van betrokkenheid van akademiese en navorsing gebaseer instellings.

Met dit in gedagte, sal 'n belangrike beginpunt wees hoe om werklik te onderneem hierdie tipe navorsing. Hierdie vraestel het dus gekeur 'n aantal van omgewingsvriendelike georiënteerde vraestelle en verslae wat 'n ekonomiese impak aspek het as deel van sy uitsette. Deur hierdie proses, is 7 vraestelle geïdentifiseer en ontleed wat gebaseer is op hul navorsing metodes en meetbare uitsette van die data vasgelê. Die inligting van hierdie is dan gebruik om 'n primêre navorsingsmetodologie in die vorm van onderhoude en vraelyste wat opgestel binne een van die grootste Nasionale Parke Zimbabwe se stel. Hierdie vorm van primêre data capture versamel inligting van beide toeriste en lodge bestuurders binne Hwange Nasionale Park om bestedingspatrone en verskeie demografie wat geproduseer sal word in verskeie opsommings te bepaal. Dit sal inligting oor die positiewe en negatiewe aspekte van die ontwikkelde navorsingsmetodes wat dan beoordeel sal word en 'n tweede poging onderneem om te bepaal watter metodes die beste gewerk verskaf. Maar as gevolg van 'n aantal omstandighede, ontvang die tweede opname geen bruikbare terugvoer en dus aannames gemaak van dit het deur 'n monster van die deelnemers, eerder as deur werklike besoekers in Hwange.

Die uitsette en lesse geleer uit die navorsing word dan gebruik om 'n toolkit of riglyn om die uitvoer van die omgewing ekonomiese navorsing onder die spesifieke toestand ervaar in 'n ontwikkelende land soos Zimbabwe te bou. Waar moontlik, is die versamelde data gebruik word om ekonomiese aannames soos elasticiteit, vraag, aanbod ketting en finansiële impak van Hwange Nasionale Park en 'n paar gevolgtrekkings uitgelig oor hierdie kwessies te genereer. Meer relevant is die begrip van waar die data wat ingesamel is eintlik gebruik kan word op grond van die verskillende teorieë en metodes in die vorige navorsing gedoen ontleed. Die beperking van die verskillende aksies onderneem word ook uitgelig en bespreek word en is gebaseer op die eerste hand ervaring wanneer onderneming primêre navorsing. Alhoewel hierdie was ietwat ambisieuse gebaseer op die beskikbare hulpbronne en hande op die grond, die doel was meer van 'n eksperimentele tipe navorsing om te bepaal hoe die beste om hierdie tipe van data-insameling te pak ten spyte van die gebrek aan beskikbare inligting, kommunikasie en relevante institusionele hulp wat is tans ervaar binne Zimbabwe.

Die belangrikste bevindinge van hierdie tesis kan gevind word in hoofstuk 4, maar is nie beperk tot die gemiddelde toerisme besteding sluit, skakeling tussen huishoudelike inkomste en gemiddelde daaglikse uitgawes, skakeling tussen geografiese ontstaan en die gemiddelde besteding, indiensneming van lodges, gemeenskap inisiatiewe en potensiële inkomste gegenereer deur nasionale parke.

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**LIST OF ACRONYMS**

Pppd	Per person per day
MGM2	Money Generation Model 2
NPS	National Parks Services (America)
STCRC	Sustainable Tourism Cooperative Research Centre
USA	United States of America
NGO	Non-Governmental Organisation
ZTA	Zimbabwe Tourism Authority
USD	United States Dollars
TEV	Total Economic Value
ZIMRA	Zimbabwe Revenue Authority
SADC	Southern African Development Community
GDP	Gross Domestic Product
ZIMPARKS	Zimbabwe National parks and Wildlife Authority
ZIMSTAT	Zimbabwe Statistics Agency
VFH	Victoria Falls Hotel

# Chapter 1

## INTRODUCTION

### 1.1 Overview

Since the dawn of early civilisation, humans have slowly been altering the natural environment in order to accommodate a suitable way of life and ensure our security of essential resources such as food and water. The earliest civilisation learned to clear large areas of land to plant crops and dam seasonal rivers to create large water bodies that supply a life source all year round. With the rise of the industrial revolution came a massive increase in urbanisation and the consumption of natural resources in close proximity to cities and towns. Fossil fuels were extracted from deep within the earth's crust and huge areas of natural forests and woodlands were cleared for the use of fuel wood and to create more room for the growing population or for agriculture due to an increase in demand.

Human development has therefore had a major impact on the natural ecosystems that were in place long before we settled in those areas. The knowledge that these places cannot be easily restored and returned to their natural state is one of the pioneering mind-sets for the development of protected areas and national parks. The first National Park was that of Yellowstone national park in Wyoming, North America, which was declared the area as a 'Public Recreational Park' after being signed into law by American President Ulysses Grant in 1872 (Berman, 2015). This set the baseline for others to follow and eventually there was some global momentum in ensuring some of the world's most picturesque and unique natural landscapes and ecosystems are preserved for future generations. In some ways, this was also the first practical example of sustainable development as it ensures that future generations will benefit from the natural resources without reducing their use to current generations.

The extent of biodiversity crisis has reached a tipping point where nearly all international, regional and national frameworks highlight a sustainable development emphasis to prevent further destruction to sensitive natural ecosystems. To assist this, the "global protected areas network continues to grow as governments, communities organisations and individuals designate additional protected areas in response" to the loss of natural landscapes, wildlife species and marine or coastal areas backed up by the overwhelming data to argue their need

(IUCN, 2012). The Aichi targets<sup>1</sup> (specifically target 11) states that “at least 17% of terrestrial and inland water areas, and 10% of coastal and marine areas are protected by 2020” (Convention on Biological Diversity, 2011). According to the IUCN’s annual status report called the Protected Planet Report (2012) the status of this target had a shortfall of 5% for terrestrial protection and 6% for coastal protection. However, the question of whether conservation and protection are enough to ensure a decrease in biodiversity in all its forms needs to be raised and understood. Various critics have debated the different theories of National Parks management practices to better try and understand which are the most effective, what has worked and what has not. One of the most notable examples of this the debate between the Yellowstone model and the parks and people model as noted by Schelhas (2001).

For ease of understanding, the Yellowstone model “argued that the national park idea emerged out of the Americans search for a distinct and separate from the man-made wonders of Europe, and not out of a love of nature for its own sake” and therefore ensuring that national parks maintained areas of beautiful, natural scenery that had a strong appeal to the rich and affluent (Schelhas, 2001). The approach, which started in 1872, was of the view that indigenous people were to be blamed for the destruction of biodiversity through uncontrolled logging, hunting of animals and destruction of ecosystems through human activity. Therefore selective exclusion was seen as the best form of conservation. In comparison, there has always been concern towards the Yellowstone model by various stakeholders in National Parks. The ‘Parks and People’ approach is the alternative outlook on how to ensure a sustainable, protective and effective form of ecosystem conservation. By including indigenous people within the boundaries of National Parks, it can be believed that local communities will in fact have a greater respect for their environment due to traditional and historical values between the people and the area.

Despite the conservative and protective purpose of parks, there are a number of problems when it comes to their structure and management which sheds a negative light on their effectiveness. A review of the performance of protected areas by Watson (2014) states that “protected areas are now expected to achieve an increasingly diverse set of conservation, social and economic

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<sup>1</sup> The Aichi targets (2015 – 2020) are a set of 25 headline targets and 5 strategic goals which aim to work towards the functioning and underpinning of ecosystem provisions and their services essential for human wellbeing. Information on the Aichi biodiversity targets can be found through the Convention on Biological Diversity (Convention on Biological Diversity, 2011)

objectives”, which gives added pressure to the original mandate of the national parks movement (Watson et al, 2014). Each national park has been given its own expectations by various stakeholders (communities, governments, conservationists) which are regularly changing such as livelihood development, conservation, climate change mitigation and contribution to economic developments.

Conservationists and economists are concerned that national parks are not able to meet their conservation, economic and social objectives. This can be attributed to the political environment, funding allocation and management of the parks global location. In a global study, “only 20-50% of protected areas assessed were found to be effectively managed” and “fewer than 6% of the countries reporting to the Convention of Biological Diversity (CBD) in 2013 indicated that resources for management of protected areas were adequate” (Watson et al, 2014). In the developing world, poor quality of political structures and governments result in many protection efforts ineffective due to corruption, mismanagement and lack of monitoring and evaluation capacity.

National parks have played a major role in protection and conservation but are still not completely effective in maintaining the fragile ecosystems that they protect. This is even truer for national parks in developing countries and smaller, less known national parks. For the parks model to be effective, there needs to be a high level of reinvestment, both financial and technical, which can be used for maintenance, marketing, research and improved conservation efforts such as anti-poaching. Therefore, a national park needs to be viewed with an economic lens and run like a business from a governmental point of view. Many of the world’s prominent national parks are a major source of income for an economy due to attracting both foreign and local tourists but reinvestment is not always regularised. There are a number of reasons for this such as political and economic environments of the economy, corruption, allocation of National Budgets or poor capacity of officials on the ground to implement the proposed activities.

Despite an in depth analysis on the availability of research on the financial contribution to national parks versus their estimated reinvestment needs, few studies have been done especially those focusing on those located within Southern Africa. One of the more comprehensive but older studies (James, 1999) states that “Twenty six out of 70 developing countries, plus one developed country, receive foreign assistance for their protected area systems. Reported foreign assistance totalled \$66.6 million” (James, 1999). There is need to note that foreign aid from

international donors, the United Nations, NGO's and academia has been a key feature for the existence and establishment of many National Parks in developing countries. However, considering their long term sustainability, there needs to be reinvestment of governing bodies into the park itself to ensure that they perform effectively and efficient by ensuring effective and documented conservation efforts as well as create a demand for potential tourists to visit them.

In relation to the difference between developing and developed countries, a key aspect of financial contribution was noted whilst conducting general online research. Within the developing countries identified, a mean expenditure for national parks was \$2,058 per km<sup>2</sup> compared to only \$157 per km<sup>2</sup> within developed countries (James, 1999). This significant difference is further emphasised by the fact that National parks in developed regions consist of only 40% of the global protected area coverage whereas developing regions cover 60% (James, 1999). However, there is also a need to understand the effectiveness of the financial capital that is re-invested into national parks as this will create 'donor confidence'<sup>2</sup>. This raises the question of what criteria to you to allocate resources to National Park development through both national and external funding channels.

Many of the national parks in sub-Saharan African are some of the most biologically important areas of conservation in the world and despite poor levels of funding and re-investment into the parks, they are making notable efforts to prevent species extinction. For example, Rwanda is a country that has been ravaged by war and political unrest but still manages to be the key country in ensuring the survival of the Mountain Gorilla whose population currently sits at 880 individuals (World Wildlife Fund, 2016). Other conservation efforts in Uganda and the DRC are also being made to resuscitate the population numbers of this critically endangered species. Another example is the large number of national conservancies within the Southern African region which focus their efforts on protection of the remaining Black Rhino population and despite the on-going and seemingly unstoppable rhino horn poaching, are making great strides to protect what is left of this species. One of the key ways to ensure protection of critically endangered species is through the use of large scale awareness campaigns and promoting of the conservation efforts going into the protection of that species. With these activities comes

the creation of demand to experience that specific niche natural resource, more commonly known as tourism (African Wildlife Foundation, 2016)

Originally, the purpose of establishing national parks was to benefit modern society. Whether this benefit can be seen as ecologically conservative, social or economic, there is some form of benefit involved with their establishment. Understanding economic benefits “is often equated with the worlds of commerce and finance. But as a social science, economics focuses on improving the ways in which we use scarce resources to satisfy human needs and desires. The objective is either to boost the satisfaction we can derive from the limited resources at our disposal, or to reduce the waste of those scarce resources as we satisfy the priority needs and desires, or both” (Power, 2002). Therefore, in consideration with the various literatures defined as Total Economic Value (TEV) on the structure of national parks, economic benefits are at the core of their existence both in commerce and social science terms. This can be better understood by looking at a park, in its entirety, as an industry. It requires inputs, labour, marketing, demand (from potential consumers), innovation, investment and effective management to ensure that it runs effectively and serves its purpose of conservation and protection.

Some of the Southern African regions bigger and more prominent national parks contribute a large amount of the foreign income towards the economy. Tourism is only one component of the economic activities which a park offers as part of their contribution to the GDP of a country but is one of the most economically important in terms of job creation, tax generation and economic activity. National parks, through tourism, research and general labour requirements, create employment for a number of skilled and semi-skilled individuals within this sector contributing to reducing the unemployment rates that usually plague developing countries within Southern Africa. Reduction in unemployment rates are theoretically linked to lower crime rates, improved primary education enrolment and increased standards of living for the general population (Dumitrescu, Vasile, & Enciu, 2009).

National parks develop encourage industrial and economic activities within the surrounding region through the demand generated by tourism. This includes the supply chain related to the tourism industry such as construction, food and beverage, hospitality, medical facilities, manufacturing, transport, security, ICT and advertising. Tourism to national parks can be

recreational, for hunting purposes or for educational purposes. Although a very broad economic benefit, this component will be discussed in greater detail in the later chapters of this paper.

Natural resources within national parks are also a key component when talking of economic benefits as they generate tourism demand, hold a financial value (e.g monetary valuation of wildlife), generate livelihoods for local communities and generate multiplier effects for all other industries in the surrounding region and further out through the use of the natural resources as raw materials (e.g non-timber forest products). In many cases, the value of wildlife can also be the cause of increased costs to the conservation efforts due to the nature high black market demands that influence poaching. This is increasingly common in Southern Africa. Aiding these conservation efforts is not only about living creatures, but also resources such as water sources, subterranean cave systems and rock formations. These hold an important value when it comes to cultural and educational significance.

Many developing countries are trying to combat issues like poverty, education, unemployment, service delivery and overpopulation. The result is that national budget allocations to National Parks are often fairly low as therefore this has been shown to open the door for a number of socio-economic issues such as poaching, illegal animal trades and deforestation within these areas. Unfortunately, these issues are directly related to poverty and unemployment and will continue to be a global problem unless they can be addressed.

## **1.2 Can Parks Be Economic Engines?**

Following the above discussion, there have, however, been a number of economic arguments that national parks, if managed correctly, are in fact able to run themselves and create significant economic impacts. In a recent article written about national parks in the USA, it was noted that they are actually generating “ten dollars to the local economy with every dollar of funding” (Griggs, 2014). The article highlights that having effective management mechanisms in place such as marketing, maintenance, finance and project management, a national park is able to support it and even have an economic benefit to the country by creating jobs, improving tourism and generating income. If this is truly the case, then it does not make sense why every country in the world, both developing and developed, would not encourage national parks to function at adequate standards as they have so many theoretical benefits. The reality is that start-up capital can be a major requirement to ensure that effective infrastructure is in place in



the park, training and marketing expenses will also fall into this budget. Secondly, there needs to be demand for tourists to visit the park, both domestic and international tourists. If this is not in place, then turnover will be lower than its expenses and economic activity that would potentially be reliant on the national park would fall away.

The knowledge of how national parks can impact a country economically has been realised for very few parks in developing countries. This normally requires a fairly time consuming and complicated analysis to measure everything from impacts of photographic tourism to multiplier effects in local industries. Where these assessments have been done, as we shall see, interesting results indicate that National Parks do, in fact, have a positive economic impact.

### **1.3 Problem Statement**

Many developing countries are constrained in terms of allocation of finance from the annual budget and unfortunately wildlife conservation and national parks management is often not on the list of priorities, thus resulting in neglect of the parks and park infrastructure. There is a theory that parks are able to, if managed correctly, fund and support themselves as well as function as economic engines and multipliers for improving GDP and the national economy. Although literature supports this argument for national parks in developed regions such as the USA, there is very little to highlight this potential within the parks of the developing countries (National Parks Conservation Association, 2015). Therefore the potential for economic impact research to be conducted could change the outlook on national parks by national governments and international donors and to increase their management capacity to ensure they function as part of the country's economic activity.

The intention of this study is to evaluate the literature on tourism influenced economic impacts of national parks within a developing country and focusing specifically on Hwange National Park in Zimbabwe as a case study.

### **1.4 Research Objectives**

According to the Better Thesis Online Support System (2015), research objectives provide an accurate description of the specific actions you will take in order to reach this aim. This study therefore has 4 key research objectives to serve as a guide-line, and also to create a baseline for

future studies using these research methods in order to achieve detailed results on a larger scale.

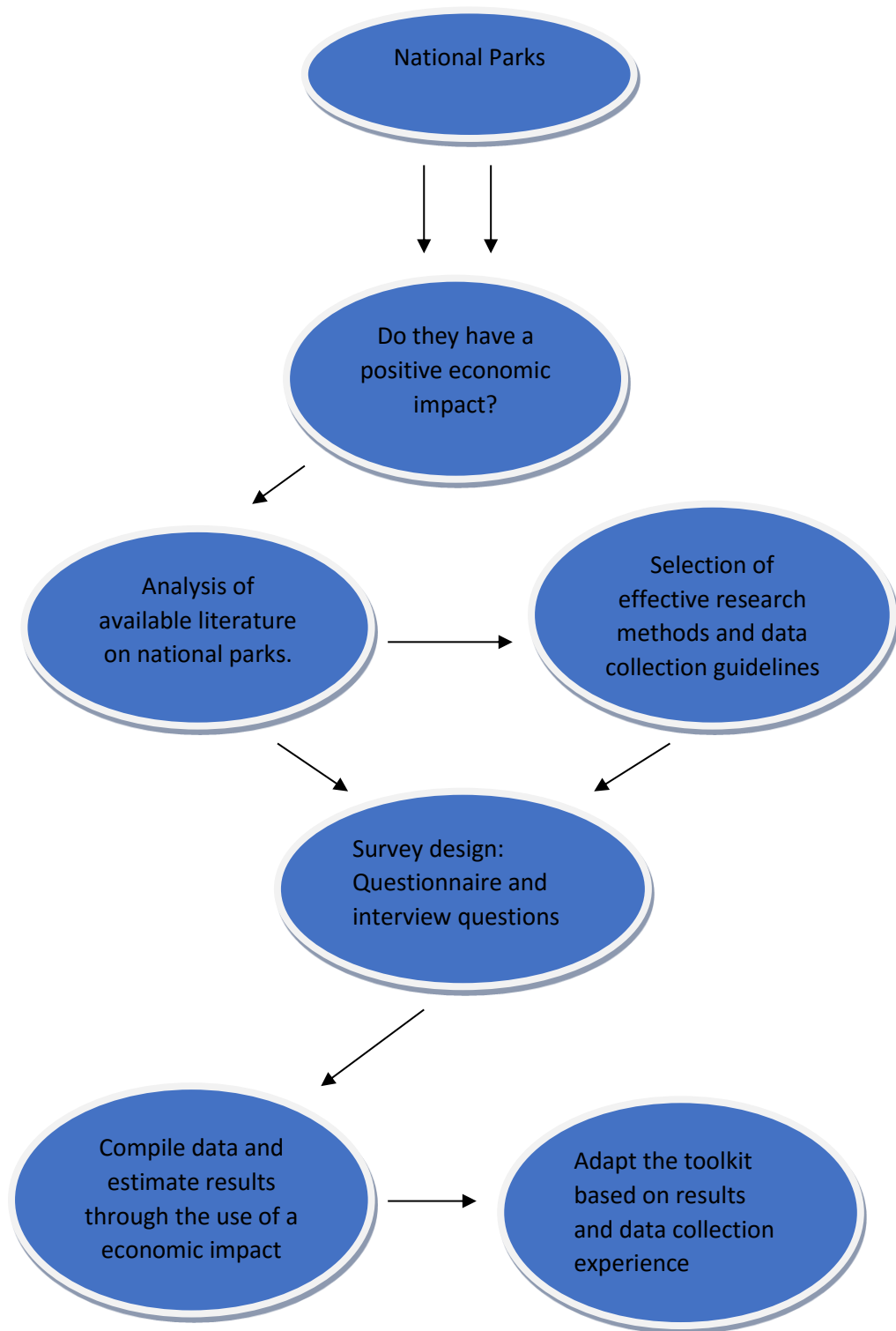
They are as follows:

- A review of the literature on national parks and their economic importance and use this to find examples of methods which have been used to evaluate the economics of protected areas.
- Translation of the available literature into a survey methodology and draft toolkit to be used for gathering primary information within a national parks setting. This draft toolkit will serve as a guideline for primary research conducted within the case study area of this thesis.
- This toolkit then needs to be tested in the field; in this case the study area has been identified as Hwange National Park, Zimbabwe. The finalised draft toolkit needs to be used in the sample area to collect primary data and gathered results will serve as an indication of the effectiveness of the toolkit designed. The observed results will also be collected and documented in order to highlight problematic and ineffective areas.
- The collected data will then need to trail through a selected tool to attempt to measure the economic impact. Comments can then be made on the experience of the data process on how the tool can be adapted to assist under specific economic and political climates. This can include areas of low trust to release financial information, low tourism levels and low feedback levels.

Ideally, the goal of this study is to see if there is sufficient available evidence which is readily available, and develop a tool on how best to gather data, which could be presented by the National Parks and Wildlife Authority to the National Treasury (ZIMPARKS) in order to lobby for increased reinvestment into the National Parks systems within Zimbabwe.

### **1.5 Mind Map and Key Concept Definitions**

A mind map serves to give a graphic representation of the research objectives. It can be referred to as a road map showing how the researcher aims to meet their expected outcomes. The mind map shows various steps in its circles to give both the researcher and readers a guideline on what this paper should consist have based, somewhat similar to a summary of the table of contents. Reference to this mind map might not directly be made but the physical structure of this paper reflects the idea inserted into it.



**Fig 1.1: – Mind Map**

The above mind map (Fig 1.1) aims to navigate the reader where the starting point and end points are when it comes to the relevant research and structure. According to Brynard and Hanekom (2006), a mind map is valuable in the sense that it “enables the researcher to identify information critical to the particular investigation, it helps to simplify the search for, and the collection of, topic relevant data needed for in-depth analysis”. As can be seen from looking at the top of the mind map, this study’s core focus will be on national parks. The purpose of a direct focus on national parks over other types of protected areas is that, as their names states, are managed and overseen from a branch of a countries national government. Many protected areas can be financially and administratively supported through NGO’s, community groups or international organisations. However, this study will aim to understand the direct benefits a national park can have directly to a national government through effective management of its tourism and other internal activities.

At the bottom of the mind map, it will be to identify produce a toolkit that can be utilised to gather information for measuring economic impacts. This will be done through both analysis of secondary work as well as primary research.

<b>Key Definitions</b>	
Economic Impact Analysis	This is the trace of flows of spending associated with tourism activity in a region to here identify changes in sales, tax revenues, income and jobs due to tourism activity” (Stynes, 2003). This therefore, using gathered data, is able to determine how tourism is influencing economic activity (either positively or negatively) for a specific region and in this case, a national park.
Primary and Secondary Research	Primary research involves collecting first-hand information on a specific topic which can be used to generate estimation, trends and implement into various economic impact models to determine some sort of result. Secondary research is predominantly a desktop analysis of previously collected data by another author. Although the data has generally been collected well, it can sometimes be out of date or inaccurate. However, it serves as an important baseline for nearly all primary research.

National parks	These are areas of land with specific environmental or biological importance and are protected from urban development by law. They provide people with opportunities to learn about natural flora and fauna as well as to explore and admire the beauty of diverse environments
Supply Chain	This concept can be easily defined as “the process taken by a product for it to reach its final end user through the cumulative efforts of multiple organisations” (Handfield, 2011). The concept aims to identify the various steps and organisations involved in those steps that ensure the functioning of a specific end product (e.g. tourism) so that it maintains consumer demand. In the tourism industry this can involve accommodation, travel, catering, infrastructure construction and so on.
Research methodologies	This involves the various processes that are used by a researcher to obtain the relevant information on a specific topic for use in analysis, estimation and predictions. Research methodologies vary greatly depending on expected outcomes, purpose and the style of the researcher and can involve a number of different processes to achieve the same results.

## 1.6 Research Outlines

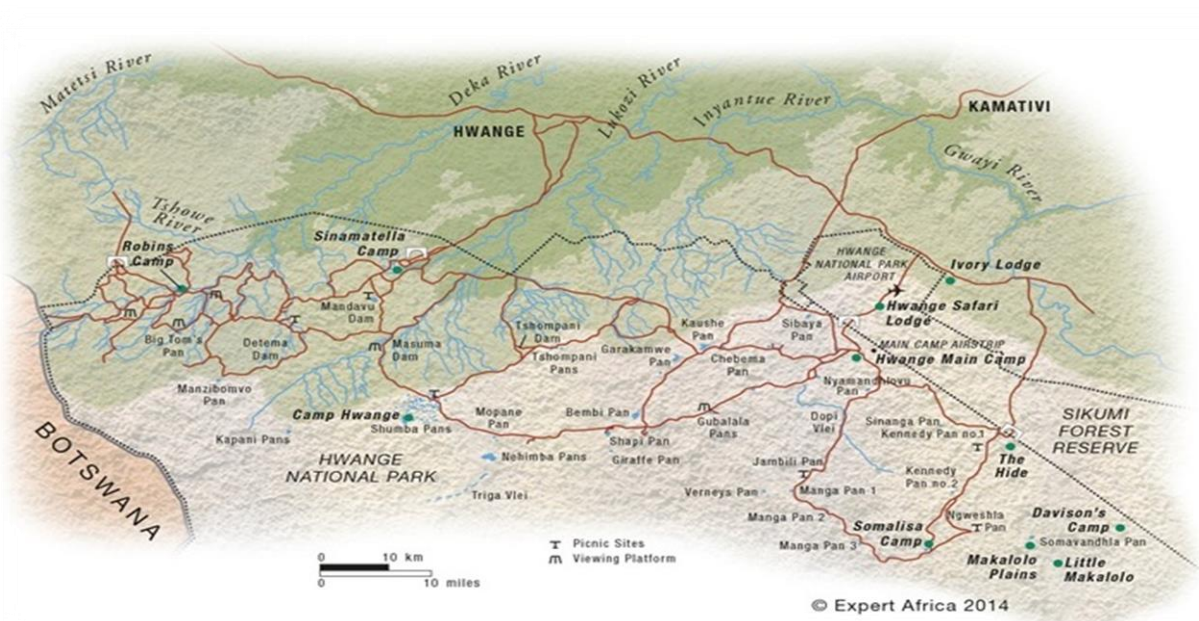
The research will provide a background on national parks and their history within the view of their linkages to economic development. The backbone of this research followed a literature review of identified research papers that directly addressed the economic impacts of parks. An analysis of the research methods was undertaken to consider the effectiveness and the nature of the data that was collected to use this as a guideline in the drafting of questionnaire design. Primary research will then be conducted in the study area (Hwange National Park) based on the draft toolkit to be developed. The positive and negative experiences of the data collection process will be recorded and adjustments made on the toolkit to reduce areas of concern or ineffectiveness.

A second attempt, based on recommendation and changes made on the first research attempt will then be undertaken to start putting together a more accurate toolkit that will have been trialled in the field and adapted to suit the specific socio-economic environment of the park. Finally recommendations will be made and a toolkit presented as well as an attempt at analysing the economic impacts of the national park. This is followed by highlighting and giving an overview of various economic theories and their relation to tourism and the impacts that can arise from it. Finally, the implementation of the designed toolkit for collecting data to measure economic impacts will be implemented in the selected case study area through primary research and its results showcased.

### **1.7 Zimbabwe and the Hwange National Park**

Zimbabwe is a landlocked country located in the south east of the African continent. Formerly a British colony, the country gained its independence in 1980, when it soon became one of the most popular tourist destinations in Africa due to its serene natural landscapes, abundance and variety of wildlife as well as being home to one of the seven natural wonders of the world, the Victoria Falls. In close proximity to the Victoria Falls lies the Hwange National Park. This is the country's biggest and one of its most famous national parks and is located in north-western Matabeleland. It is bordered by communal lands on the east and south, Botswana on the west and Safari Areas on the north and covers an area of 5000 square miles, it holds some of the densest elephant concentrations in Africa and has been a key destination of the countries tourism demand since its inception in 1929 (Zimbabwe Trade Point Project, 1995). The national park is also home to the country's largest population of African Elephant which is estimated to be about 40000 with herds of up to 350 strong. This includes Zimbabwe's Presidential elephant herd which is estimated to consist of nearly 400 individual elephants. The National park also supports a variety of African wildlife species such as Impala, Eland, Kudu, Waterbuck, Antelope as well as African Lion, African Buffalo, Wildebeest, Hippopotamus, Leopard, Cheetah, Warthog and other varieties of birds, plants and reptiles. The National Park can be considered as an ecological goldmine. A map of Hwange National Park can be seen below (Fig 1.2)

Fig 1.2: A map of Hwange National Park

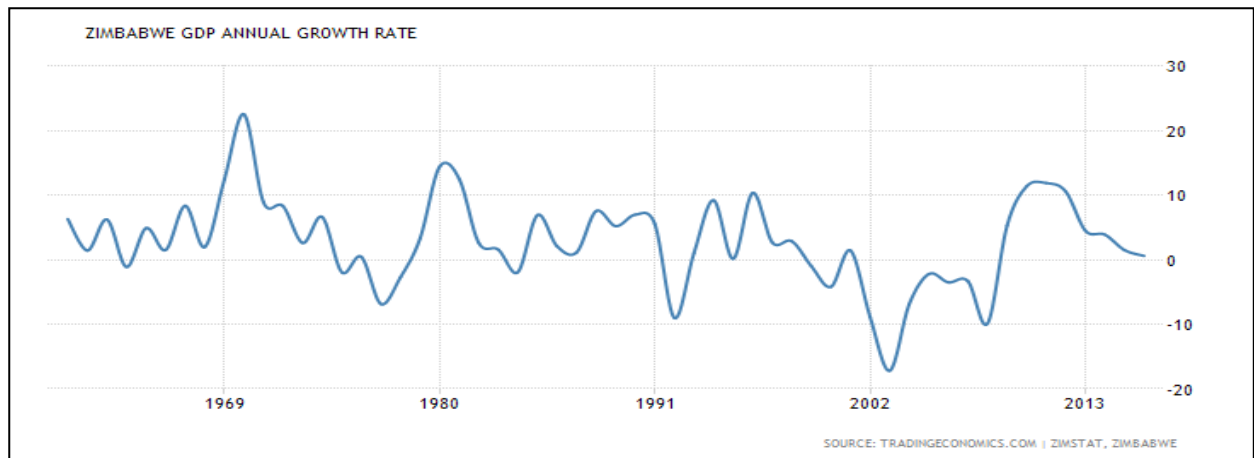


**Source: Expert Africa, 2013**

Zimbabwe suffered an economic crisis between 2000 and 2009 in which hyperinflation, international sanctions and mismanagement led to the country falling into turmoil. International investors pulled out and local industry collapsed as producers could not keep up with the 11,200,000% inflation rates of the national currency (CNN Edition. 2008). This led to a food crisis followed by a service delivery crisis and also an international tourism crisis. Due to political and economic instability, many international tourists decided to choose other destination alternatives to Zimbabwe and therefore the hospitality industry took a large financial hit. A lack of income into the national parks and wildlife authority, maintenance and management could not be followed through to all the country's national parks and therefore many became ravaged by poaching and deforestation. This further led to a decline in tourism resulting in higher unemployment in the hospitality, transport and wildlife orientated industries. About ten years into the economic and political collapse, improvement started to take effect in government and private sectors due to the growing increase in international investor confidence and adaptation of national policies to address the economic issues. A rebuild of the neglected tourism industry began with encouraging the hospitality industry to market their respective setups and building their staff capacity and clientele. Zimbabwe is lucky enough to have many natural attractions which are unique to the region such as the Victoria Falls,



abundance of wildlife, world renowned fishing and hunting, flora and fauna and desirable climates.



**Fig 1.2: – Zimbabwe GDP 1960 - 2014**Source: Zimbabwe Statistics Agency (ZIMSTAT), 2014

Zimbabwe has a number of National Parks which are overseen by the National Parks and Wildlife Authority (ZIMPARKS). Although specific data seems hard to come by, The Zimbabwe Tourism Authority publishes an annual report online which shows the tourism trends and statistics of the country for that year. The latest available report is from 2013 which highlights the tourism activity within the country's National Parks from both local and international visitors (Zimbabwe Tourism Authority, 2013). This is depicted in table 1.1 and shows the number of visits as well as the percentage share of tourism market each National park has. The important row for this table is that of Hwange Main Camp as this is the main data collection office for the area. This will be referred to again throughout the study.

**Table 1.1: Arrivals into National Parks 2013**

Station	Local	Foreign	Total	%Share
Chimanimani	1997	405	2402	0.4
Chinhoyi	48049	1760	49806	8.9
Chipinda Pools	3034	1102	4136	0.7
Chivero	24612	1165	25777	4.6
Chizarira	32	72	104	0.0
Darwendale	3725	3	3728	0.7



Ewanrigg	4218	38	4256	0.8
Kyle	9420	352	9772	1.8
Mabalauta	853	409	1262	0.2
<b>Hwange Main Camp</b>	<b>15930</b>	<b>15848</b>	<b>31778</b>	<b>5.7</b>
Mana Pools	2520	2720	5240	0.9
Marongora	3225	280	3505	0.6
Matobo	43023	30561	73584	13.2
Matusadonha	2200	802	3002	0.5
Negzi	944	10	954	0.2
Nyanga	16660	838	17498	3.1
Nyanyana	1704	85	1789	0.3
Osborne	3589	8	3597	0.6
Rainforest (Victoria falls)	51361	144680	196041	35.2
<b>Robins</b>	<b>341</b>	<b>2181</b>	<b>2522</b>	<b>0.5</b>
Sebakwe	3498	29	3527	0.6
<b>Sinamatella</b>	<b>3235</b>	<b>3401</b>	<b>6636</b>	<b>1.2</b>
Vumba	2473	337	2810	0.5
Zambezi	28932	74905	103837	18.6
<b>Totals</b>	<b>275575</b>	<b>281991</b>	<b>557566</b>	<b>100</b>

Source: Zimbabwe Tourism Authority, 2013

However, economic impacts of national parks cannot only focus on tourism as it covers a large range of other sectors. National parks globally support a number of stakeholders through outputs such as non-timber forest products, academic or scientific research and cultural heritages for local populations. Non timber forest products have been highlighted in a number of papers as a key source of economic support for local populations for both consumption on local markets as well as international export markets. These can include traditional medicines such a various plant roots or vegetation by-products, foodstuff such as honey, wild fruits and seeds, and insects or animal skins for traditional use or for retail sectors (Madzara, 2013). Research in national parks generally involves wildlife, tourism, local communities or natural resource management but can regularly generate funding from various institutions (both government and academic), international NGO and private sector. Research can create

employment for many local people who have a good knowledge of the areas as well as ensure that national institutions have up to date statistics on the various aspects of national parks.

### **1.8 Economic theories**

One way of determining the importance of national parks and their role in creating socio-economic opportunities is through an economic analysis. Economic impacts can produce outputs that are directly relatable to whether the activity is benefiting or costing the economy and by how much. It is therefore relevant when it comes to making national budgetary allocations for governments as well as giving investors an idea as to whether they will benefit or lose out on a potential opportunity. There is a great amount of research done on various economic analysis techniques, some which are directly relevant to measuring the economic impacts of national parks or protected areas.

As tourism is one of the main drivers behind a parks success or failure, it will always be a key feature as its impacts “reach virtually everyone in the region one way or another” as will be looked at later on in the paper (Stynes, 2008). Economic impact analyses provide a concrete way of estimating “economic interdependencies and a better understanding of the role and importance of tourism in a region’s economy” (Stynes, 2008).

Understanding the economic value of natural resources is a key strategy to ensuring their sustainable development due to their ability to generate income through tourism, receive global recognition, maintain natural ecosystems and engage local communities to become economically empowered. The phenomenon of globalisation has brought tourists closer to natural regions all over the world and their demand for them has grown with the increase of eco-tourism and wildlife (safari) driven tourism. By measuring the economic value of the natural environment, we need to understand the taxonomy behind its valuation. This can be best illustrated in table 1.2, which demonstrates that there are a number of different ways which it can be valued (Jantzen, 2006).

**Table 1.2: Economic Values**

USE VALUES			NON USE VALUES	
Direct Use	Indirect Use	Option Value	Bequest Value	Existence Value
Outputs are directly consumable	Functional Benefits	Future Direct and Indirect Values	Use and non-use value of environmental legacy	Value from knowledge of continued existence
-Food -Biomass -Health -Increased living conditions	-Flood control -Storm protection -Nutrient cycles	-Biodiversity -Conserved Habitats	-Habitats -Prevention of irreversible change	-Habitat -Species -Genetic continuance -ecosystems

Source: Jantzen, 2006

To put valuations in a simply defined example it is possible to consider the valued item, a national park, as a consumable good. The purpose of an economic valuation lets the consumer think about the maximum amount of other consumable goods that they are willing to give up in order to have a particular good. Table 1.2 aims to show that not all valuations are those with monetary value attached to them. In many cases, willingness to give up a particular good cannot be used as it is not a tangible object or is something that can have no ownership. In the case of a National Park, it cannot be owned by a consumer and in many cases it might never be used by a consumer. But this does not mean it has no value, rather the knowledge of its existence ensures that it holds some sort of value known as *existence value*. We can also value a national park by a consumer's willingness to pay for its services, even without necessarily utilising it, in order to preserve its assets for future generation. This is known as *bequest value*. Both existence and bequest values are classified as non-use values as the consumer is not directly utilising the resource. Use values are simpler to measure due to their tangibility and being unit based. These consist of direct use (directly consuming a good), indirect use (benefits derived from the good without the consumer using it) and option values (the willingness to pay for a good in the hope of maintaining its future supply for direct or indirect use).

There are a number of types of economic analysis that can be used to support economic decisions based on tourism and National Parks. Some of the key economic analysis include:

- Economic impact analysis – aims to measure the total contribution of tourism activity occurring from a selected National Park to the economy of that region. It traces the flow of expenditure associated with the arrival of tourists down the tourism chain of supply.
- Fiscal Impact Analysis – aims to measure whether the National park will be able to sustain itself financially based on the expenditure generated through government incomes (fees, taxes).
- Demand Analysis – aims to measure the change in volumes of tourists to a National Park dependant on changes in price, similar alternatives, facilities available and other physical factors.
- Cost Benefit Analysis – this aims to measure the strengths and weakness of one National park compared to another (or a similar alternative) by analysing the strengths and weakness of the alternatives in order to have the same levels of satisfaction
- Environmental Impact Assessment – What are potential negative impacts (if any) are there of a specific activity (tourism) to the environment (a National park).

This is not to say that these are the only ones, but they do highlight the variety of different ways of measuring impacts that a tourism generating region can have. This study will aim to touch on the various aspects related to environmental economic as discussed in this chapter. It will also showcase the results of primary research which will be undertaken in the Hwange National Park in order to make some assumption about various research methodologies and how best to work the data gained from it. Understandably, this will be more of a trial and error based research and analysis paper but this comes with good reason. Not all research can be conducted in the same way due to a massive variety of varying conditions such as resources, distance, data availability, qualities gathered and experience of data collection. Therefore, a potential end result of this study will be to highlight the shortfalls and achievements of conducting environmental economic research.

## CHAPTER 2

### LITERATURE REVIEW AND RESEARCH METHODS

#### 2.1 Introduction

This chapter compares different research methodologies to identify techniques used to measure economic impacts of environmental areas such as National Parks or Protected areas. A large number of reports were analysed before selecting the seven key reports used in this section. The vetting system used to select the reports and research papers used was done in a systematic manner starting with:

1. Collection of 25 academic and research based reports focusing of all environmental economic aspects of natural areas, tourism and National Park informative information.
2. An overview of the titles and subtitles of the reports and papers was done to determine which documents where best focused towards measuring economic outputs but with a focus in protected areas.
3. A review of the abstract and executive summary of each paper was undertaken to ensure that it highlighted important characteristics such as a detailed research methodology, measuring impacts (financial, economic or environmental) within a protected and that the selected papers were on a different type of economic evaluation or at least a different geographic area.

These steps then resulted in the 7 most suited papers being selected and analysed for the literature review of this thesis.

The papers in **Annexure 1** are highly relevant in terms of titles and were considered carefully when it came to ensuring whether they were to be used in the research methods analysis. These papers, although they were not individually scrutinised, each had a highly complex research methodology, irrelevant research methods for this particular analysis or no research methods at all due to the nature of the research. However, they proved useful to develop a greater understanding about how various authors go about structuring and planning their papers and how the content of the work greatly affects the results and conclusions. It must be noted that

ideas and information from the papers (**Annexure 1**) did guide the discussion points and gave background information for critical areas within this particular study.

The list of rejected papers has been included as part of the annexures of this study to show the variation in terms of papers selected despite the initial search criteria for various research papers. Key words in the title such as ‘national parks’, ‘environmental economics’ and ‘tourism economics’ were the main search criteria but variations of these as well as mixed combinations were also included. Most of the research was undertaken through the use of online academic databases and online search engines, however the analysis of the reference lists of the selected papers played a big role in identifying effective papers. Factors such as age of the study, location, details of research methods and the outcomes of the papers all were responsible for the rejection process.

The purpose of this comparative analysis was to determine which methods work best when attempting to estimate the economic impact of a national park, and which ones seemed to be an inaccurate or ‘one off’ method which was not followed through by other researchers and/or heavily criticised. It must be noted that most of the reviewed research methods undertaken by researchers are in fact tried and tested over a period of time or on more than one occasion.

The papers selected have similar methods for data collection in the form of tourism surveys and desktop analysis. The papers selected were conducted mostly within Australia and Asia as very few papers were available with the specifically required content on countries within Southern Africa. However, some of the papers selected for this section had been done within a rural region or in a developing country and this gives a theoretical comparison of research methodologies with different geographic regions and economic climates. By identifying the useful aspects from each papers research method, it is then possible to develop a standardised set of tools needed to develop a toolkit for measuring the economic impact of parks in Africa.

Below is the reviewed content of the seven selected research papers with a specific focus on the research methods and results obtains from it.

## **2.2 Economic evaluation of tourism for natural areas: development of a toolkit approach**

*By: David Wood, John Glasson, Jack Carlsen, Diane.*

One of the more comprehensive papers that aims to develop a method to work out the economic impact of a national park is that by Wood et al. (2003). The research for this study was undertaken in Western Australia with the geographic locations of the South Forest Region and Gascoyne Coast Region and focuses on developing a coherent and effective way to measure economic impacts of tourism. In two National Parks with different natural attractions and different seasonal demands from local and international tourists, Wood et al. (2003) gave the opportunity to put them head to head when measuring their ability to produce a positive economic impact for the region.

This paper undertook primary data collection methods through the use of questionnaires given to tourists and the collected data was then analysed using the direct expenditure method (DEM) to estimate economic impacts and contributions. This consisted of a desktop study of statistics which had been previously conducted by the Bureau of Tourism Analysis over a 4 year period leading up to 2003. Looking from a critical analysis point of view, the results show a very high number of tourists as to compare to the data available through the Australian Tourism Authority's website. This is simply because the primary data capture was undertaken during the peak of high season of the selected areas and therefore indicates large volumes of tourists visiting the area. It was justifiable to do this as it gives a greater probability of collecting high quantitative data volumes from the expected number of visitors.

A key feature of this paper was the development of a toolkit from which was designed based his surveys for the two comparative tourist destinations. An overview of the toolkit can be seen in table 2.2 below.

**Table 2.2: Overview of the Toolkit for Undertaking Primary Research**

<b>Overview of Toolkit</b>	
<i>Research Administration</i>	<ul style="list-style-type: none"> <li>• Establish research project steering committee</li> <li>• Identify case study areas</li> <li>• Set project milestones</li> </ul>
<i>Establish Content</i>	<ul style="list-style-type: none"> <li>• Evaluation of what</li> <li>• For whom</li> <li>• For what region</li> <li>• Scope of evaluation</li> </ul>
<i>Decide on level of assessment</i>	<ul style="list-style-type: none"> <li>• Expert judgement-judgement sample</li> <li>• Survey snapshot – cross sectional survey</li> <li>• Primary data – longitudinal survey</li> </ul>
<i>Design Survey Instrument: Basic Information</i>	<ul style="list-style-type: none"> <li>• Visitors place of origin</li> <li>• Visitors accommodation type</li> <li>• Visitors activities</li> <li>• Visitors household income</li> <li>• Visitors age</li> <li>• Visitors expenditure</li> <li>• Attribution and substitution</li> </ul>
<i>Manage Survey Activity</i>	<ul style="list-style-type: none"> <li>• Validating survey instruments</li> <li>• Survey administration</li> <li>• Data processing, treatment and analysis</li> <li>• Comparison of findings with other studies</li> </ul>
<i>Dissemination</i>	<ul style="list-style-type: none"> <li>• Gain acceptance of results by steering committee and stakeholders</li> <li>• Reporting – written and oral feedback and presentation</li> </ul>
	<ul style="list-style-type: none"> <li>•</li> </ul>

Source: Wood et al. (2003)



Wood et al. (2003) developed the toolkit shown in the table above (see table 2.2) to demonstrate the data collection needs for the direct expenditure method. The toolkit works from the early stages of general identification and organisation of priorities through to designing the survey to the data compilation and reporting stage. Wood et al. (2003) noted that this toolkit approach, if applied correctly, is appropriate to presenting a case to governments or various stakeholders whilst applying for funding protection status or management of the area.

Using the toolkit, Wood et al. (2003) determined that the information needed from this research has to record the following information from participants:

- Duration of stay
- Origin
- Mode of transport
- Group size
- Accommodation type
- Reasons for visiting/activities
- Information resources
- Substitution (reasons for this choice)
- Intention to visit again
- Expenditure in the region
- Household income
- Age and gender
- Visitor satisfaction

The visitor expenditure data used for the paper was taken from a 2003 study which shows the average daily spending by tourists based on factors such as accommodation type, activities and travel costs (Wood et al. 2003). Based on the results from this, the average expenditure for the “Southern Forest Region was \$89.70 per person per day and the Gascoyne Coast Region was \$81.30 per person per day (Wood et al. 2003). Comparisons were then made against the utilisation of various accommodation types to determine expenditure according to accommodation type and area (Table 2.3).

**Table 2.3: Expenditure of tourism in different regions**

<b>Expenditure (pp/per day)</b>	<b>Southern Forests Region</b>	<b>Gascoyne Coast Region</b>
Travel	\$10.20	\$14.60
Accommodation	\$35.80	\$18.10
Food and drinks	\$22.00	\$18.50
Activities	\$6.10	\$15.40
Equipment	\$7.70	\$10.00
Other	\$7.90	\$4.70
<b>TOTAL</b>	<b>\$89.70</b>	<b>\$81.30</b>

**Source: Wood et al. (2003)**

Wood et al's (2003) data allowed correlations between daily expenditure and place of origin. The results showed that daily expenditure in Gascoyne Coast is highest amongst non-local tourists and the expenditure decreases with an increase in age. Other variables included the average increase in daily expenditure with increase in cost of accommodation (campsite to Caravan Park to hotel) and that local residents spend the least when visiting this area with international tourists spending the most (Wood et al. 2003).

### *Conclusion*

This was a thorough study that illustrated the full research cycles, data collection methods and the expected results shown in the review above. It was also referenced by several other papers in this chapter and seen as a guideline to survey compilation. The toolkit used by Wood et al. (2003) is exceptionally useful because of the step-by-step guidelines on what a questionnaire must consist of and how to go about preparing for data collection. Although this basic and additional information can be selected depending on the research purposes, it highlights the essential areas of data collection to ensure that results can be produced and compared based on tourist variables. This toolkit can be made more area and purpose specific by adapting some of the additional questions on measure the required variables such as expenditure mapping, willingness to pay a higher rate for the same package and additional expenses of the trip. The toolkit is especially useful because it describes record administration and identifying context, stakeholders and scope for a study which ensures that the researcher has a support system to fall back on for clarity and direction. The direct expenditure method used by Wood et al. (2003)

is a good method of establishing a financial value when it comes to understanding funding allocations and expected turnover for the park. While useful in determining financial value of a particular area, it takes into account only the value of the data collected over a specific time frame. It does not take into account multiplier effects such as job creation and demand chains through various industries.

### 2.3 Economic Benefits to Local Communities from National Parks Visitations

*By: Yue Cui, Ed Mahoney, Teresa Herbowicz*

The paper by Cui et al. (2011) analyses visitor spending patterns in the United States National Parks, and uses economic multipliers to estimate the economic impacts of visitor spending. Although economic analysis can be quite complex, the basic calculations and components are presented in this simple equation (Stynes et al., 2000):

Economic Effects = Number of Visitors \* Average spending per visitor \* Economic multipliers

There are three steps to this study. The first is to estimate the number of visitors to each park according to each spending category, such as day visitor, camper, or luxury hotel. The second step is to estimate the average daily or per night expenditure per visitor for each segment of visitors, broken down into categories such as food, accommodation, fuel, local purchases, park entry fees and so on. The third step is to calculate the economic multipliers. This can be quite complicated because it includes direct effects, indirect effects and induced effects as defined:

- **Direct effects** are changes caused by visitor spending in the businesses that sell directly to visitors (i.e., lodges, campgrounds, restaurants, grocery stores, etc.).
- **Indirect effects** are when lodges and other tourism business buy goods and services from other businesses
- **Induced effects** are the economic multipliers generated when people working in lodges and tourism spend their salaries on goods and services

The research needs to collect some baseline or secondary data to cater for inflation, average costs of visits and changes in travel costs.

However, the United States National Parks Service has developed “The Money Generation Model Version 2 model (MGM2) to estimate the visitor spending and impacts, and especially the The number of visits and average spending per visitor are entered on a simple worksheet

to generate estimates of the direct and total sales effects of visitor spending” (Stynes, 1999). These spreadsheet draw from regional and national input / output economic matrices that are included in the software, which were developed as reasonable standard methods through prior research. The reported data usually only measure the economic multipliers within a 60-mile gateway community, rather than nationally.

The paper (entitled Economic Benefits to Local Communities from National Parks Visitations) compiles information from parks throughout the United States using the National Parks Services (NPS) database. The United States has over 300 national parks, which receive over 278 million recreational visits a year according to its 2011 statistics. The MGM2 methodology analyse NPS statistics and estimates the number of park visits and overnight stays at each park within the country or selected areas. The data is further separated into day and night segments, and then multiplied by the daily average spending for each major category of tourist. This enables parks to be classified as low, medium or high spending zones. For parks that lacked recent visitor survey data, an estimate is produced by generalising from data from studies at similar sized parks, or based on manager and researcher judgment.

Table 2.4 below summarises the MGM2 steps and highlights its main processes needed to produce an output.

**Table 2.4: MGM2 Steps**

	<b>Step Process</b>
Step 1	Gather NPS Data into Segments (trips by local visitors, day trips by non-local visitors, and overnight trips by visitors staying in campgrounds or hotels, lodges, cabins, and bed and breakfasts)
Step 2	Review visitor spending over the last 10 years and adjust it to 2011 pricing for each segment. In the event of a park with no data, observation research was used to estimate visitor spending
Step 3	Application of multipliers to estimate secondary effects through the MGM2 model e. g. Jobs, Income, Value Added.
Step 4	MGM2 parameters for individual parks are adjusted over time as new info becomes available

**Source: Cui et al., 2011**

Table 2.5 below summarises the expenditure of tourists who visited national parks in 2011 with the USA. The authors tracked the average annual expenditure through the visits to national parks to determine how the parks functioned as economic engines. According to this study, the total direct impacts of parks is about USD 9.7 billion dollars, and creates 135,316 jobs within the country, with \$3,289 billion in salaries, and added value of \$5,656 billion. As this expenditure ripples through the economy, it increases the impact of US Parks to \$14,992 billion in sales, and 177, 510 jobs (Cui et al., 2011).

**Table 2.5: Tourism Expenditure in National parks (USA)**

Sector/Spending category	Sales (\$ Millions)	Jobs	Labor Income (\$ Millions)	Value Added (\$ Millions)
Direct Effects				
Motel, hotel cabin or B&B	2,979	29,552	836	1,694
Camping fees	244	4,541	77	150
Restaurants & bars	2,991	51,435	1,089	1,653
Recreation & entertainment	1,255	22,331	418	784
Other vehicle expenses	173	2,009	88	102
Local transportation	315	6,522	158	242
Grocery stores	279	4,770	140	204
Gas stations	114	1,401	48	80
Other retail	583	10,500	273	423
Wholesale trade	266	1,570	114	206
Local manufacturing	537	685	48	118
<b>Total Direct Effects</b>	<b>9,736</b>	<b>135,316</b>	<b>3,289</b>	<b>5,656</b>
Secondary Effects	5,256	42,194	1,753	3,279
<b>Total Effects</b>	<b>14,992</b>	<b>177,510</b>	<b>5,042</b>	<b>8,935</b>

**Source: Cui et al., 2011**

*Value added* is the amount left over after all material and overhead costs have been deducted from sales, leaving an amount for wages and social benefits. It is typically the wealth left to the organisation for its true purposes. An increase in value added can be the result of improved *secondary effects* (both induced and indirect) which is the charges related to the re-spending of money initially accounted for by economic benefits of the tourism industry. As the tourism industry grows, various other industries also begin to develop such as linen suppliers, construction companies, publishing houses and so on.

This data is produced every two years, and is used by the NPS to justify funding from the Federal government. At the time of writing, the 2016 survey has just been published. The executive summary includes the following statement:

“In 2016, the National Park System received an estimated 330,971,689 recreation visits. Visitors to National Parks spent an estimated \$18.4 billion in local gateway regions (defined as communities within 60 miles of a park). The contribution of this spending to the national economy was 318 thousand jobs, \$12.0 billion in labor income, \$19.9 billion in value added, and \$34.9 billion in economic output. The lodging sector saw the highest direct contributions with \$5.7 billion in economic output directly contributed to local gateway economies nationally. The sector with the next greatest direct contributions was the restaurants and bars sector, with \$3.7 billion in economic output directly contributed to local gateway economies nationally”. (Thomas, Koontz. 2017)

This data is some of the most comprehensive and well documented on the subject of economic impacts of national parks, yet it only uses estimates for number of tourists and what their expenses will be within specific areas. Due to the 60-mile distance buffer placed on each park, it becomes problematic when producing results as many individuals will purchase their good in their home region and bring to the National Park. This can include camping equipment, consumable goods and other transport costs (such as rental, flights and bus trips).

### *Conclusion*

This paper does not rely on a comprehensive data collection methodology, but it provides clear guidelines on how the collected data can be analysed and to what extent it can be categorised. The end product is clear and easy to understand statistics based on the spending patterns of tourists. It is included in the literature review due to it being one of the few papers that calculates economic multipliers using the MGM2 model and shows how important they are. While this model reduces annual data collection to a minimum (just visitor numbers and expenditures by categories) it requires special skills to include economic multipliers. The MGM2 model is an important part of a toolkit for analysis in the impact of national parks and is currently being modified for protected areas in developing countries by the Global Environmental Facility (Child, 2017). The method has the same starting point as Wood et al's (2003) model, but moves beyond just tourist expenditure to incorporate job creation, value addition and economic multipliers.

This paper provides a good example of what national assessment of national parks economics with strong justification of the role of parks as economic engines to financial policy makers. Overall, this paper highlights the use of simple primary data in combination with an input/output economic model.

#### **2.4 Ecotourism as a mechanism for sustainable development: the case of Bhutan**

*By Chhewang Rinzin, Walter J. V. Vermeulen, Pieter Glasbergen*

This paper assesses the socio-economic, environmental and cultural impacts of the tourism sector in Bhutan and asks the question of what can be expected from the estimated growth from the tourism industry. Bhutan has a tightly regulated tourism policy which has been enforced to increase economic development within the country and ensure that the industry is *low impact but high value*. This paper labels this tourism industry as “Controlled Liberalization” (Rinzin, Vermeulen, & Glasbergen, 7, 2008)

This paper varies from the others that will be overviewed in this chapter as it has a more specific focus on tourism policy on a national level, rather than its economic impacts within a localised area. However, this paper very effectively is able to map out the flow of capital generated through tourism fees and how various sectors of the economy benefit financially from the pre-determined government tourism fee for all foreign tourists undertaking and trekking within the country. Understanding and tracking the flow of tourism finance is key to being able to measure its economic impact to a country. However, very few nations have this sort of transparency in place or at least easily available.

Bhutan is a small land locked country located in South Asia. It lies at the eastern end of the Himalayan mountain range and maintains strong Buddhist religious practices throughout the country. Although the country is in its transition period from its traditional rural practices into becoming a modern economy, it maintains that sustainable development is to be the core of all its policies and developmental initiatives. As Bhutan is becoming a popular tourist destination, its government continues to have this industry highly regulated to ensure that ecotourism standards are met as to preserve its natural environment and world renowned trekking trails.

This study was undertaken to measure the economic effectiveness of ecotourism within the Political, Social and Environmental sectors of Bhutan's economy. Table 2.6 highlights an overview of the methodologies used in each of the three pillars. **Table 2.6: The 3 pillars of research being addressed**

<b>Political Analysis</b>	Field study and interviews
	Analysis of published and unpublished government information
<b>Socio-Economic Impacts</b>	Analysis of the added value in the tourism supply chain
	Financial expenditure data provided by businesses in the sector and other available statistics
	Financial data from the expenditure samples of six selected tour operators
<b>Environmental and cultural impacts</b>	Interview conducted with tour operators, restaurant and hospitality industry, and local communities

#### *Political Impacts*

This consisted of an analysis of the 2001 Ecotourism strategy which has six key points determined by Bhutan's government (Rinzin et al., 2008):

1. Guiding Principle : High value, low impact
2. Semi Liberalized market
3. Tourism market is restricted to domestic entrepreneurs, who are usually small-scale operators
4. Region restrictions
5. Tourism to be a seasonal industry
6. Tourism to be focused on nature and culture

Although Bhutanese policy states that this type of tourism will ensure environmental and cultural sustainability and aids economic development through targeting niche tourist markets, it results in a low volume, high cost form of tourism. This has made it difficult for local operators to build up any market share and benefit from the growth in the industry.

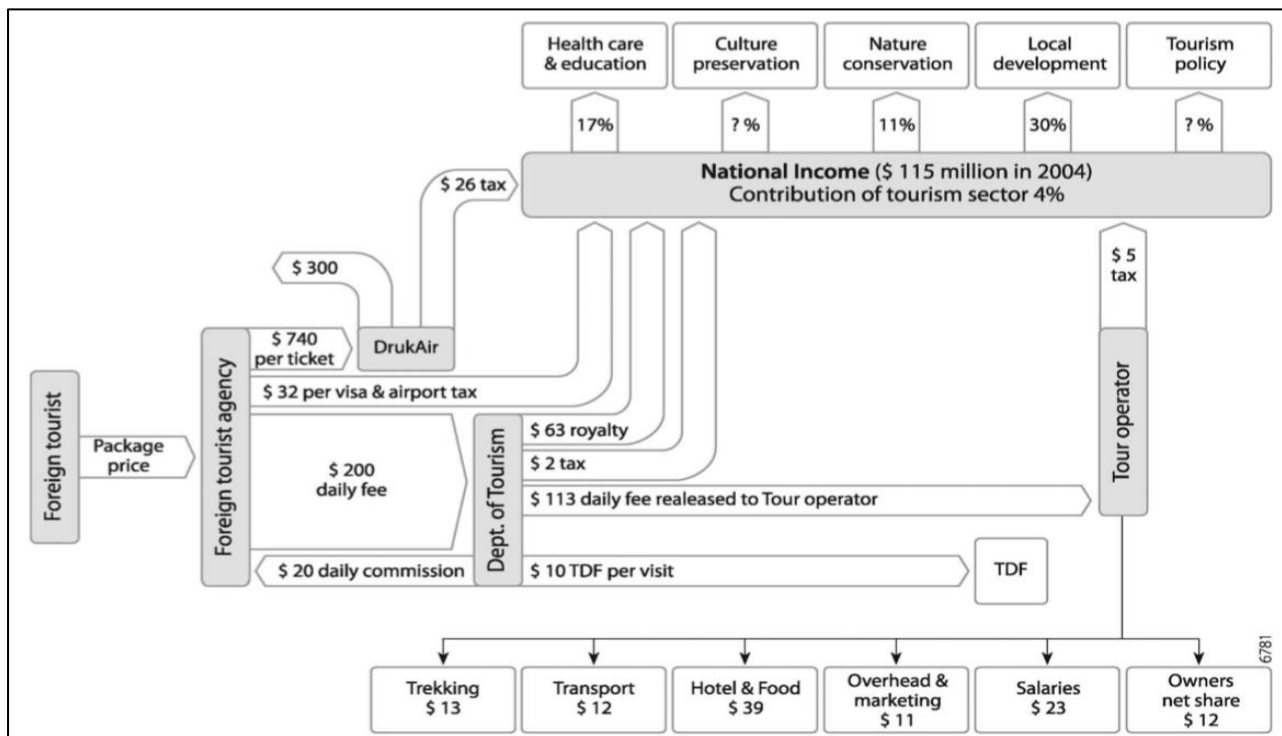


*Socio-Economic Impacts*

The flow chart below gives an overview of the socio-economic impact that have been traced through consultation and research between the authors and tour operators, hotels, Druk Air Corporation, national statistics, national budget and accounts. This flow chart is a particular strength of the study and therefore one of the reasons the researcher had selected it.

By using financial data the research team “were able to create this flow chart showing the transaction movements of major expenses incurred by tour operators and tourists” (Rinzin, et al., 2008). The \$200 per day “government fee” was introduced to boost financial flows through the economy and is allocated to a number of different sectors. The information on the model also gives insight into the financial expenditure and additional costs associated with an average trip to Bhutan such as flights, transport, taxes and immigration requirements. The purpose of the fee is to boost economic development and build up the tourism industry.

Figure 2.1 below illustrates the findings from Rinzin et al on the flow of expenditure resulting from the tourism industry through the Bhutanese economy. This provides an excellent visualisation of how Bhutan’s centrally controlled tourism sector operates.



**Fig 2.1: Flow of expenditure through the tourism industry**

Source: Rinzin et al., 2008

Ninety seven rural households were also interviewed which regularly benefit from the tourism industry to determine how the regularisation of visitors effect their livelihoods. Most noted that they benefitted from trekking tours providing transport (68%), porter services (56%), arts and crafts (35%), vegetables (30%), entertainment (29%), food and lodging (25%) and the sale of dairy products (16%). Research indicates that these homes have benefitted accordingly from the regulation of the Bhutanese tourism industry, which has given these households the ability to generate income despite being located in remote areas as eco-tourism trekking routes regularly go through these isolated areas with rural settlements.

### *Environmental Impacts*

Much of the analysis of the environmental impacts came from analysis of the trekking routes and consisted of the impact of human foot traffic such as soil erosion, solid waste and land degradation. Data was collected through observation of the data capture team, government documents and interviews with local operators and local residents. A large part of the study focused in the relationship between tourists visiting the region and the purchase of livestock for transport purposes, highlighting this as a contributor to soil degradation.

### *Conclusion*

This paper stands out as it clearly illustrate and measures the direct impact arising from regulated eco-tourism with the use of a flow diagram. Economic impacts within natural environments can be measured based on policy, socio-economic and environmental outcomes. This gives a well-rounded approach to the study but seems to produce three separate types of results. Although the policy research methodology is important in a country with tight eco-tourism laws such as Bhutan, it is not always applicable to measure this in all developing countries. However, the socio-economic impacts are well documented and the tracing of financial expenditure is represented in a commendable graphical format. The methodology used to trace this is predominantly from secondary data sources such as tour operators and national government. The important aspect of this study is presenting the different ways of carrying out research methodology depending on what aspect of tourism is targeted. Tracking the financial expenditure was somewhat made easier by the fact that there is an overall flat rate for tourists to pay daily. This was coupled with effective information from tourism stakeholders who allowed the team to track expenditure through the supply chain system.

## 2.5 Whale shark tourism in the Ningaloo region

By: *Tod Jones, David Wood, James Catlin, Brad Norman*

This paper focused on the whale shark tourism in the Ningaloo region in Western Australia and aims to assess the economic outputs it provides for the region. The research has three main components:

1. questionnaire and data gathering
2. analysis of participant demographics
3. multiple linear regression analysis.

The purpose of the survey was to build up a database of information on expenditure patterns by whale shark tour operators and to calculate the tourism expenditure for the demand of this marine wildlife. The questionnaire used was based on that developed by Wood (1997) in his research on the region in 1997 but was adapted and updated by the Sustainable Tourism Cooperative Research Centre (STCRC) to cater for modern day requirements.

There were two methods used when gathering tourist information through the use of questionnaires. Firstly, surveys were distributed to participants after they returned from their tours and collected from them immediately. Secondly, surveys were distributed to the tour operators for distribution and collection from visitors. After the collection, the surveys were scrutinised for missing data and inconsistencies in certain fields. Some surveys were excluded for participants who were thought to be residing full time in the region. Some of the entries with incomplete data were excluded due to incomplete fields, inaccurate data and if the survey was completed by local residents. Having all fields fully completed is a requirement for a multiple linear regression model so therefore the completed surveys were scrutinised and screened by the research team.

The participant demographics were analysed and compiled accordingly. Then a comparison of various statistics between 1995 and the information gathered through the current survey was undertaken. This included comparing trends in average expenditure, geographic origin, average age and customer satisfaction of the experience.

The final stage of the research methodology was implementing the *multiple linear regression analysis*. This is a model that is used to assess the association between two or more independent variables and a single continuous dependant variable. It produces an output which is measured

as an expected value of the dependant variable. The model applied used the formula:

**Fig 2.2**

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + \dots + b_p X_p$$

**Table 2.7: Defining the Linear Regression Model**

$\beta_0$	This term is the overall effect. It sets the starting level for all the other effects, regardless of what the X variables are set at.
$\beta_1X_1$	$\beta_1X_1$ and $\beta_2X_2$ pieces are the main effects terms in the equation. Just like in the simple linear regression model, these terms capture the linear effect each $X_i$ has on the output Y. The magnitude and direction of each of these effects are captured in the associated $\beta_i$ coefficients.
$\beta_2X_2$	$\beta_2X_2$ is the second-order or squared effects for each of the Xs. Because the variable is raised to the second power, the effect is quadratic rather than linear. The magnitude and direction of each of these second-order effects are indicated by the associated $\beta_{ii}$ coefficients
$\beta_pX_p$	This effect is called the interaction effect. This term allows the input variables to have an interactive or combined effect on the outcome Y. Once again, the magnitude and direction of the interaction effect are captured in the $\beta_{12}$ coefficient

**Source: Gygi, Williams & DeCarlo, 2005**

The first step in this procedure is to decide which variables to input first. It was expected that group size and length of period of stay would have the greatest impact. Secondly, a series of procedures was run in order to identify the variables that had the greatest impact on expenditure and therefore made it possible to identify the most influential variables. The order used was group size - duration of stay - age. After running the model, it could be explained that there was a 49.3% variance in expenditure.

Results from the surveys concluded that the first method of collection (immediate collection) produced a 90% response rate compared to the second method of collection which was less reliable and produced large variances in the statistical frequencies. It can also be noted that over half of the participants were under the age of thirty and consisted mostly of women (63%) whom were earning over \$50000 a year. Most of the tourists came from overseas (UK and Europe) which is a change from the 1995 survey in which the largest international portions came from Japan. The most popular accommodation type was campsites and caravan parks and the average length of stay was less than a week. There was an increase in average expenditure from \$81.30 per day in 2003 to \$186 per day in 2006. When valuing whale shark tourism, 37% noted that they would not have visited the region if whale sharks did not exist there (Jones, Wood, & Catlin, 2009). Unfortunately there was no table of results available in this paper as the authors chose to showcase the results through the use of summaries. The results produced by the multiple linear regression models showed that:

- Duration of stay was positively correlated with daily expenditure.
- Group size was negatively correlated with expenditure and was responsible for the largest amount of variance in the base model. In short, the results showed that a 100% increase in group size was met a 70.6% decrease in daily expenditure per person.
- Age was positively correlated with daily expenditure as the 100% increase in age resulted in a 35.7% increase in daily expenditure.
- Men spend on average 21.6% more than women per day.
- Visitors from abroad, mostly Germany and Japan, spend 17% and 26% respectively less than Australian nationals.

### *Conclusion*

This paper highlights the use of primary data collection and substituting data into economic output generating models to provide results which can then be analysed against historical trends to measure the changes. Although the final statistical results of this paper were not adequately documented, the use of summaries to show linkages between independent variables is a good way to make the information easier to understand to non-academic readers. The primary data collection for this research was highly specific to meet the requirements of the multiple linear

regression model as the authors had specific outputs in mind. This is a key feature for all research as an understanding of the desired outputs will enable for effective and efficient data collection. It is clear from the results summaries that the data collected was predominantly demographic and specific to the tourism sector rather than having a broader economic focus. If we consider the various methods and models already analysed in this chapter, we can assume the data included aspects such as:

- Age of visitor
- Sex of the visitor
- Group size
- Duration of stay
- Country of origin
- What was the visitors daily expenditure
- Would they visit the region if the whale sharks did not exist
- Have any previous trips been made to the region

This paper was selected for analysis to highlight that data collection methods need to be specifically tailored to meet the expected research outcomes. Conducting primary research is time consuming and can also be costly and therefore mitigating ineffective or unnecessary data should be at the core planning for all researchers. This paper is also useful as it highlights the effectiveness of immediate data collection to reduce errors and increase participant's response rates. In the event of requesting an independent party to undertake research surveys, responses will most definitely decrease due the independent not having this as a priority or due to a lack of understanding of the research's purpose.

The findings highlight various trends and correlation between two variables and assumptions can be conducted from this. However, the results can be used as somewhat of a baseline for the primary research that will be conducted in this thesis that will give the researcher some sort of idea what to expect when analysing data on tourism demographics.

## 2.6 Assessing the Effects of Terrestrial Protected Areas on Human Well-Being

*By: Andrew Pullin, Sarah Dalrymple, Neal Haddaway, Teri Knight*

This paper was prepared for the Scientific and Technical Advisory of the Global Environmental Facility (GEF) in which research was conducted to produce an advisory document which could produce empirical evidence of positive or negative impacts of Protected Areas on human well-being on a local to regional scale. The research used a meta-analysis of the literature to assess of the distribution of costs and benefits within local communities living inside protected areas and their buffer zones based on various characteristics of the recipients. A large part of this research included the economic impacts that can be associated to rural communities within protected areas through the tourism industry tourism such as job creation, income, infrastructural development and healthcare.

The research methodology conducted included two main components, namely a qualitative synthesis of literature reviews and related documentary evidence; and a synthesis of quantitative evidence of impacts, including people's attitudes and views which was led by Bangor University. One of standout approaches to Pullin et al's research is that no online search engines were used to build up a reference list of previous works. Rather, only selected organisations were contacted and information requested from them. Pullin et al claims that the purpose of this was to improve the quality of information and reduce poor quality data.

Screening of the articles was conducted as the first stage of the analysis of data. Each article was screened to determine if it contained evidence of people's views or quantitative evidence of impacts. Coding tools were used in order to determine the qualitative research documents. The coding tool (although not shown in the publish document) can be found below in Table 2.8.

**Table 2.8: Coding tool for data analysis**

Are the methods clear?	
Name of Protected Area	
Country of Protected Area	
Categories	<ul style="list-style-type: none"> <li>a. Strict nature reserve</li> <li>b. Wilderness area</li> <li>c. National park</li> </ul>

	<ul style="list-style-type: none"> <li>d. Natural monument or feature</li> <li>e. Habitat/species management area</li> <li>f. Protected landscape/seascape</li> <li>g. Protected area with sustainable use of natural resources Proposed</li> <li>h. Unknown/not reported/not applicable</li> <li>i. Buffer zone/transition zone</li> </ul>
Date Park/reserve established	
Date of change of status	
Date of current status	
Study context	<ul style="list-style-type: none"> <li>a. Dates not reported</li> <li>b. Date of study 1992-2003 (<i>Post Rio Summit</i>)</li> <li>c. Date of study 2004-present (<i>Post Durban Accord</i>)</li> <li>d. Academic authors</li> <li>e. Non-governmental organisation</li> <li>f. Civil society organisation</li> <li>g. Commercial organisation</li> <li>h. Park authority</li> <li>i. Government department</li> <li>j. Affiliation of authors unclear</li> <li>f. Funding reported (yes/no)</li> </ul>
Time between current status established and data collection (Years)	
Study Design	<ul style="list-style-type: none"> <li>a. Case study</li> <li>b. Ethnography</li> <li>c. Participatory development</li> <li>d. Survey</li> <li>e. Interviews: Structured/semi-structured/scales</li> <li>f. Interviews: Open-ended questions</li> <li>g. Focus group</li> </ul>
Population	<ul style="list-style-type: none"> <li>a. people living in/near protected areas</li> <li>b. people associated with parks</li> </ul>

Source: Pullin et al., 2014



Pullin et al. (2014) notes that “understanding the meaning of protected areas for well-being requires qualitative data collection methods that allow people to express their views freely rather than merely responding to predetermined categories, as well as analysis that will provide thick or rich findings”(Pullin et al, 2014). This then determined the selection criteria for the studies used in the report.

In order to determine which articles were quantitative, a *kappa test* for consistency of decisions regarding inclusion and exclusion at abstract level was used. This was conducted by independent surveyors who selected the relevant articles, which were then given to a board of reviewers who would reach a consensus based on title, abstracts and information supplied. The selected texts were then screened and reviewed and followed an exclusion criterion which determined if the text was appropriate for quantitative uses. The list of reasons for exclusion can be found as appendix 6 on the Science and Technical Advisory Panel (STAP) website (<http://www.stapgef.org/publications/>) but will not be included as an annex in this report.

After the screening processes, 34 qualitative documents were selected and used for analysis and through their analysis, Pullin et al. (2014) was able to determine a number of trends based on the effects different types of natural areas have on human well-being. However, they note that quantitative evidence is inconclusive on the importance of parks on local populations. However, it was possible to synthesize qualitative evidence as this produced results to show how positive or negative impacts arise from the establishment and implementation of regulations (or investment) to protect natural environments.

### *Conclusion*

Although this was a pioneer study, its meta-analysis is overly complex and somewhat difficult to follow for readers as well as near impossible to undertake without a substantial research team. Much of the evidence of previous research is bias towards effective governance of protected areas. In Pullin et al's. (2014) conclusion, he gives a large report on why many of the articles he initially used were rejected from the study and notes the limitations of the selected ones despite them being used in this work. In short, previously conducted research will only produce results specific to the individual's research objectives and conclusions can be drawn from that. However, there is a need to conduct primary comparative research in order for reliable results to be produced but this again will be criticized by the next researcher. It also needs to be noted that to rule out online search engines as a matter of gathering data, one needs

to have a large team of researchers, a good professional connections network and a large amount of time. Despite reviewing over 1000 qualitative and quantitative papers, the results were not conclusive. Therefore this paper seems poor when it comes to identifying methods for research due to the styles used and the extent of the scrutiny given.

## **2.7 Economic Values of National Park Systems Resources along the Colorado River Written in conjunction with: Economic values if National Park Systems within the Colorado River Watershed: White Paper**

*By: National Parks Services; Duffield, J.*

This report was compiled by the national parks services of the U.S Department of the Interior and is a proposal for research to be undertaken to estimate magnitude and significance of the National Parks system along the Colorado River. The report is based on a previously completed White Paper, titled ‘Economic values if National Park Systems within the Colorado River Watershed’, written by Duffield (2006) and therefore a practical methodological approach to this work. The purpose of this report was for the Environmental Quality Division to be able to determine economic values along the various parts of the Colorado River. This enables the division to plan for participation in water resource allocation decisions affecting the operations of the national park system units along the river (Duffield, 2006). This report consists of three main methodological components in order to produce the required outcomes and is reviewed in conjunction with Duffield’s White Paper (2006).

### **1 – Reviewing existing data**

This involves a desktop study of all data that would be relevant to the estimation of economic value of the National Park System of the Colorado River. This will include park visitation data, dam and reservoir operations and seasonal changes in water levels and visits. Most of this information will be available in various management documents and technical reports that are specific to the river system, but similar work will be used for methodological purposes. The similar setting data would enable researchers to identify gaps in the research relevant to the Colorado River and could therefore be filled through the use of primary research. Duffield notes that this review “will provide estimates of economic values for most beneficial uses of the river system, including agriculture, hydroelectric and recreation” (Duffield, 2006). After reviewing that available data, reports need to be compiled and a peer review undertaken.

## **2 – Conducting Primary Research**

The original research collection was highlighted in Duffield's white paper in three main parts.

- A survey of recreational visitors to estimate use values and expenditures in the study area
- A survey of residential populations in the multi-state area (nonuse values)
- A survey of national households to estimate nonuse values

He notes that there are gaps in the available literature as well as out of date studies which need to be updated for worthwhile estimates to be made. The results of these three surveys will not only be useful for the Colorado River study, but also future studies within the US. To limit costs, the surveys could be either phone or web based or a combination of these two approaches. Duffield does not include what the surveys structure will consist of in his white paper.

The draft from the NSP is related to phase 1 filling out gaps that have been identified as well and updating old data. The primary focus of this phase is to collect data at two main areas; the hydroelectric power plant and the high tourism volume recreational area. The information gathered will be conducted through a survey which incorporates the random utility maximization model as this will estimate consumptive values. There is also a need to incorporate non-use value surveys as these will estimate the value people place on the option on natural resources against the value of the hydroelectric plant. The National Parks services also request a peer review and professional compilation of the gathered results.

The main differences in the survey methods between the White Paper and the Final Draft by the National Parks Services include:

- The use of the Utility Maximization Model which is not mentioned in Duffield's paper.
- Narrowing the use value research to include only two options within the study area, namely the Hydroelectric Plant and the recreational area.
- The use of the Welsh (1995) nonuse value research method by National Parks Services which Duffield states is out of date.

## **3 – Integrating Results**

This involves the integration of the two above steps to estimate the welfare measures and regional impacts for National parks systems along the Colorado River. It will then be possible to estimate the economic values (direct and indirect) of the Colorado River based on the various

land uses. Duffield notes that the integration of results must not only be the ones conducted for this report, but with the results of existing studies.

The three stages of research methodology above all aid to the development of a “user friendly analysis tool” which can be developed to be incorporated into similar land use regions of National Parks to be able to estimate the economic impacts and consumer use and non-use values of the area. Duffield outlines the uses of developing a user-friendly analysis tool in his white paper:

- The user will be able to input changes in water allocation.
- The model will output the change in economic values dependent on the given allocation of water.
- The model will be able to determine short and long term effects of a given water allocation.

### *Conclusion*

These two papers were combined and included into the comparative analysis as a real life example of the development of research methodologies in estimating economic impacts based on introducing a comparative analysis (hydroelectric plant vs recreational park). Although these papers do not show any results other than a few estimated ones, it shows the structure of how to gather primary and secondary data. Interestingly enough, Duffield’s (2006) paper only had minor changes when compared to the NPS review paper and the major changes being highlighted in this analysis. This shows that Duffield’s (2006) work is somewhat full proof and falls in line with previous research conducted before his, despite his criticisms of older work. The work by Duffield (2006) varies from some of the other paper analysed in this section as he highlights a greater focus on non-use values. His work is concerned with the thoughts of the population rather than the actual use value of the resource which has both positive and negative outlooks.

After much searching and consultation with the Stellenbosch University library staff, the results of this paper are not yet available through academic channels.

## 2.8 Tourism Impact Estimation: Klamath River Case

*By: R Johnson*

This paper measures the economic impacts of a certain natural resource or nature based activity to a particular region. The author aims to show how to determine which natural resources have a greater impact over another by using the IMPLAN (Impact Analysis for Planning) input – output system evaluation method. Its strategies focus is that many national governments are allocating their resources predominantly on tourism regions rather than on the specific natural resources located within these regions. These include, for example, white water rafting and the river it takes place on. By directing focus to specific resources, tourism could potentially increase and the value of the resource would be higher within that region.

The case study for this paper is on the Klamath River in Oregon, USA. As with a number of the previous papers analysed in this chapter, the USA seems to have a greater interest towards understanding economic impacts of natural resources over other countries. An obvious reason for this is the level of development of the country itself and the resources it is willing to spend on research in various fields. However, similarities between this paper and many areas within Southern Africa can be made due to the large number of single natural resources that generate tourist demand by the activities or experience that they offer, despite the regional location.

The research methodology for this paper consisted of a primary data survey as well as previously collected data by NPS on the tourist numbers per annum for the region. The survey was designed to understand whether tourist visited the region to only undertake white water rafting or whether this was just one of their stops on a round trip. It also took into account variable expenditure for the trip such as accommodation, activity costs, daily expenses and distance travelled to reach the destination. Once this data was gathered, it was compiled to determine if visitors would still visit the region even if the white water rapids did not exist. It goes on to separate single destination users, those who only visit the Kalmath River for white water rafting, and users that visit the rapids as part of a multiple destination trip. The table below is taken from the paper and shows the captured results of the surveys (Johnson, 1993).

**Table 2.9 – Survey Results of Kalmath River Usage**

<b>Users</b>	<b>Number</b>	<b>Percentage</b>
<b><u>Single Destination Users</u></b>		
<i>Local</i>	<b>73</b>	<b>19</b>
<i>Non-Local</i>	<b>182</b>	<b>34</b>
<b><u>Multiple Destination Users</u></b>		
Would Not Still Make Overall Trip		
<i>Local</i>	<b>10</b>	<b>3</b>
<i>Non-Local</i>	<b>107</b>	<b>28</b>
Would Still Make Overall Trip		
<i>Local</i>	<b>3</b>	<b>1</b>
<i>Non-Local</i>	<b>61</b>	<b>16</b>
<b><u>Total Use</u></b>		
<i>Local</i>	<b>86</b>	<b>23</b>
<i>Non-Local</i>	<b>296</b>	<b>77</b>

**Source: Johnson (1993)**

The second part of the research methodology consisted of adjusting the expenditure patterns of tourists using the IMPLAN input-output method. “The IMPLAN system allows users to adjust estimates of final demands based on primary data in order to more accurately estimate economic impacts” (Johnson, 1993). Some of the data collected could not be submitted into the IMPLAN as is the IMPLAN works only with producer prices of goods (before margins for tax, transport and retain are added). Once the total tourist expenditure was added into the IMPLAN model, adjustments were made to determine expenditure within the Kalmath compared to expenditure in the neighbouring towns as this can determine economic multipliers of the Kalmath rapids. The results of this showed that an estimated \$290.59 was spent per tourist with \$172.90 being spent in neighbouring towns (Johnson, 1993). This can further be adjusted to determine spending of non-locals as the author notes that expenditure of locals is not adding to the economy but rather just recirculating of financial capital.

### *Conclusion*

This paper was selected because it isolates a specific natural resource and aims to determine economic impacts not only for that resource, but against the total expenditures from tourists within the surrounding regions. The author uses mainly primary research methods through the use of surveys and commodity prices estimates to generate results that can be further adjusted

using the IMPLAN model. Unfortunately the data for this model is only specific to the USA but its use must be noted as it is able to make economic impact analysis simply, quick and cost effective. The results produced prior to the use of IMPLAN still give good user feedback and show that there is a large percentage change of potential tourism to an area in the event that this resource exists or not. The survey was fairly large and included 524 surveys which would not be possible for smaller scale studies based on time, capital and surveyors involved.

An overall analysis of the IMPLAN model shows that it assumes that all expenditure within the area is a direct result of the river. It could potentially give more accurate economic impact results is produced outputs based on expenditure that would be lost without the river.

### **Findings and Analysis**

The purpose of this chapter was to analyse seven identified research papers containing different types of research methodologies but with an overall focus on the economic impacts related to an environmental resource or a natural area. The selected papers had research undertaken in regions that varied economically, geographically, politically and culturally which give variation and comparison when analysing the results. This provided a range of methodologies which will serve as a baseline to the development of my own primary research.

A number of findings based on similarities and differences are put together to better try and understand what the building blocks of effective primary research consist of. The above analysed papers highlight some of the various economic theory used to measure a unit based output. These include Total Economic Value, Multiple Linear Regression and MGM2 Models. These provide varying statistical data to measure various economic attributes that natural areas can generate.

Firstly, all of the papers used a desktop study as one of their first steps in data collection through national government statistics, national parks authorities, tour operators, private sector, previous research and transport services. This provides a baseline for new research to be built on by identifying loopholes, out of date information or new scientific developments. Secondary data in the desktop studies will be older than that of a current study and therefore can be used to measure historic patterns and trends and make future predictions. Through analysis of the available literature, it seems that most of the desktop studies for economic impacts of tourism through protected areas require statistics such as – number of tourists, origin of tourists, length of stay and expenditure in the study area. Although it may seem somewhat obvious, desktop

studies provide the researcher with a good knowledge of a particular subject which they can then decide if the undertaking of primary research will be viable or not. It can be possible that research into a certain aspect has not been previously conducted for a good reason such as political sensitivity, difficulty, lack of demand or unavailability of baseline data to make historic trend assumptions.

Secondly, the need for primary research is a key point to understanding trends within this type of market. The paper written by Pullin (2014) was an in depth and very large scale desktop study but produced a somewhat disappointing result. Although this could have been the intention of his work, it does show that it becomes more difficult to reach conclusions without current, first hand data being conducted to make a comparative analysis. Previously conducted research, as already mentioned, is a core aspect of measuring economic impacts and reduces time and costs of research, but all research is conducted slightly differently and therefore there will be inefficiency when coupling it with other data.

Conducting first hand research can be done in a number of ways but the trend is through the use of a participant based survey. Most of the research methodologies that were analysed undertook this task through a user based questionnaire which gathered similar data to that in the toolkit guideline developed by Wood (2003) in section 2.1. Accessing data banks through governments and other institutions is not always possible and therefore direct engagement with private and non-government sectors are required. Unfortunately private sector information can sometimes be inaccurate due to poor reporting or manipulation (for tax evasion or marketing strategies) and is not always regulated by a national authority. This also questions the reliability of unverified online sources as noted by Pullin (2011) in his work.

The extent of the data to be collected also plays a big role in determining the outcome of the research methods. If the researcher wants to collect information which will lead to determining non-use values of a natural resource, there will be a need to gather data based on personal opinions not only from current users, but those who know the resource exists and that value it without actually using it. This would mean that large scale surveys would need to be conducted and would require less technical user data such as general knowledge of the natural resource and the participant's personal valuation of it despite whether they visit it or not. In the event of an economic approach to determine economic values, the requirement for technical information would be required such as estimated tourist expenditure, number of visit, estimated



management costs of the natural resource and income generated through management. Obtaining this can of data is necessary as it builds the variables to substitute into economic theory and formula which will produce a measurable output.

Another key finding also included the requirements of simplicity throughout the research process. It can be noted that undertaking data collection is a hard task that requires forward planning and an effective approach to ensuring that participation by the target group is possible. A number of the papers analysed used questionnaires to get consumer feedback and put together some key statistics on the use of the National Park in question. This information then needs to be sorted and used to make projections, assumptions and showcase a specific output. To ensure that the data is showcased in a correct manner, it is necessary for the researcher to be comfortable with the model or tool used to create cognitive assumptions. This comes down to experience and knowledge, and therefore it can sometimes be strategic to use simple tools to prevent discrepancies.

Overall, the analysis of the various papers gave some guidelines to develop a starting point for conducting primary research in the environmental economic fields. This is mostly based on the structure of the research methods and order of activities which were undertaken from start to end. An analysis of the various tools and models used will also come into play when developing research idea. A starting point for most of the papers was a description of the tourism number within the area. Having some knowledge on how many people visit a region can give the researcher some idea whether it will be possible to gather a large sample size or whether the number of visitors does in fact contribute to any sort of economic impacts. The number of tourists can also be used as an indicator of available accommodation and general customer demand to the region.

Conducting a survey is then the next in the guidelines as this will enable the researcher to implement their own methodology designs as well as gather valuable primary data to compare, analyses trends or use one of the various economic impact. It seems that the most specific guidelines for conducting a survey come from Wood (2003) as his toolkit is simple and straightforward.

The final guideline would be to undertake an overview of the various economic and statistical analyses of the data to estimate value added, multiplier effects, supply chains, job creation or what factors of that natural area have the greatest effect on tourism.

## CHAPTER 3

### RESEARCH METHODS

#### 3.1 Introduction

This chapter explains the methods used in the data collection process which was undertaken at the Hwange National Park in Zimbabwe. The main purposes of the survey was to test and develop instruments modified from the analysed literature, to collect income and expenditure data on the park's lodges, and gather data on tourism expenditure to better understand any patterns. The focus of this research, therefore, was to trial the developed toolkit to assess what information public sector, private sector and tourists were prepared and able to provide. This will contribute to putting together a large sample database for analysis. As will emerge, Zimbabwe's current economic and political circumstances has created a culture of suspicion and reluctance to reveal financial information in anything but the broadest terms.

Two types of data collection methods were used, namely questionnaire distribution and interviews. Questionnaires were given to visitors at the end of each day and collected immediately, whereas interviews were conducted face to face with hotel owners to discuss their various expenditures. The data was then summarised into tables and analysed based on observations, relationships and differences between the data.

#### 3.2 Study Area – Hwange National park

The Hwange National Park is located in Western Zimbabwe in the Matabeleland North Province. The park is the country's largest and oldest covering an area of 14 650km<sup>2</sup> (The Zimbabwe Parks and Wildlife Authority, 2014). The park is one of the key tourism features of the region due to its wide variety of wildlife, large area and natural landscapes. It attract foreign tourists and also supports academic research in the wildlife, environmental and conservation fields. A number of NGO's also utilise Hwange National Parks to implement various wildlife and resilience based projects within the country and it therefore has received a fair amount of international attention such as UNDP, Plan International and Environment Africa. Due to Zimbabwe's current economic climate, Hwange is one of the few parks within the country that receives steady volumes of international tourists on a seasonally basis and therefore much of

the region's economic activity is built around this. The park itself is located about 200km South East of Victoria Falls, the country's main tourism attraction and one the 7 Wonder Natural Wonders of the World. It is therefore not uncommon for tourists to visit the park for a short period when arranging to come and see Victoria Falls.

Hwange Nation Park was selected as the study area based on a number of reasons. Firstly, due to limited tourism within Zimbabwe, Hwange seemed to be the best place to undertake tourism based research due to the potential volume of clientele that could pass through the park. Secondly, Hwange is one of the most establish parks within Zimbabwe and therefore has had NGO's, government and academic institution conduct various types of research within its boundary over time. One could assume that secondary data would be available through accessing this research and therefore improving this study's ability to measure and historical trends on tourism within the park. Finally, Hwange National Park was deemed to be an appropriate choice after discussion with the Stellenbosch University academic supervisors due to its location, size, accessibility and history.

### **3.3 Desktop Research**

After the analysis of the various selected papers in chapter 2, a clear starting point to any research is that of a desktop review and compilation of secondary data on the selected topic. The papers analysed were limited to 7 for the purpose of this paper, but a large number of them would have fitted the bill when its came to recognising innovative research methods. Nearly all the authors of the papers analysed in chapter 2 undertook a desktop study before undergoing primary research. Based on this approach, an analysis of tourism data from the Zimbabwe National Parks and Wildlife Authority (ZIMPARKS) was considered to predetermine tourism trends within Zimbabwe and more specifically within Hwange National Park.

A second key desktop analysis was the available statistics on the internet that had been conducted by the Zimbabwe Tourism Authority (ZTA) and the World Trade Organisation (WHO). Together, they have published reports on the country's state of tourism between 2000 and 2013. This data includes all aspects of tourism trends within the country such as purpose of visit, number of visitors, percentage changes between years, destination statistics, number of beds and percentage changes in number of beds between years. These documents give a strong over view of Zimbabwe's current tourism situation and also gives good examples as to

how tourism demographics have change depends on the economic and political climate. The data is comparable and easily understood due to the use of graphs and charts.

Looking at table 3.1, we can see that Zimbabwe's neighbouring countries are those that generally generate the highest tourism volumes. As the bulk of Zimbabwe's tourism comes from African National (83%), the top 3 countries (South Africa, Zambia and Malawi) are key role players in sustaining the countries tourism industry.

**Table 3.1: Tourist Arrivals into Zimbabwe from African Countries**

Source Country	2013	2012	Change (%)
Angola	1796	1437	25
Botswana	59441	64926	-8
DRC	23164	23584	-2
Egypt	1033	428	141
Ghana	1426	1274	12
Kenya	8230	7273	13
Lesotho	4942	20051	-75
Malawi	286510	241344	19
Mauritius	2960	1191	149
Mozambique	174137	146922	19
Namibia	11037	11487	-4
Nigeria	467	861	-46
Seychelles	383	2352	-84
South Africa	715260	719637	-1
Swaziland	5117	9338	-45
Tanzania	27285	14740	85
Uganda	4598	3914	17
Zambia	233721	278856	-16
Other (Africa)	9292	13007	-29
<b>TOTAL</b>	<b>1 570 799</b>	<b>1 562 622</b>	<b>1</b>

Source: Zimbabwe Tourism Authority, 2013

Although this information can be used as a baseline to measure future trends and create various assumptions based on tourism volumes, this data has not been updated for two years and therefore a number of changes could have happened in that time. This will always be one of the key underlying reasons for primary research to be conducted as updating data serves to measure current trends and shows the variations from the previous studies.

### **3.4 Primary Data Capture**

Unfortunately, after starting the research collection process, it was noticed that there is very little specific data available on the Hwange National Park itself when it comes to considering economic impacts and financial expenditures since the collapse of the Zimbabwean Dollar and the uptake of the US Dollar. This has resulted in some of the older data (pre 2008) becoming irrelevant due to the changes in tourism that has occurred since the onset of Zimbabwe's economic crisis. Although the basic statistics can be found such as the number of visitors entering the park, it becomes very difficult collecting data on the number of bed nights that park has per season as well as the overall capacity of all the lodges within the National Park and the accommodation on its boundary. ZIMPARKS is underfunded and understaffed and therefore gaining up to date and relevant data from their research offices is a time consuming and lengthy process which shows the need for primary research to be conducted if any specific information is required.

A data capture field trip to Hwange National Park was undertaken in order to get first-hand information about staff employment, lodge expenses and the capacity levels of a number of accommodation types as well as a look at the expenditure patterns of visitors currently within area. The primary research consisted of two main parts: firstly interviews with lodge management about their expenditures, and secondly through questionnaires given to visitors within the park and its boundaries. The construction of the questionnaire and interview questions came about through analysis of various tried and tested research methods that have been highlighted in chapter 2.

### **3.5 Lodge Management Data**

Various lodges were selected to gather information on their operational expenditure, statistics and visitor capacity trends. The lodges selected were based within the Hwange National park

boundary rather than actually inside the park itself. This was specifically done to prevent breaching any regulation with the ZIMPARKS authorities whom heavily control and regulate all non government authorised research within the park itself. Their selection criteria was based on accessibility (road conditions and distance) as well being located no more than 10km away from the park boundary. Most of them are located within the Dete Valley area, a small seasonally flooded depression that forms part of Hwange's seasonal rivers. It is assumed that those lodges within this buffer zone cater for tourists whom have undertaken their visit to enter Hwange National Park as their primary purpose. Anything further than this can fall into private owned ranch lands or rural district council controlled areas and therefore visitors might be there for other personal and professional reasons.

A number of questions were asked in order to determine patterns management priorities (such as sourcing of goods, staff employed and target markets) and to what extent this pattern is linked to a lodges income trends. The selected lodges vary in size, exclusivity, cost, services offered and maximum capacities so as to ensure that a wide variety of options were included. For the purpose of confidentiality, these lodges won't be named or differentiated from each other, but rather used to build a statistics database below.

The first step in conducting this research was selecting specific lodges based on:

- accessibility,
- willingness to provide data,
- capacity,
- ownership (private or ZIMPARKS).

It must be noted that ZIMPARKS managed lodges were rejected from the selection criteria due to their internal restrictions on gathering research data without prior written government approval to do so. This will be further discussed later in this chapter.

Once the lodges had been identified, email correspondence was set up to ensure that clearance was given by management to conduct research with both the financial staff as well as the guests staying there. This then narrowed down the final number of lodges which enabled interviews to be conducted. On arrival to Hwange National Park, two lodges no longer felt comfortable with this research and requested that both the lodge and their visitors not be used in this research.

The interviews with lodge management (see Annex 1) gathers information on monthly turnover, expenses, labour employed, purchase of consumable and non-consumable goods, and the lodge capacity. The data was then compiled in a simple table for analysis of comparisons and differences. As tourism is a seasonal industry, lodge management were asked to discuss the effects on expenditure and labour throughout the year, despite this being estimated. Although not all of the expected lodge managers were available for an interview at the time, some of the information was done through email correspondence and data was collected from there.

### **3.6 Tourist Questionnaire Data**

The tourist expenditure survey targeted visitors currently visiting the park and staying more than 1 night in one of the selected lodges. This data consisted of the number of people in a party, their home location, household income, holiday expenses, travel costs and total expenses in the park. One of the key purposes of this survey was to develop the methodology so sample sizes were somewhat small to ensure that data collected could be monitored and easy to work with. The data was gained through a questionnaire which was developed with the help of Stellenbosch University School of Public Leadership faculty members and then revised by lodge managers for review before handing it to visitors. In the event of groups of two or more visitors travelling together, only one member of the group was required to fill in the questionnaire to try and avoid duplication of the same data. Due to many of the lodge's guests being out during the day for recreational activities within the park, it was challenging to request a survey from each and every guest. However, many of the lodge's staff members supplied the information on when best to catch the visitors before they undertook their tours and activities.

Only one survey was given per group, whether it be a group of acquaintances or a family, as the results for each member of the party would basically be the same or at least similar. Generally when a party travel together they split the expenses of transport, fees, food and other consumables. The only initial concern was that their place or origin could be different and therefore their travel, travel types and household income would vary and therefore affect the overall costs of their trip. If this was the case for a particular group, additional surveys were given to those being separated into three groups: National Tourists, Tourists Residing within SADC and Tourists Residing outside SADC. As currency values vary inside the SADC region compares to countries outside of it, a Unites States Dollar equivalent was given for all financial



questions such as household income and various expenditure costs. This will be the standard currency used throughout this paper unless specified otherwise. Conveniently, this is the official currency in Zimbabwe so a greater accuracy of estimates was given due to minimising conversion rates when participants were plotting their expenditure.

The questionnaire also asked participants to give details on their expected expenditure within the national park during their stay. This question ensured that data received through the surveys would be able to determine how much money was spent within the national park as opposed to the estimated multiplier effects that it can have. This also included expenditure on purchases within the park itself such as curios, firewood, game drives, and additional consumable items. This direct economic impact would be able to give a good estimate of how to measure the value of the park independently of its external operations. It would also be interesting to determine if visitors prefer to purchase their goods outside the park and not spend much money once inside it.

One of the final questions to be asked on the questionnaire was whether the visitors would be willing to pay a larger amount of money for the same experience on another visit to Hwange National Park. When turning back to basic economic theory, it is known that all goods can be measured by their price and demand elasticity. This means that some goods (normally necessities) have a minimal change in demand when the price is increased and some have a large change in demand under those same circumstances. If visitors are not willing to pay a larger amount for the same overall experience then there is an elastic demand for the national park. Obviously this is one of many ways to look at measuring demand of a natural resource. We can also consider direct use values, option values and non-use values.

The data from the collected questionnaires was then compiled on an electronic spreadsheet programme as this is the best option when manipulating and managing the data volumes. The table produced is larger than what would fit on one standard A4 page and therefore this would make it not very user friendly

As noted earlier in this chapter, the questionnaire was developed through analysis of various research methods and survey techniques by experienced authors and the positive and negative aspects of each were weighed up. The results were then given an overview by a supervisor from Stellenbosch University and changes were made to meet academic and ethical

requirements as stipulated by the Ethical Clearance Department. The resulting questionnaire was then printed for use within the park for data collection to be undertaken.

Understanding how various research methods have been used came in very useful when developing this questionnaire as it was possible to determine what data other researchers found relevant and irrelevant for measuring economic impacts and trends. Statistics such as gender and age were ignored due to the fact that the survey only had a small number of participants and therefore trends along those lines will be less reliable. This type of data also seemed unnecessary as this questionnaire was aimed at gathering information on spending patterns of the participants whilst in the national park rather than the demographics of tourism within the area. Previous research on the development of questionnaires states that “the revision (of the questionnaire) needs to address factors relevant to a specific target population” which is why it is important to minimise unnecessary data collection and focus on what is required in the end result (Petrića & Czáríb, 2003).

### **3.7 Tourism Questionnaire Data – Second Attempt**

A second attempt at data collection was undertaken due to a poor response by participants when it came to filling in the financial survey in the first questionnaire. After a number of consultations, a different approach was used to try and gather data and engage visitors in Hwange National Park to wilfully submit the information on where they had spent their money and on what. This is crucial so as to determine where expenditure patterns are occurring and how the Hwange National Park is potentially affecting tourism expenditures on both a national and international level. The first step taken was to analyse why participants did not give full details on expenditures and how to best alter the structure of the questionnaire to engage this issue. As all the initial questionnaires were given to participants by hand, feedback on the structure could be collected just through observation of each participant. Many did not like the idea of a large table to fill in as it was ‘time consuming’. This is where the bulk of data was required and therefore was a key feature to be changed.

The second survey attempt used a more interactive approach. Rather than using a typical table structure where details of expenditure are inserted, the questionnaire had a picture of a world map and arrows were used to point to where expenditure was made (see annex 3). Using a picture of the world map is thought to help engage participants to have more of an interest in

the survey as it is more interactive and appealing to the eye. Rather than participants writing everything down, they were able to draw an arrow from the corresponding expenditure to the point on the map where the expenditure was made. When it came to measuring expenditure within Zimbabwe, a second map of the country was used as this makes pin-pointing certain areas easier when determining expenditure patterns (e.g accommodation in Harare, Meals in Bulawayo and accommodation in Hwange).

A small sample scenario test was done using a fictional holiday itinerary and 8 participants to determine if this type of data collection would receive better feedback and how long it would take to fill in the questionnaire. The 8 selected participants were all students from Stellenbosch University and each given a different itinerary which consisted of a trip to Hwange National Park for four nights and included 3 game drives. Each itinerary varied when it came to group size, household income, accommodation type (and expense), expenditure patterns and place of origin. Each student participant was given 5 minutes to go through their itinerary and then asked to complete the survey as if they were the fictional visitor to the park. The students were timed and feedback was given in the event they did not understand certain questions to determine how long the questionnaire would take and where confusion was occurring. After completion, the participants were shown a copy of the original questionnaire and asked which one they felt was easier to fill in. The average time taken to complete the survey was 8 minutes which should be a fairly long amount of time for a two page document. However, the result was unanimous with all the participants claiming they would prefer to fill in the picture of the maps over a standard table. More than half of the participants noted that better explanations above the maps as to how they should be filled in as some initially found the idea confusing.

### **3.8 Conclusion**

Developing research methods is a complicated and time consuming process and researchers should allocate both time and resources to it as it ultimately determines the final outcomes of a paper. Working with some sort of structured strategy is key when it comes to ensuring that research methods are developed with a specific outcome in mind. A general strategy should involve a screening procedure of previous papers, analysis of the methods of the selected papers and careful incorporation of the relevant methods and tools into the developed research methods.

Another strategy to be used when developing research methods is considering your potential audience and how they would respond to different types of methods. When using this paper as an example, visitors are on holiday and therefore wanting to unwind and relax, not fill out complicated and through provoking surveys. Therefore a simple structure with easy to answer question or the use of maps and lines seems to be a better approach.

Catering for unanswered surveys or refusal of interviews needs to be incorporated into the research design. This mechanism, although not used in this paper, will ensure that sample sizes are sufficient and that expectations of quantities have a better chance of being met. This can be done through a more than one field visit, building relations with people on the ground to assist or having a second sample area that is easily accessible.

## Chapter 4

### RESULTS

#### 4.1 Results from Lodge Interviews

Table 4.1 below shows all the data gathered from the various lodges which were agreed to providing the required information for this study. As shown in the table, each lodge had large variations within their capacity, staff, income and costs.

**Table 4.1: Primary Lodge Data**

	<b>Lodge 1</b>	<b>Lodge 2</b>	<b>Lodge 3</b>	<b>Lodge 4</b>	<b>Lodge 5</b>
<b>Estimated Annual Income USD</b>	900000	650000	150000	700000	Varies (NGO funding)
<b>Estimated Running Costs USD</b>	250000	60000	80000	220000	300000
<b>Estimated Profit (excluding tax) USD</b>	650000	590000	70000	480000	Non-Profit
<b>Highest Running Cost</b>	Labour Maintenance	Transport Food	Labour	Labour	Labour
<b>Accommodation Type</b>	Hotel	Full-board private rooms Campsite	Full-board private rooms Campsite	Full-board private rooms	Self-catering rooms Full-board private rooms Campsite
<b>Goods Locally Sourced</b>	All consumables and foodstuffs	All consumables and foodstuffs Linen Furniture	All consumables and foodstuffs	All consumables and foodstuffs	Foodstuffs Maintenance equipment

<b>Goods imported</b>	Ammonites (Soaps, Linen)	Vehicles	None	Furniture Kitchen Equipment	Tenting equipment
<b>Number of Staff</b>	45	17	11	12	61
<b>Community Empowerment</b>	High Season staff are sourced and trained from the local community	Staff earn extra income through sale of local crafts to visitors	Commission based crafts shop for staff members	Member of African Bush Camps	Drilling community boreholes School trips facilities Development of market gardens
<b>Maximum Capacity</b>	192	34	46	32	40
<b>High Season</b>	April - September	July - November	May - October	May - October	January - April
<b>Extra Income Generating Activity</b>		Game drives Bush walks Painted dog tours Village tours Internet connectivity	Game drives Horseback rides	Horseback rides Game walks Outsourced game drives	Visitors Centre Wildlife rehabilitation centre
<b>Has the lodge been operational for more than 5 years?</b>	Yes	Yes	Yes	Yes	No

From this data, it is clear that the most commonly occupied accommodation type was that of a full board basis despite most of these lodges having camping or self-catering facilities. Discussions with lodge staff highlighted that full board packages were more popular at this time of the year due to a number of factors such as costs (a number of specials were made available) and the season. Although many lodges were reluctant to disclose income and monthly expenditure, their operating costs varied widely between the 5 selected lodges due to the fact that some of them received rural electricity and water rates. A number of the lodges

also have seasonal worker that are brought on for the high season and therefore their labour costs can change monthly/seasonally. However, most lodges that do this ensure that they select staff from local communities as a method of improving community livelihoods.

Two of the questions asked to the lodge management were which goods were sourced locally and which were sourced from abroad. The purpose of this section was to determine where local industry has been supported by the tourism industry and if so which goods are regularly purchased locally. The tourism industry has one of the greatest industry potentials to become an economic multiplier and engage large areas of both the public and private sector. Economic multipliers “measure the impact of extra expenditure introduced into an economy and is concerned with the marginal rather than average changes” (Horwath Tourism and Leisure Consulting, 1981). By understanding the multiplier effect of the tourism industry, it is able to track how it has an effect on large businesses all the way down to small scale market gardeners in the event goods are locally sourced. The results for this section had an expected trend due to the nature of the heavy industry and secondary sectors of the economy being in turmoil and therefore a greater reliance of imports for these types of goods.

Although all lodges interviewed stated that they ‘source all consumable goods locally’, many of them could not tell if their purchased consumable goods had been grown or produced within Zimbabwe. Only three of the lodges could guarantee that their consumable goods were locally grown or produced and they also aimed to buy local produce from community markets in close proximity to them. This needs to be noted as a key point in aiding economic impacts of a country by engaging rural communities in economic activity. Furthermore, small scale subsistence agriculture can have less negative environmental impacts as opposed to commercial agriculture based on greater use of compost and manure as a nutrition aid due to the lack of access to fertilizers. Zimbabwe also has a number of NGO and private sector outreach programmes aimed at educating rural communities on the effectiveness and production methods of compost production which could be aimed at working with lodges and local communities in the Hwange region.

The estimated annual income for the four private lodges is a key characteristic when it comes to looking at economic impacts. Although this is an estimate prediction and can vary depending on economic climate and tourism trends, these four lodges have a combined annual income of USD\$1 770 000. This is the income before tax and other costs which can be seen in Table 4.1.

but is a considerable amount of finance. According to the Zimbabwe Revenue Authority (ZIMRA), tourist facilities are exempt from paying national tax for their first five years of operation. After this they pay up to 25% tax on the total income per annum (Zimbabwean Financial Act 14(2)j).

The tourism industry is seasonal and therefore many of the lodges and tourism facilities within the National Park make a large amount of their annual income in a set period of time. The lodges that were interviewed varied in size, type of accommodation, facilities offered and type of ownership and therefore it seemed necessary to see how the demand for the National Park at certain times of the year could determine when economic activity was the highest and lowest. The results of this can then be analysed against national tourism trends and relationships can be potentially made between the two.

#### **4.2 Visitor Questionnaire Results**

Table 4.2 below includes the compiled results of all the completed surveys and aims to give a readable overview for reference to a discussion of the results in chapter 5. The participant surveys were kept confidential and therefore no distinction was made as to which lodge the data was collected from. This therefore created large differences in total holiday costs, accommodation expenses and length of stay. This resulted in total expenditure for various sections on all the surveys being an average of the total amount.



**Table 4.2 – Results of Tourism Questionnaire**

Number of people in Party		2	4	2	2	2	4	2	2	1	2	2	3	4	2	6	4	3	2
Visitors Place of Origin	National				1	1						1			1				1
	SADC		1	1			1						1			1		1	
What Transport was used	International	1						1	1	1	1			1				1	
	Flights	1		1				1	1	1	1			1	1				1
Is This Your First Visit to HNP	Bus									1									
	Hired Vehicle	1													1				
	Private Vehicle		1	1	1	1	1	1		1	1	1	1		1	1		1	1
Accommodation Type	Other	1							1	1	1	1						1	
	Yes	1	1	1			1	1	1				1			1			
Duration of Stay	No				1	1				1	1	1	1		1		1	1	1
	Campsite																		
Total Length of Holiday	National Parks Accom																		
	Private Accom	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Household Income	>10000USD																		
Expected Activity During Stay	10000-20000					1													
	20000-30000	1																	1
	30000-40000									1		1	1		1		1		
	40000-100000			1	1			1						1		1			
Other Expenditure	<100000		1				1				1								1
	In Hwange	80	320	350	80	100	60	500	180	90		80	120	500	150	400	300	320	50
Willing to pay Larger Amount	Outside Hwange	34					40						40	500				100	
	Flights	1700		750	1000			1200	1300	100	1500		1200	2400				2000	
Total Estimated Holiday Cost	Vehicle Hire	360												500					
	Accommodation	1500		350	300	300		2000	2500	200	1500			2200	300	2000	1000	3000	500
	Food and Entertainment	1000		250	200	150	200	600	1000		500			200	100		350	200	100
Total Estimated Holiday Cost	Safari Equipment							50	500				500					100	
	Other		100		100					50		300		200		500			150
Total Estimated Holiday Cost	Yes	1	1	1	1	1	1			1			1		1	1	1		
	No							1	1		1	1		1					1
Total Estimated Holiday Cost		6000	1500	2000	2000	700	1500	4000	15000	2000	6000	1000	2400	7500	600	3000	4000	3800	800

Participants were asked to fill in financial expenditure estimates which included flights, transport, accommodation, food and entertainment and previously purchased goods for the purpose of the holiday. The purpose of this was to estimate the amounts spent by each participant group on specific items which will give an estimate on where the highest and lowest expenditure levels are. By understanding which areas are receiving the largest amount of income within the tourism industry, estimates can be made on their economic impacts to the country further analysing that industry as a whole.

Short summaries have produced on the various results from the tables to aid discussion and put together evidence for some of the conclusions in the following chapter. Using summaries to show results makes understanding the data easier for readers who are not well acquainted with reading numeric, high volume tables. Also by just providing summaries, large portions of unused data can be filtered out and only useful data will be emphasised.

### **4.3 Visitor Questionnaire Results - Questionnaire 2**

This survey was not conducted on a face to face basis as Questionnaire 1 (see annex 2) was, but sent electronically to selected tour operators and lodge managers within the park with a memo and an example of a completed survey. This was done due to the time and financial constraints of conducting primary research and therefore the most viable option. The data quality risks involved with this are high as there is no obligation of the persons being used to ensure the questionnaires are filled in correctly or even at all. It is then not easy ensuring that each survey is both scanned and sent electronically or the hard copies are sent back to Harare. However, each tour operator or lodge was only asked to gather data from 10 visitors which is seen to be a manageable number for them to complete and send back.

As was noted in through the analysis of Jones et al. (2009) is a risk involved with not undertaking questionnaires on a face to face basis with the participants. This proved correct when it came to the second questionnaire as only one of the contacted lodge managers followed through and sent back a fully completed questionnaire on time. This is unfortunate as this style of questionnaire would have potentially been able to produce some high quality results which would better explain the spending patterns of tourists. The data from this would have also given way to the use of various economic analysis models due to the specific questions being asked.

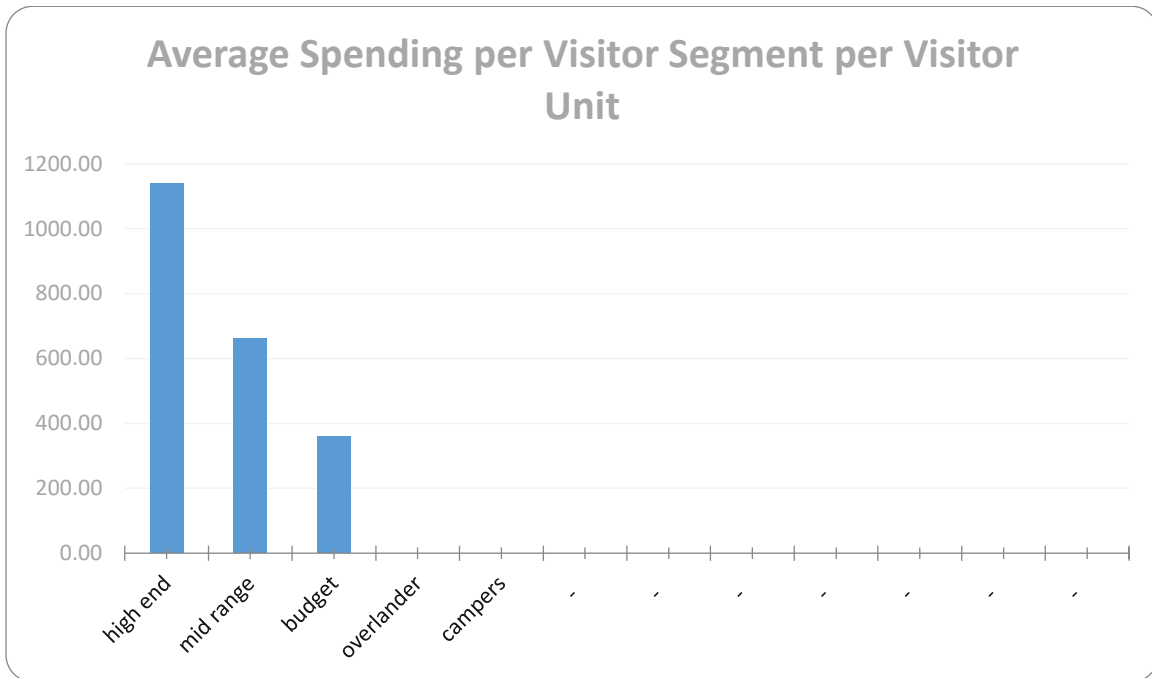
However, this goes towards building knowledge on primary data capture methodologies and will be highlighted further in the final chapter of this paper.

#### **4.4 Combining Collected Data with the use of an Economic Assessment Tool**

Using a data analysis tool based on the work of Souza, Chidakel, Chang and Child (2016), it is possible to further estimate the economic impact of Hwange National Park based on the data collected through the questionnaires in the study area. This tool was initially developed for the purpose of estimating economic impacts as a way to inform stakeholders of the value of protected areas. The tool requires inputs of direct expenditure data from tourists which is then calculated in line with economic multipliers to estimate the economic impact. The tool has uses generic economic multipliers based on those of Stynes (1999) in order to make calculation simple without undertaking in depth economic research to generate area specific economic multipliers.

In this tool there are 4 sets of multipliers to choose from: small rural with populations of less than 30 000, larger rural with populations up to 500 000, small metro with pop less than 1m, and large metro or state for pops of more than 1 000 000). However, the multipliers had to be adjusted for this method to be accurate in a LEDC compared to that of the US. What was found in comparing primary data analysis with the output of the spreadsheet model is that Stynes multipliers for small rural areas underestimated the number of total jobs by about 35%, was reasonably accurate for added value, but overestimated the amount of income by 200-300%. This is obviously because labour is cheaper in developing regions than in the US, relative to other inputs.

The results produced by the tool maybe somewhat exaggerated due to the smaller and selective data samples collected as participant sample mostly fell into the “High End” category due to the season when the data was collected. However, it was still able to generate some assumptive results which can give an idea of economic impacts expected that could be produced by the park and gives us, the readers, an understanding of how an in depth and more detailed study could produce effective results.



**Figure 4.2: Average spending per visitor segment per visitor unit**

Figure 4.2 presents the generated visitor spending percentages based on the cost segment of the holiday packages. As already noted, all visitors recorded in the park were on “all inclusive” package deals with all but the national parks campsite being empty from campers and overlanders.

**Table 4.4: Direct and total economic impacts of visitor spending**

Economic measure	DIRECT EFFECTS \$ 000's	Multiplier	TOTAL EFFECTS \$ 000's
Output/Captured Sales	\$ 43	1.30	\$ 56
Personal Income	\$ 15	1.33	\$ 20
Value Added	\$ 22	1.36	\$ 30
Jobs	1	1.17	2
Total Visitor Spending (\$ 000's)		43	
Capture rate		99.7%	
Effective spending multiplier		1.30	

Table 4.4 indicates the multipliers used for assessing expenditure and the economic impacts generated thereafter. As can be seen, the low quantity of data collected has resulted in low levels of economic impacts despite the multipliers but it does show the potential a positive economic impact to be created should tourism be seen as an economic engine and therefore receive adequate investment in. Job creation is low but this again is due to the low levels of data being collected. Should this study be conducted further and on a larger scale, it can be assumed that Hwange National Park will, in fact, serve as an effective economic generator for both the region (though job creation and potential infrastructural investment) as well as the country as a whole.

#### **4.5 Conclusion**

As it is the key objective of the study to develop a toolkit for future research within this field, it is necessary to highlight the various results and shortfalls of this research methodology. Screening papers for desktop research was the first steps used to build momentum for this rest of the research process. Once papers are screened and selected, their research methods were analysed, compared and noted. The second desktop research determined a tourism baseline for the proposed study area. This was done through analysis of statistics on previous years tourism volumes for all Zimbabwe's National Parks (Table 1.1). This ensured that once a park had been selected as a study area based on the fact that it has relatively high tourist volumes, the gathered results can be used in conjunction with historic trends to make theoretical predictions and estimations.

Undertaking primary research is not an easy task both and especially on a first time attempt. However, with limited time, resources and capacity, results were collected from both lodges as well as visitors to the park. Although better planning and survey design could have ensured that the results were more specific and more effectively gathered, some good feedback was collected which will be used to make assumptions in the next chapter? However, acknowledgement of errors and gaps in the questionnaire were highlighted soon after data collection was undertaken and therefore the second questionnaire was constructed, tried and sent out (electronically) to selected lodges. However, when there is not physical interaction with tourists, completed results will be less likely to be received due to an increased effort requirement by tour operators or lodge managers assisting the research. This was proven with no completed surveys being sent back for analysis.

The use of a toolkit provided useful feedback as to how to incorporate data to produce assumptive outputs and ensure there is uniformity when calculating these results. However, this tool was only received at a much later date to the data collection and therefore many improvements could have been noted when primary research methods were being developed to ensure more accurate results. Despite this, it was useful to understand what these changes would entail which will ultimately form part of a future recommendations section in the following chapter.

## CHAPTER 5

### DISCUSSIONS AND CONCLUSIONS

#### 5.1 Introduction

This chapter serves as an analysis of the gathered information from the primary study undertaken in the Hwange National Park and aims to incorporate them into various models and theories to produce tangible outputs. This can then be used to make estimations and slowly start to piece together a toolkit based on the experience of conducting primary data and an analysis of various research mythology theories. With all research, it is a key learning curve to be able to identify constrains that were experienced as this ensures that these can be mitigated in future attempts. Therefore this will also be addressed and incorporated into the recommendation when putting together the toolkit.

Being the final chapter, conclusions and assumptions will be made that aim to address the main aspect of this study, what are the economic impacts of a national park. Although to confidently answer this question a large amount of additional research would need to be done, estimations can be made on the economic actively, multiplier effects, supply chains and livelihood improvement for local communities.

#### 5.2 An Analysis from the Study

From studying the research methodology and results from the previous chapters, there have been two main sections of information that have produced potential results or at least some sort of data to make worthwhile conclusions. Firstly, data from the lodges themselves which consists of their expenditure and their variable characteristics, and secondly the data from the visitors within the national parks which examines their demographics and spending patterns. The data capture and compilation was a fairly long and complicated process but produced a set of results in which some distinctions can be made.

Different designs and research methods must be carefully analysed when considering how data collection is going to be undertaken. There will always be a number of limitations to primary

data collection and therefore the best way to deal with these is to reduce the amount of unnecessary data and prevent inefficiency in the collection methods. This has been proven with the implementation of a completely different design but asking for the same information on the questionnaires in this research. Although this can be affected by a number of reasons, much of the feedback from participants in the first survey noted that the questionnaire looked ‘complicated’ and this therefore lost their attention before even reading it. However, the second survey seems to have responded better due to the use of maps which seems to have sparked interest in participants. The use of an interactive and visually stimulating style seems to produce a better response when gathering data of people who are visiting a national park on holiday. In the fictional surveys, over 75% of the participants noted that the original questionnaire design was too ‘formal and business like’ to be used when asking visitors that were on holiday to complete it. The result was an improved attitude towards completing a more user friendly and interactive questionnaire.

### **5.3 Summaries and Discussions**

Below is a number of summaries and discussions which serve as part of the conclusion to the research of this study. The summaries aim to address various observations from the results that can be seen in the tables (Table 4.1. and 4.2) in the results chapter. The summaries in this chapter are therefore based primarily on observations from collected data for this thesis and not based on secondary research or statistics unless stated.

#### **5.3.1 Lodge Data**

For reference on the statistics of the below summaries, please refer to **Table 4.1** in Chapter 4.

- The total estimated income for the 4 privately owned lodges was \$2.4 million in 2014 without the reduction from tax and operating costs. Assuming that all the lodges have been operating for 5 years or more, and income tax can be estimated at \$600,000. This is according to the Zimbabwe Revenue Authority’s 25% income tax levy for tourism orientated businesses (Zimbabwe Revenue Authority, 2014). The role of government revenue authority is to collect capital through taxes and other mandatory fees and re-invest it into the economy through development and job creation. For the Hwange region, this could include infrastructure upgrading (roads, buildings), marketing (to attract new potential visitors) and the support of various services such as police, healthcare and anti-poaching units.



- However, the running costs of these lodges range between 60000 USD to 300000 USD per annum. Comparisons between running costs can be further determined based on the information about the lodges largest expense. As expected, labour was noted as the highest average operating cost for the lodges. Although this is the highest cost, seasonal employment contracts are being utilised which can double their work force in the high seasons and lower them in the low seasons. What must be noted is that all the participating lodges try to use local labor from the Matabeleland region within Zimbabwe when specific skills are required.
- When asked about the ‘high season’, the answers seem to vary between the lodges. When all the noted months were analysed, it seem the intersecting months were from July to October with each lodge varying a few months before or after that.
- *Maximum capacity* and *higher income* were not seen to be a mutually exclusive variable which was somewhat unexpected. After further analysis, this is based on the capacity of campsite areas vs the capacity of lodge type accommodation. Camping costs ranged between \$10 and \$25 per person per night, a notably smaller number than that of staying in private lodges. However, there was a small but notable correlation between annual costs and accommodation type. Campsites and smaller lodge capacities have lower average costs than those of hotel and high capacity private lodges.
- Imports and local purchases were a key component of this study as it can show the lodges impact on local industry and give an idea on the possible multiplier effects. Unfortunately no numeric data was collected on exact amounts spent by the lodges on various items and therefore economic multipliers could not be developed for use in this study. Interestingly, all the lodges noted that most of their consumable goods such as drinks, condiments, meat and dairy products are all sourced from local supermarkets and fresh vegetables generally come from the small scale farms in the surrounding areas. Goods that were imported from neighboring countries and further abroad included vehicles, kitchen equipment (pots, pans, fridges, and stoves), linen and ammonites such as soaps, moisturisers and insect repellent lotions. Lodges that offered tented camp facilities purchased all their tents and camping equipment from abroad. These are mostly higher value goods which are not manufactured within Zimbabwe due to most of its high value goods (HVG) industry no longer operational. Imports of high value goods, such as vehicles, also have a positive economic impact through duties and

import taxes being gained for government institutions and theoretically being re-invested into the economy.

- When asked if and how the lodges aided the livelihoods of local communities, many of them offer a curios shop which sells arts and crafts made by the staff and local craftsmen. Some lodges offer a commission based incentive whilst others offer total sale incentives to the manufacturer. This offers some form of income to local communities if employment can't be offered by the lodges themselves. Management were not able to officially disclose sales information due to the various official and unofficial set ups between themselves and the craftsman. Although an informal sales set up between the community groups and lodge management, it seems to work for the all parties involved despite the lack of data available on sales turnover. There are a number of corporate social responsibility (CSR) initiatives from the larger lodges aiding community groups through charity organisations and community livelihood projects such as market gardening training and borehole drilling.
- Extra income generating activities for the lodges mostly included game drives, village walks and horseback safaris. Game drives and village walks were very rarely outsourced according to lodge managers and utilised rangers and guides employed by the lodges themselves. One of the lodges outsourced their game drive facilities through a private tour operator as this reduced maintenance fees and extra costs to the lodge. Horse-back safaris are all outsourced through a private operator that caters for certain lodges in a relative proximity to the stables site. This employs 6 individuals who from Harare and Bulawayo, none from the Hwange district.
- Hwange has a large number of private and National Parks managed facilities both on the park boundary and within it. From the 5 lodges interviewed, a total of 146 staff (mostly from the surrounding communal areas) are employed from the surrounding area with the exception of some of the management staff. Zimbabwe has an estimated unemployment rate of 90.0% according to the World Bank Statistics Database between 2010 and 2014 (World Bank, 2015) but has an estimated 95% primary education rate showing that most of the country's population have achieved primary school literacy levels. This emphasises the great need for job creation rather than population education or skills development to meet job requirements and gives rise to the importance of the tourism industry and its role in employing members of the local community.

- It can be noted that most of the goods purchased locally are consumable goods such as fresh vegetables, eggs, milk and meat according to the information from the lodge managers. This comes in as a key role player when estimating economic impact and looking at the supply chain generated from the tourism industry. Agriculture, for example, is one of Zimbabwe's largest economic practices. According to the Zimbabwe National Statistics Agency (ZIMSTAT) "within the economically active population in Zimbabwe, the highest percentage of labor force of 52.3% were own account workers (communal, peri-urban and resettlement farming)", showing that agriculture is still one of the main sectors of employment for the country (Zimbabwe National Statistics Agency, 2014). Due to the land reform notion implemented by the government, most of the country's farmers consist of small scale, but contracted set ups. In many cases, small scale farmers are contracted to large hotels (such as The Victoria Falls Hotel) which they directly supply with fresh produce. This creates a potential market for rural communities around the Hwange National Park as they could be contracted to specific hotel groups and private lodges.

### 5.3.2 First Survey Summary

For reference on the statistics of the below summaries, please refer to **Table 4.2** in Chapter 4.

- Although the results of the first survey had proved to not have been as informative as expected, the results can still be summarised to consider some of the tourist spending patterns. Firstly, let's consider some of the dynamics of the tourists. The largest amount of the visitors to the area was those residing outside of the SADC region. Therefore their visitor's fees to the park are the highest official rate of \$20 per day for international visitors. Of the visitor's interviewed, the average group size was 2.7 people per group with the largest group of 6 people and the smallest group of 1 person. When asked why individuals were travelling alone, many noted it was for a stopover, business trip, and research trip or for an annual charity run which is sponsored by an overseas legal advisory firm during that time of the year. Therefore their costs were much lower than those on a recreational holiday due to shorter stays and minimal planned activities.
- As the largest portion of participants were from outside Zimbabwe, Hwange can be considered to have a greater international demand than a local demand. There are a number of reasons for this but it could be potentially be due to the way the National

Park is marketed. One of the lodges interview noted that their target market is the Old Age Tourists groups (OAT's) whom mostly come from the USA and Canada. On the other hand, maybe the demand for the park is just greater abroad and therefore lodges and government institutions should utilize by targeting their marketing efforts to the international market.

- Of the visitors interviewed, all noted that they were staying in full board accommodation. Although a visual observance noted that there were a number of visitors camping and staying in self catering accommodation within the national parks managed facilities, access to them was denied by the relevant authorities and therefore this data could not be gathered.
- When it came to determining tourist expenditure, a correlation between participant's annual income and overall holiday cost can be observed. When looking at the results table 4.2, it can be noted that the top 20% of the estimated annual income category were responsible for highest expenditure per day for their trip. Although the average cost per night varied greatly between the various lodges selected for this research, it can be concluded that those in the higher income category will be the ones to have a greater expenditure during their stay. The higher annual income participants varied with regards to their expenses once in the park with many of them either not spending extra money on or not disclosing the expenditure of extra activities, entertainment or other expenses. This is potentially due to the package deals or all-inclusive holiday packages as all of these visitors were from outside Zimbabwe.
- As what can be expected, the total length of the holiday greatly contributed to the total tourist expenditure. However, some estimation needs to be made due to the fact that the total holiday expenditure included the **total** amount of days of the participant's holiday. Many of them (normally those whose holidays was longer than 12 days) only spent a short period of time in Hwange. Therefore the length of the holiday could not linked to expenditure without taking into account the amount of time spent in Hwange and as to whether Hwange was the visitors primary holiday destination. To aid this theory, the visitors with the longest holidays were used as a sample for an estimation of daily costs against overall length of stay. By referring to the table below (Table 5.1) we see that the final amounts do not reflect length of holiday and highest expenditure. Although these visitors all stated that Hwange was either their primary destination or one of the key destinations for their trip, many took this opportunity to travel throughout

Zimbabwe and the region and therefore increased the overall cost of their trips. Within this sample, Hwange is then seen to be a key player for other tourism based economic activity of other regions within Zimbabwe.

**Table 5.1: Estimated cost per day for Hwange Tourism**

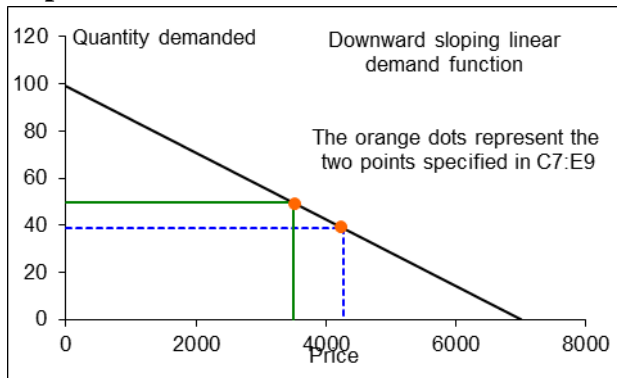
Number in Group	2	2	1
Total Holiday Cost	6000	15000	2500
Total Days Holiday	30	30	13
Total Days In Hwange	1	4	3
Adjusted cost per person per day (\$)	100	250	192
Average Cost per day (\$)	\$180.70		

- When asked what their expenditure breakdown consisted of, the participants answered that the largest amount was on accommodation followed by flights and then food and entertainment. One of the main reasons that accommodation was the highest cost of the trip is that all the participants in this survey were booked in full board accommodation. A visual observation noted very few people in campsites or self-catering accommodation other than those at the national parks managed site. Interestingly enough, very few visitors hired a vehicle despite 79% of the participants for the survey being from outside Zimbabwe. Many utilised the lodge facilities for airport pickups and drop offs from Victoria Falls International Airport, brought their own vehicles if they resided in neighboring countries or borrowed a private vehicle from friends and family living within Zimbabwe. The average length of a holiday for visitors staying within Hwange was 5 days. After a number of consultations with vehicle rental agencies, an average rental for this time frame was above \$500 and therefore would be an exceptionally larger cost to visitors. Some of the vehicle rental agencies even went as

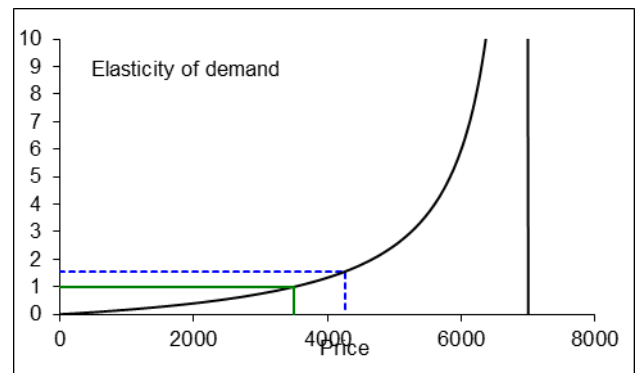
far to note that very few rentals are taken up by visitors to Zimbabwe who want to visit its various National Parks or travel from place to place.

- Of all the participants in this survey, 63% responded that they would be willing to return to Hwange again for the same experience even if the price of the overall trip was increased. Therefore an elasticity of demand curve can be seen below which shows the potential benefits and loss to the stakeholders within Hwange National Park if the costs were increased. The graphs below show the assumed change in demand of Hwange as a consumer good with the increase in 20% of total holiday costs (graph 5A). The second graph (graph 5B) shows the predicted elasticity curve for Hwange to consumers based on data collected from this survey

**Graph 5A – Consumer Demand**



**Graph 5B – Elasticity Curve**



- Using the data from the questionnaire, we can see the decrease in quantity of visitors to the National Park with the potential increase of 20% to the average holiday cost. The blue perforated line indicates the 20% cost increase. Graph A shows a demand curve which shows the drop of about 21% in visitors when the price is increased by 20%. Theoretically, if the price of a visit to Hwange was increased by 100%, there would be no visitors to the park as the demand would have dropped to zero.
- **Graph B** shows an elasticity of 1.02. This, according to elasticity of demand theory, makes Hwange National Park fall into an elastic category. An elastic product (in this case Hwange) is one which is classified as ‘sensitive to a change in price’. There are a number of potential reasons for this including substitutions for a similar alternative or the fact that trips to Hwange are relatively expensive in relation to other alternatives within the Southern African region. In relation to this, it could be worthwhile undertaking research to better understand the demand sensitivity to price changes in niche market tourism areas.

- Although most of the participants of this survey stayed in lodges that offer package deals and full board accommodation, a number of them were still able to provide data on their additional expected activities during their stay. 34% of the participants noted that they spent money outside Hwange (but in Zimbabwe) as part of their holiday which ranged from amounts as small as \$34 to just over \$500 depending on the length of the holiday. Those spending smaller amounts usually came from National Parks entry fees to the Victoria Falls due to its close proximity to Hwange in the event of a day trip to this site. The visitors who filled in their data for their expenditure inside the park ranged from about \$80 up to \$600, excluding the cost of their accommodation (which was mostly full board and therefore also including meals). This means that a number of visitors to the park are spending large amounts of money on game drives, guided walks, local arts and crafts, parks fees and other unspecified activities or goods. This is a notable contribution of the national park to generating economic activity for tour operators and local entrepreneurial stakeholders and a bigger survey would surely show even larger expenditure due to this one being limited to only 5 lodges. Although a number of the participants chose not to answer this section, those that did answer showed that their costs for expenses inside Hwange account for 6.1% of the total value of their holiday. There was no correlation made between length of stay and total amounts spent outside Hwange other than those who only spent time in Hwange would obviously have a \$0 amount of expenditure outside the park.
- The current national parks fees for Hwange National Park are as follows (see table 5.2)

**Table 5.2: Visitors fees for Hwange National Park**

	<b>Local rate \$ (USD)</b>	<b>SADC country rate \$ (USD)</b>	<b>International Rate \$ (USD)</b>
Daily Individual Rate	5	15	20
Daily Vehicle rate	3	5	10

When using these entry fees rates it is possible to estimate the income generated through national parks from this survey. A total of \$720 a day was generated by from park entry fees in the event that all visitors actually entered the park as many tour operators offer their services along the park boundaries or the visitors just simply decided to undertake a different activity such as a day trip to Victoria Falls or village tours in the nearby communities. Table 5.2 is based on estimates of participants in this survey in which a daily entrance fee was paid to access Hwange National Park. The ‘number of nights’ is the cumulative number of nights spent by separate groups of people for their trip. This information was collected through the questionnaire given to the visitors.

**Table 5.3: Estimated Parks Fees from Participating Visitors**

	<b>Local Visitors</b>	<b>SADC Visitors</b>	<b>International Visitors</b>
Number of visitors	10	22	17
Rate paid (\$)	5	15	20
Number of nights	13	24	17
Total Amount on fees (\$)	650	7920	5780

An estimated amount of \$14 350 was generated through National Parks entry fees. Recently, a telephone call was made to the ZIMPARKS head offices and they were asked what the total income through fees is spent on. The information assistant noted that income generated through fees collections is used for staff wages, maintenance of the park and anti-poaching efforts. This survey was done on a small scale and over a short timeframe but the total estimated amount generated through National Parks fees is noticeably substantial. Unfortunately the data from the National Parks and Wildlife Management Authority for visitor entry per ‘fees group’



(Local, SADC and International) to the park seems to be unavailable to the general public. If it were available, it would be possible to estimate the total income through fees per year and give a good indication as to how much the park costs as compared to how much it actually generates.

#### **5.4 Limitations**

Another issue relating to the limitation of time frames was that this particular study was conducted over a short period of 14 days. This period was unfortunately relatively quiet within the park and therefore there was little influx of new tourists over this period. It therefore put a limit on the amount of questionnaires which were handed out as many people has either filled in the questionnaire or refused it. Postgraduate academic studies are normally conducted over a short term unless it is at a PhD level and therefore better results could be achieved over a longer time frame. To relate this limitation more to this particular study, additional time would allow data collection to be done over the space of a year which could include data over both high and low season. By capturing these fluctuations in tourism, it would be possible to look at economic impacts of a park based on time (over the period of 1 year) as a variable.

The second limitation related to this research was distance between lodges and the access to these lodges. Hwange National Park is an 8 hour drive from Zimbabwe's capital city and therefore access to the park itself is not easy despite the fact that this research was undertaken by someone living within the country. Once there, many of the lodges are not too far in distance, but hazardous and untamed roads result in moving between them a lengthy process. Some of the selected lodges around an hour's drive each way and therefore regular visits to them were not possible when collecting new data from new visitors through face to face surveys. This limitation can possibly be solved through increasing the number of researchers undertaking the data collection and handing out questionnaires or alternatively extending the length of time gathering data in the field.

Thirdly, and one of the most crucial limitations, was lack of willingness of various lodges, visitors and authorities to help participate in this research. Although there were a number of various reasons given by these groups as to why they are not willing to participate, some of the most notable ones were skepticism to answering financial questions and an apparent 'lack of approval' to request this kind of information. Despite receiving ethical clearance and supplying proof of academic purpose of this research, ZIMPARKS requested further national level. Some

visitors stated that they were too tired or not willing to fill in certain aspects of the survey which therefore rendered them unused. When it comes to trying to resolve the problems of dealing with national authorities, there is very little that can be done on the ground in the national park and therefore prior research needed to be done to determine how to best gather data through this channel.

The unexpected financial requirement needed for effective data collection is also a limitation that must be noted in this thesis. Due to the remote location, the expense of accommodation and a requirement of an off road type vehicle, this requires a fair amount of finance is needed to undertake even short term research. Although some lodges will reduce their per night rate for researchers, any long term stay does add up and can require a fair amount of capital. One potential way of countering this is sending electronic copies via email which can be printed and given out to visitors by various lodges. However, as this study has shown, there is an increased probability of the surveys not being returned, filled in correctly or being misplaced by collectors within various lodges. Although this was a referred to in one of the papers reviewed in chapter 2, it was a last resort alternative due to the inability to travel the Hwange in person a second time round. Although the literature on this kind of methodology somewhat explains that the likelihood of feedback drops, only 3 questionnaires were returned from the lodge focal points and therefore unfortunately resulted in this survey being unused.

It comes without question that experience is crucial when conducting primary research for specific data outputs and therefore noted as one of the major limitation within this specific thesis. By developing knowledge of this activity a researcher is able to reduce errors in data collection, ensure the collection of relevant data for specific outputs and do this efficiently and effectively. Unfortunately after data compilation was done for this paper, it was realised that there were large areas of information missing which would have been useful for undertaking a deeper analysis. The collected information was very broad and unspecific and although certain trends and relationships between spending patterns can be determined, doing this research for a second time would produce much more accurate and worthwhile results. Although it can be argued that this can be more of a lack of knowledge than a physical limitation, there is little way around this issue without full time guidance on site or having the chance to undertake data collection for a second or third time.

As previously noted, a toolkit was acquired towards the end of the drafting of this paper which was based on a similar study undertaken in a protected area of another developing country. The toolkit (Chidkel, 2013) is based on measuring economic impacts of tourism within natural areas through the use of Stynes (2008) multipliers. Due to the difference in time between acquiring this tool and collecting the data for the primary research, many gaps were found which could have been filled to produce more comprehensive results which the tool can be used to generate. This can come down to better and more in depth preparation on research methods and available literature on the subject on question to ensure that as much relevant information about tools, methods and literature can be uncovered.

## **5.5 Conclusions**

From this analysis, it is clear that the key to undertaking economics based research is to understand how to best gather the relevant data and then what to do with it. This was the main cause for selecting the topic for this thesis and for structuring it the way it has been laid out. Research methods have been a key component in nearly every paper analysed as a knowledge resource for this one and their various types of methodologies vary vastly depending on topic of research, researcher, purpose and resources available (time, capital and people involved). This study analysed the research methods of 7 different authors on 7 different papers all with some sort of environmental economic focus, whether it be multiplier effects or tourism statistics. Each author shed light on how and why various methods were used and what was then done with the data to generate results and trends relevant to the purpose of the research. Understanding these elements on a 'how' and 'why' basis are key to ensuring environmentally economic orientated research being undertaken is done so with the end result in mind and that this result is being achieved effectively and efficiently. Conducting primary research is not an easy task and therefore reducing inefficiencies in its processes and inaccuracies in the data collection will ensure that the whole process runs smoothly.

As noted in the first chapter of this study, Zimbabwe is currently in an 'economic slump' period following its rapid economic decline which started in the early 2000's. During this period very little research of this nature was conducted as research institutions were struggling to stay afloat, let alone pioneer new work in the environmental sector. Although small amounts of environmental economic research has again started to trickle back through academia and research institutions, there still needs to be more done to highlight the positive effects the

natural environment can have to a developing economy. It is clear through the analysis of the various literature used in this thesis that natural environments hold various types of value to an economy and can generate income through scientific research, tourism, recreation and reduce unemployment. The key issue is to understand the cost benefit analysis of conservation and protection efforts against other activities such as agriculture, resource exploitation or infrastructural development in these areas. Many developing countries need to have resources like their national parks marketed, preserved and maintained in order for them to achieve their full benefit.

One of the main reasons of conducting this study was to understand the various methods used by researchers to collect and analyses data in order to predict results that will enable us to better understand the economic impacts associated with national parks. Therefore, rather than developing a step by step guide advising on exactly what needs to be done when undertaking economic research, a checklist of minimising mistakes and inefficiencies would be more useful than developing a full set of data collection and its analysis methodologies as not all researches will undertake their methods in the same way.

Wood et al (2003) developed a tool kit that (see Chapter 2.1) which he believes to be the most effective way of gaining economic data for research purposes within protected areas. However, after conducting primary research within a similar situation to potentially achieve the same results, the toolkit used by Wood et al (2003) was not as effective as it could have been. In fact, very few of the papers considered in Chapter 2 highlighted the important aspect of what this research really needed, a second survey. There are a number of points noted by all the authors that were used in this papers research methodology such as the categorisation processes outlines by Cui et al. (2011), the use of financial data to measure socio-economic impacts by Rinzin et al (2008), and the use of face to face and direct response survey methods as highlighted by Jones et al (2009). These key methods ensured that these papers data was collected as efficiently as possible and then analysed and used to produce worthwhile results. Unfortunately, the first survey for the paper had a number of limitations (see section 4.2) and although a second survey was developed, implementing time and distance from the case study area resulted in minimal feedback. Below in **table 5.4** is the toolkit based from personal experience which has incorporated some of the useful methods reviewed in Chapter 2.

**Table 5.4: Toolkit to undertaking primary research for environmental economics**

<p><b>STEP 1</b> Determine what the research aims to achieve – what are the expected outcomes?</p>	<p>Are we aiming for demographic information, cost benefit analysis information, quantitative or qualitative outputs?</p>
<p><b>STEP 2</b> Determine the research area, participants and stakeholders.</p>	<p>Identifying the exact research area and its participants who can include anyone from hotel managers, local or international visitors, national parks officers and guides. There is a need to develop dialogue with stakeholders in their area as they will assist is data capture.</p>
<p><b>STEP 3</b> Undertake desktop research.</p>	<p>Ensure that you have some evidence which can show a potential outcome based on the relevant topic to show that the expected final outcome is, in fact, viable. Also what methods have been used in to past to collect this data</p>
<p><b>STEP 4</b> Determine your time frame.</p>	<p>Data collection can take a long period of time, handing out questionnaires or conducting interviews is normally the shortest component. Time frames need to be determined for planning, undertaking and analysing the research</p>
<p><b>STEP 5</b> Develop a pre-survey and make note of its issues.</p>	<p>A pre-survey can be done using fictional scenarios and a test group of participants. This will highlight errors in the survey in both survey design and outputs collected. Scenario groups can provide important feedback to prevent running into future problems.</p>

<p><b>STEP 6</b></p> <p>Redesign surveys based on outputs from STEP 5 to reduce any inefficiencies and problems with initial designs.</p>	<p>This can consist of wording issues, time constraints, complicated questions, unavailable data on topics or unwillingness of participants to answer certain questions.</p>
<p><b>STEP 7</b></p> <p>Analyse data while you go.</p>	<p>By analysing data as you conduct primary research, you can start to highlight where downfalls, mistakes and inaccuracies are occurring. These can then be addressed before collection time is over.</p>
<p><b>STEP 8</b></p> <p>Ensure that proposed evaluation methods will cater for data collected.</p>	<p>Various theories, formulas and methods to generate results need to be in line with the collected data. If not, outcomes and predictions can become difficult to produce.</p>

As can be seen in the primary research of Hwange Nation Park, the area potentially attracts large numbers of tourists who are willing to pay large amounts of money to experience the regions natural wilderness and wildlife. The national tourism statistics already show that this national park can be considered an economic engine as it is generating foreign income into the country as well as creating employment for a large amount of the local population within the area. The country has an official unemployment rate of nearly 90% (in the formal economic sector) which includes all those not engaged in full time, registered and tax-paying business. However, if we consider the variety and value of the countries wildlife, demand for either photographic or hunting safaris and create large amounts of jobs in rural and remote areas as well as market itself to international clientele whom have a key interest in ecotourism.

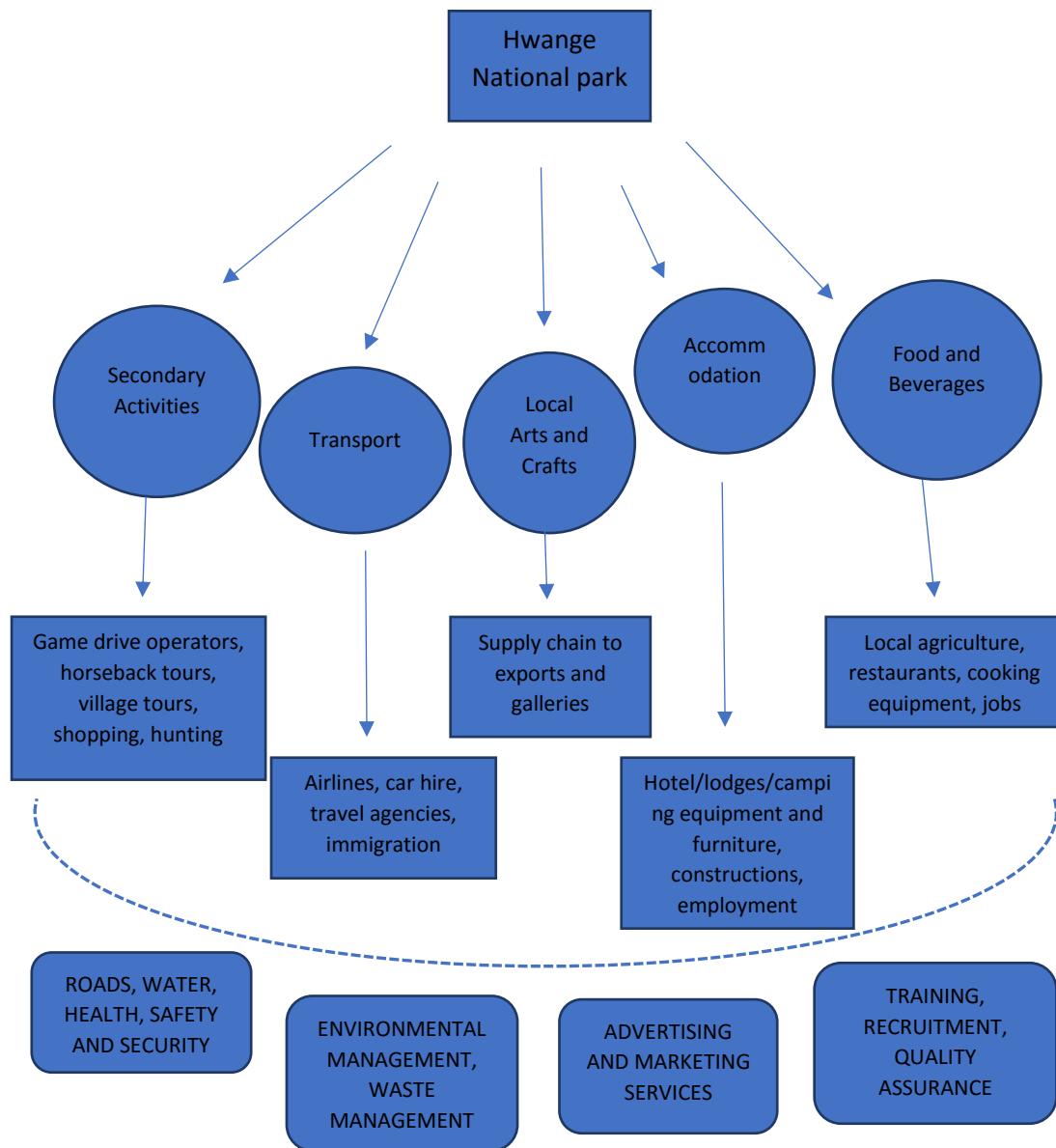
Tax, foreign currency income, local spending, increased GDP and employment of nationals in the hospitality sector are just a few of the positive economic benefits derived from the tourism industry. Understanding consumer spending can be a key feature for national regulatory bodies such as the Ministry of Tourism as it can pinpoint areas which will best benefit from government budget allowances and which sectors could do with assistance to boost their economic standing. Zimbabwe is currently one of the poorest countries in the world with little financial foreign investment coming through the industrial and business sectors due the unstable economic and political climate. With a country so rich in natural tourism resources

and an abundance of wildlife, there is large potential for the tourism industry to become a driving force behind economic development and capital injections into government departments. This revelation is coming to light with the introduction a new ‘uni-visa’ which is due for release to enable tourists to travel between Zimbabwe and Zambia whilst holding a single visa (Mallison, 2014). It is the first trial in releasing a uni-visa to enable travel within the whole of the SADC region and therefore a positive move to greatly increase tourism within Zimbabwe.

## **5.6 Supply Chains**

Tourism supply chains are a key feature in identifying all stakeholders and beneficiaries in the tourism industry of a specific region. “The supply chain comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers. It includes all suppliers of goods and services whether or not they are directly contracted by tour operators or by their agents (including ground handlers) or suppliers (including accommodation providers)” (Taper & Font, 2003). Supply chains can be developed to show how a resource, in this case Hwange National Park, can create further opportunities for other industries or individuals and therefore benefit from its prosperity.

Fig 5.1 shows the potential supply chain for the national park. The first level of the supply chain shows the Hwange National Park, this is followed by the various components that ensure tourism in the park is fully functional and meets the requests of its visitors. This level therefore benefits directly from the economic impacts of Hwange National Park. The next level is the various key components which enable the core tourism function to work. An obvious goal for national governments is to make this level consist of local producers and entrepreneurs to boost economic activity within the country. The final level of the supply chain consists of the national governments, service providers and other members of the private sector who benefit from the economic impacts indirectly. This income into government departments through taxes, advertising companies, travel agents, environmental services and so on.



**Fig 5.1:– Theoretical Supply Chain for Hwange National Park**

From the supply chain above, we can see the extent of some of the potential impacts that a functioning national park can have to sectors of the economy. The trickle down effects can reach a large number of those engaged in economic sector of the population and further more create jobs, help increase GDP and also improve standards of living through service delivery and foreign investment.



## 5.7 Final Notes

National parks hold indirect values such as existence value and non-use values. If we consider the results from the survey, 44% of the participants noted that this was their first visit to Hwange National Park. By ensuring that there are first time visitors to a park, it can be proved that existence value of this resource is relatively strong as individuals who are not sure what to expect still take the initiative to admire its existence and visit it and possibly returning to it in the future. Ensuring that non-use value, bequest value and existence value are all kept in good stead though sufficient marketing, media and management will ensure that the increase of potential visitors to the park will increase as the knowledge of it will reach and appeal to a larger potential market. Although this thesis did not necessarily aim to measure indirect values of a natural resource, it highlights that direct values are only one of the components of its total economic value and therefore further studies can be done to try gain more accurate results.

This study has highlighted a number of mistakes when it comes to collecting data for the purpose of economic impacts through its primary research. Further research on economic impacts of national parks (focusing on Hwange National Park) would enable comprehensive data to be gathered which could be used in various models and measure multipliers, indirect and induced impacts, cost benefit analysis and a number of other economic impact studies. However, through this trial and error stage, knowledge about data collection, importance of national parks, and estimated economic examples have been highlighted and various literature has been reviewed to give some much needed clarity on the concepts on economic impacts of national parks.

Overall, the potential for national parks to function as economic engines within a developing country is most definitely there but for countries like Zimbabwe, research needs to be done to develop baselines in order for us to see their overall impacts over a time period. This will have the potential to convince investors, governments, and other stakeholders to take greater interests in developing the national parks sectors of developing regions. A statement by the Center for Responsible Travel says that “Between 1996 and 2006, international tourism in developing countries expanded by 6% as a whole, by 9% for Least Developed Countries, and 8% for other low and lower-middle income economies” (Center for Responsible Travel, 2005). In countries that have very little other than their natural resources, it should become a necessary obligation for the utilisation of these resources by the relevant government institution in order to attract foreign visitors and investment.

Engagement with local communities (as discussed in chapter 2 section 2.3) would have allowed data to be gathered on how tourism is directly affecting the downstream stakeholder groups. This can include the unregulated and accounted for sales of local arts and crafts, increase in various business run by the local community such as bottle stores or commuter omnibus operators. The reason for this not being undertaken was due to clear oversight of the potential results that could be derived from it and then the time and capital required traveling back to the region for a second time.

Building up a resource data base that consists of economic assessments and research in relation to national parks should be a key feature for every country. Reasons for this include; national parks potentially have high economic value that is not being translated into national budgets to increase financial support. If this required support was given, the potential for these to become economic engines could be a key strategy for developing countries in breaking poverty cycles as investments into national parks would create employment, generate foreign income, boost the economic activity of the supply chain and aid sustainable development.

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**ANNEXURE 1: List of rejected academic papers**

<b>Title</b>	<b>Author</b>	<b>Year</b>
Economies of protected areas	Dixon J & Sherman P	1991
Cattle, Wildlife, Both or Neither? Animal Production Systems	Jansen D	1989
Maximising the Economy of the Serengeti National Park Through Conservation	Howerton H & Sinclair A	2007
Tourism Highlights	UNWTO	2013
Private Supply of Protected Land in Southern Africa: A review of Markets and Approaches	Krug W	2001
The Function and structure of Protected area authorities	Reed T	1999
The Economic Foundations of Public Parks	Power T	2002
Financial Sustainability of Protected Areas in Latin America and the Caribbean	Bovarnick, Fernandez-Baca, Galindo & Negret	2010
Management and Effectiveness of South Africa's Protected Areas	Department of Environmental Affairs	2010
Game conservation in Africa	Goma, Laikipia, Selinda and Tswalu	2010
The Nature of Benefits and the Benefits of Nature: Why Wildlife Conservation Has Not Economically Benefitted Communities in Africa	Emerton L	1999
Money for Nothing? A Call for Empirical Evaluation of Biodiversity Conservation Investments	Ferraro & Pattanyak	2006

Direct Payments to Conserve Biodiversity	Kiss & Ferraro	2002
Economic Multipliers: How Communities Can Use Them for Planning	Miller W	NA
Poverty reduction and biodiversity conservation: rebuilding the bridges	Roe & Elliot	2004
The USA national parks in international perspective	Shelhaus J	2002
Natural Resources: Myths and environmental management	Stroup & Baden	NA



**ANNEXURE 2: Interview Questions for Lodge Representatives**

What are the lodges estimated running costs?	
What are the lodges HIGHEST running costs?	
What is the estimated average annual income for the lodge?	
What is the lodge's maximum occupancy capacity?	
When is the lodge's expected HIGH season?	
How many staff does the lodge permanently employ?	
How many staff does the lodge seasonally employ?	
Does the lodge have any active community development initiatives?	
Which goods does the lodge purchase locally? *all goods ranging from foodstuffs to furniture	
Which goods does the lodge purchase from abroad?	
What extra income generating activities does the lodge offer to its guests?	
Has the lodge been operational for more than 5 years?	

**ANNEXURE 3: Tourism Questionnaire**

*Please help us (confidentially) work out the impact of wildlife tourism in Hwange by telling us where you spent your money on this holiday and what it was spent on.*

<b>Number of people in group/party</b>	
<b>Length of stay in Hwnage National Park</b>	
<b>Total Length of Holiday</b>	

**Visitors place of origin**

- 1 - National (residing within Zimbabwe)
- 2 – International (residing within the SADC region)
- 3 – International (residing outside the SADC region e.g USA/Europe)

**If the above question answered 2 or 3, what forms of transport were used to reach the national park?**

- 1 – Flights (national and international)
- 2 – Bus
- 3 – Hired Vehicle
- 4 – Private Vehicle
- 5 – Other

**Is this your first visit to this National Park**

- 1 – Yes
- 2 - No

**Accommodation type**

- 1 – Campsite
- 2 – National Parks Managed Lodges/Hotel/Chalets
- 3 – Private Lodges/Hotel/Chalets

**Household income**

- 1 – Less than \$10000
- 2 - \$10000 - \$20000
- 3 - \$20000 - \$30000
- 4 - \$30000 - \$40000
- 5 - \$40000 - \$100000
- 6 - More than \$100000

**Previous Expenditure Prior to National Park Visit**

	How much did you spend?	Where did you spend this money? Please tick the corresponding boxes.		
		<i>Zimbabwe</i>	<i>SADC County (excluding Zimbabwe)</i>	<i>Non-SADC Country (E.g Europe, Asia, Australia)</i>
<b>Flights</b>				
<b>Vehicle Hire</b>				
<b>Accommodation</b>				
<b>National Parks Fees</b>				
<b>Arts and Crafts</b>				
<b>Game Drives and Activities</b>				
<b>Food and Entertainment</b>				
<b>Equipment for holiday (safari gear, vehicle modification)</b>				
<b>Previously purchased food stuffs within Zimbabwe</b>				
<b>Other</b>				

**Based on your experience, would you be willing to pay a larger amount of money in the event of another visit to the National Park?**

1 – Yes

2 – No

**If willing to disclose, what is the total estimate cost of your holiday?**

.....

**ANNEXURE 4: Tourism Questionnaire 2**

*Please help us to (confidentially) measure the economic value of Hwange National Park by providing information on where and what you spent your money on by filling out this questionnaire. There are three parts to this survey, please read all instructions carefully on each part to part. Thank you in advance for you time and feedback.*

**PART A**

How many people are in your group/party:

.....  
 .....

What is your Total Number of Nights Spent at Hwange:

.....  
 .....

What is the Total Length of Your Holiday (Including Hwange):

.....  
 .....

Please tick the box that best represents your estimated annual household income (in United States Dollars):

Less than 10000(\$) per year	<input type="checkbox"/>	10000-30000(\$)	<input type="checkbox"/>
30000 – 50000(\$)	<input type="checkbox"/>	50000 -70000(\$)	<input type="checkbox"/>
70000 – 90000(\$)	<input type="checkbox"/>	More than 90000(\$)	<input type="checkbox"/>

Is this your first visit to the Hwange national Park?

.....  
 .....

Where is your country of origin?

.....

Based on your experience within the Hwange National Park, would you be willing to revisit if the overall cost of visiting was increased (YES or NO)?

**PART B:** Please fill in you expenses in the table below and draw an arrow to where on the map this expanse was made BEFORE your visit to Zimbabwe. Therefore, if your flights were paid for in London, connect an arrow from the ‘flights’ box to the United Kingdom on the map.

Flights \$	Vehicle Rental	Accommodation Game drives	Accommodation	Equipment	Optional \$	Art and Crafts	Food and Drink	Land
					Parks Fees		Drink	
<b>In and around Hwange</b>								
<b>Outside Hwange</b>								

**PART C:** Please use arrows between the map and the boxes on the table to show how much money you spent DURING your visit to Zimbabwe. Please note the separate boxes for your expenses *inside* and *outside* Hwange.



