

RESEARCH PROJECT
SUPERVISOR: PROFESSOR
VERONICA MAKWINJA

Goitsemanang Julia Tsile
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**The Effects of Climate Change on the Tourism Industry in Botswana: a Case in Chobe
District**

Goitseamang Julia Tsile

**A research study submitted to the European Business Institute in partial fulfillment of the
requirements for the degree of Master of Business Administration Program (MBA).**

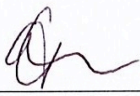
Supervisor: Professor Veronica Makwinja

MARCH 2024

DECLARATION OF SIGNATURES

The work contained in this Thesis was completed by the candidate of the European Business Institute. It is original work except for where due reference is made and neither has been nor will be submitted for the award of any degree to any other tertiary institution. The contributions of the supervisor to all the chapters of this study were in the form of comments, questions and suggestions that helped in organizing the direction of the researcher.

Name of candidate: Goitsemanang Julia Tsile

Signature  Date: 28-02-2024

Name of Supervisor: **Professor Veronica Makwinja**

Signature V. Makwinja Date: 28-02-2024

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ABSTRACT

Climate change and environmental degradation pose existential threats to Botswana's tourism and its competitiveness. The acceleration of desertification caused by climate change is putting pressure on key wildlife habitats, particularly through water scarcity. Despite adaptation efforts, water scarcity is high and climate risks remain pronounced. Tourism in the Chobe district is also overwhelmingly dependent on nature-based and biodiversity-driven activities, making it particularly vulnerable to climactic impacts.

This study follows a mixed approach which entails both qualitative and quantitative methods. Using both facts and figures as well as feelings and observations to produce the most impactful result. This is based upon the assumption that if diverse types of data are collected, then they will provide an understanding of the research problem as a whole. The researcher distributed surveys and interviews both internally to key employees and externally to clients of The Ministry of Environment, Natural Resources Conservation and Tourism, and internally to the Botswana Tourism Organization. To the targeted internal population of 4 respondents, the sample procedure that was used was of judgment or purposive sampling. Researchers may implicitly thus choose a "representative" sample to suit their needs, or specifically approach individuals with certain characteristics. Whereas the targeted external population of 20 people was chosen through Stratified Random Sampling.

Stratified random sampling is performed by dividing a population into groups with similar attributes. A quantitative and qualitative analysis were used in analyzing the data collected, as this is a mixed methods research paper. The findings confirm that internal employees are affected by the shortcomings of administration and government, the information systems mused within the organization are inadequate and the clients are greatly affected by slow allocation and poor customer service.

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Research Title

The Effects of Climate Change on the Tourism Industry in Botswana: a Case in Chobe District

1.0 Introduction

Climate change is a concern for the world, with largely devastating repercussions. Hotter temperatures and severe storms have resulted in expansive forests being depleted, rivers drying, and animals suffering due to overgrazing and disease. The effect of climate change and devastation extends into third world countries, with Botswana not being an exception. This further affects the environmentally dependent tourism industry, which is a problem for nations like Botswana that rely on tourism for a large amount of its economic growth.

According to the United Nations report (2021), climate change is defined as “long-term shifts in temperatures and weather patterns. These could be considered due to two reasons; mainly due to natural causes, such as volcanic eruptions, or due to human activity, such as the burning of fossil fuels. Burning fossil fuels generates greenhouse gas emissions that settle around the Earth’s atmosphere, trapping the sun’s heat and raising global temperatures. The IPCC report (2021) states that the effects of climate change include; changes in rainfall patterns, droughts and heat waves, as well as longer wildfire periods.

Tourism is defined by the Encyclopedia Britannica (2023), as the act and process of spending time away from home in pursuit of recreation, relaxation, and pleasure, while making use of the commercial provision of services. It is a key economic sector and tool for community development in most developing countries. However, climate change remains one of the major threats to this development. The tourism industry is sensitive to climate variability and change. The IPCC (2008) report entitled, ‘Summary for Policymakers’, states that climate is a principal resource for tourism, as it codetermines the suitability of locations for a wide range of tourist activities, is a principal

driver of global seasonality in tourism demand, and has an important influence on operating costs, such as heating-cooling, snow-making, irrigation, food and water supply, and insurance costs.

1.1 Background

The World Bank Climate Risk Country Profile (2021), states that the climate of Botswana is arid to semi-arid with warm winters, hot summers and highly unpredictable rainfall. Climate change is expected to increase the risk and intensity of flooding as well as increase the likelihood for water scarcity for northern, central and eastern areas of the country. Increased potential for higher intensity rainfall events will lead to the heightened risk of flooding, loss of life, and damage to property and infrastructure. Intense rainfall and flooding may also result in soil erosion and water logging of crops, thus decreasing yields and increasing food insecurity. Botswana's tourism industry is largely nature based, making it vulnerable to the effects of environmental change.

The African Nature Based Tourism Platform Country Summary Report (2021) provides that the travel and tourism sector contributes 11.5% to the country's GDP (Gross Domestic Product), and 26,000 total jobs as of the year 2019. The Chobe District is an administrative district in the northern part of Botswana, with the headquarters in Kasane. This district is responsible for the largest influx of tourists into the nation, as according to the Botswana Tourism report (2021), the first national park in Botswana was established within the district in 1967 which is named the Chobe National Park. It is home to a plethora of diverse and rich wildlife such as African elephants, and has the scenic Chobe River which, according to the Chobe Elephant Camp article (2023), has its origins in the highlands of Angola and flows in a south-easterly direction, connecting with the Zambezi River and providing ample opportunity for tourist activities such as game drives and boat cruises. There are, additionally, a number of luxury lodges and parks which entice tourists and locals alike into enjoying the sights available. The Chobe National park is widely known for its large elephant population, estimated to be around 50,000.

1.2 Problem Statement

Water is what makes the Chobe River magnificent. The tourism in the area is largely dependent upon this landmark. Ideally, the river attracts a diverse range of wildlife, mainly Kalahari elephants, to its shores, providing enough sustenance to the animal population. Further, the water provides lush Greenland for the wildlife to graze upon, fully accommodating all within the area. The unique combination of circumstances invites tourists to enjoy the views and vistas of the area, boosting the global perception of Botswana as a whole, as well as injecting much needed income into the developing economy.

This beneficial attraction is in danger due to the effects of climate change, however, as rising temperatures and poor rainfall within the area result in the drying up of the river with each progressive dry season. Dry season refers to when Chobe National Park is dry from May to October and becomes more and more parched as the season progresses. While this is a normal period observed annually within the area, it has been stated that each subsequent dry season has been lasting for longer amounts of time than is expected, and is increasing progressively each year. This further results in less water for the animals, meaning harsher competition for the resource, less Greenland, leading to overgrazing and animal migration away from the area, as well as less inviting views, from a lush river to a muddy marshland, which is also a breeding ground for disease spreading organisms, such as mosquitoes. This combination of issues negatively impact tourist outlooks of the destination, depriving the tourist dependent businesses within the area of their much needed income. The tourists themselves are not free of blame however, as their vehicles emissions and environmentally irresponsible behavior, such as littering, are large contributions to the issue.

A Sunday Standard article by Thobo Motlhoka (2022) states that climate change and environmental degradation pose existential threats to Botswana's tourism and its competitiveness. It further asserts that the acceleration of desertification caused by climate change is putting pressure on key wildlife habitats, particularly through water scarcity. Despite adaptation efforts,

water scarcity is high and climate risks remain pronounced. Tourism in the Chobe district is also overwhelmingly dependent on nature-based and biodiversity-driven activities, making it particularly vulnerable to climatic impacts. According to a report by the UN (2020), projected increases in the frequency of droughts, evaporation, and evapotranspiration along with potential changes in rainfall patterns and runoff may further reduce the availability of water in water-scarce regions, such as the northern Chobe region. The Chobe River, a key tourist attraction, is vulnerable to variable rainfall, with a projected decrease by 20 percent of stream flows for the Zambezi catchment. Botswana is also one of the most vulnerable countries to the negative effects of climate change in Sub-Saharan Africa. The country is expected to record an average temperature increase of 2.9 to 3.8 degrees Celsius by the year 2100, as stated by the UN (2020) report. Therefore, the intention of the study is to analyze how climate change affects the tourism industry and its effect on the economic development of the Chobe region, meaning a larger focus must be placed upon the Ministry of Environment, Natural Resources Conservation and Tourism, as well as one of its parastatals, The Botswana Tourism Organization based in Kasane, as they are the most knowledgeable sources encountering this issue.

1.3 Research objectives

This will be a mixed methods study, using largely qualitative methods with a degree of quantitative data, using semi- structured interviews to establish the long term results of climate change upon the tourism industry in Kasane, and the experiences and opinions of learned individuals being directly affected by these changes, specifically within key points within the tourism industry. The initial sample will be purposive sampling, and the sample size will be key informants from the Ministry of Environment, Natural Resources Conservation and Tourism, as well as informants from The Botswana Tourism Organization based in Kasane. The last of the sample will consist of a random sample of locals within the Chobe area. Only those who have consented will participate within the study. The objectives of carrying this study out are as follows;

1. To identify major causes of climate change within the Chobe area.

2. To assess the linkages between climate change and tourism within the area.
3. To identify any barriers affecting organizations responsible for mitigating the issue.
4. To recommend new ways to mitigate issues affecting tourism in Chobe.

1.4 Research questions

1. What are the major causes of climate change within the Chobe area?
2. How are climate change and tourism linked?
3. What barriers are affecting entities which are responsible for mitigating climate change in the area?
4. What more can be done to solve or reduce issues of climate change and their resultant effects upon tourism in Chobe?

1.5 Significance of the study

1.5.1 The Botswana government

It is hoped that a clearer identification of the effects of climate change upon tourism will result from this study, and to suggest new developments which could be enacted to address any issues therein.

1.5.2 The community

The study will hopefully communicate and educate members of the public, specifically those within the affected Chobe region that benefit from tourism, about the current state of climate change and the avenues that could collectively be taken to remedy this national problem. Additionally, the results of the study may add to the existing discourse on tourism and the decline in landmark quality.

1.5.3 The host institution

The findings of this paper will boost the image of the institution, as well as provide unique insight and information that can be used as a point of reference by future students within the same or similar fields of study.

1.5.4 To researchers

This study will inform future studies within the same field. It could be potentially used to educate future generations, as well as provide a point of reference for educational work.

1.6 Limitations of the study

Access to clients and subjects to gather data from within the tourism organizations may be limited, lack of previous research studies on this topic within this scope provide little frame of reference, and existing personal bias from previous experience as a citizen of the Chobe area may influence the results of my research. Respondents within climate change organizations may be sworn to a code of confidentiality regarding the required topics for this study. COVID 19 regulations may still limit interactions towards respondents, and a general lack of funds or limited resources to facilitate questionnaire formulation and distribution as well as interview requirements.

1.7 Delimitation of the study

The area of interest is the Chobe district of Botswana. This is because all subjects for data collection are employed within or residents of the district. The district is also a large contributor to national tourism, thanks to the Chobe National Park, which contains the Chobe River. The Key informants from each key organization may be difficult to set appointments with for interview.

1.8 Summary

Climate change and environmental degradation pose existential threats to Botswana's tourism and its competitiveness. Botswana's tourism industry is largely nature based, making it vulnerable to the effects of environmental change.

This will be a mixed methods study, using largely qualitative methods with a degree of quantitative data, using semi- structured interviews to establish the long term results of climate change upon the tourism industry in Chobe, and the experiences and opinions of learned individuals being directly affected by these changes, specifically within key points within the tourism industry. The initial sample will be purposive sampling, and the sample size will be key informants from the Ministry of Environment, Natural Resources Conservation and Tourism, as well as informants from The Botswana Tourism Organization based in Kasane. The last of the sample will consist of a random sample of locals within the Chobe area. Only those who have consented will participate within the study.

2.0 Literature Review

The literature review is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books and other sources relevant to a particular area of a research. The literature review is important because it acknowledges the works of previous researchers in relation to the research topic.

2.0.1. Climate Change, Tourism, and Community Development: Perceptions of Maun Residents, Botswana (2021)

This research article was imperative in understanding the nature of tourism within Botswana, whose tourism industry is largely nature based, making it vulnerable to the effects of environmental change. It further provides context for the linkages between climate change and tourism, stating that; “Consequently, communities who rely on tourism to some extent are also vulnerable to global climate change and its local effects.” This research is inadequate in covering the specific climate change issues plaguing tourism in the Chobe district, as it is a piece of work with a focus on the town of Maun.

2.0.2. Climate Change threatens Botswana’s tourism- World Bank, Thobo Motlhoka (2022)

This newspaper article states that “Apart from agriculture, tourism is also overwhelmingly dependent on nature-based and biodiversity-driven activities, making it particularly vulnerable to climactic impacts.” This article further illuminates linkages between climate change and tourism, and provides information on how climate change has affected the water source of the Chobe River, which stems all the way from Angola. This article however does not provide a specific focus upon the Chobe district, providing just a cursory glance at how the Chobe River is under threat.

2.0.3. International Stats Brief Quarter 1 (2022)

This report provides informative statistics on the steady decline of tourist activity within each major tourist zone within Botswana, Chobe included. This illuminates how the tourist industry has been affected over periods of time. While this report illuminates that there is a problem, it does not

provide specific information of the causes of this decline in tourist activity, providing no information on how much of the decline can be attributed to Climate change.

2.0.4. Country Summary Report: BOTSWANA, (2021)

This summary report states that “Botswana is home to the world’s largest elephant population (Sowa & Blackie 2019) and like most sub-Saharan countries, it relies on the tourism industry”. This cements that tourism is a major economic industry for Botswana, and it is largely nature based. This report is not very effective in this evaluation of the effects of climate change, as its focus is upon the impacts of COVID-19 upon the tourism industry.

2.0.5. Climate Risk Country Profile: Botswana World Bank Group (2021)

This action plan was drafted in response to Botswana’s concerning vulnerability to climate change, being a semi-desert area. It provides an in-depth overview of Botswana’s climate, land shape and how it has been affected by climate change over the years. The report states that “Botswana has observed considerable temperature increases and since the 1970s and average temperatures have increased 1.5°C” This indicates that Botswana has high drought vulnerability, which would be damaging to the tourism industry with attractions like the Okavango Delta and the Chobe River. This report however does not provide specific focus upon the Chobe district, or how its tourism is affected by this reported Climate Change.

2.0.6. Tourism and Climate Change in Botswana, Joseph E. Mbaiwa (2022)

This newspaper article provides a deep dive into the vital role tourism plays in Botswana’s economy and how that is under threat from climate change. It asserts this through statements such as; “Tourism plays a pivotal role in Botswana as the second largest economic sector after mining (especially diamonds)”. It also provides that tourism officials are aware of the threat of climate change to their attractions, stating that “These operators observed changes in the physical environment, livelihoods and weather patterns and linked these changes to climate change.” This further illuminates that while these officials are aware of the threat, they are not motivated to act against it, as it asserts that; “However, these operators argue that climate change has not influenced their businesses and nature based tourism activities they offer.” While this article provides specific

issues impeding climate change relief efforts, it is too broad and focused on Botswana as a whole and the Okavango Delta, providing little information about the climate change effects in the Chobe district.

3.0 Research Methodology

For this study, a mixed methods methodology will be used. Creswell (2003) states that a mixed methods methodology approach to research includes elements of both qualitative and quantitative data and data collection methods, using both facts and figures as well as feelings and observations to produce the most impactful result. This is based upon the assumption that if diverse types of data are collected, then they will provide an understanding of the research problem as a whole. Creswell (2012) states that combining the two types of data means one benefits from both the detailed, contextualized insights of qualitative data and the generalizable, externally valid insights of quantitative data. The strengths of one type of data often mitigate the weaknesses of the other, though this type of research method is more expensive and time consuming due to several data collection methods being employed. The research problem for this study is that of climate change and how it affects the tourism industry and subsequently the economic development of the Chobe region, meaning a larger focus must be placed upon key informants from the Ministry of Environment, Natural Resources Conservation and Tourism, as well as The Botswana Tourism Organization based in Kasane.

Quantitative data will be collected through surveys, interviews and public records available for perusal. These will provide the specific facts and figures necessary to establish the main problem and the resultant experiences of those affected. Qualitative data will be collected through surveys, interviews and observations. This information will compose majority of the research, as the opinions and experiences of the people directly involved are the best source to identify the issue. This denotes that this study is of a descriptive nature.

Descriptive research is a type of research that is used to describe the characteristics of a population. It collects data that are used to answer a wide range of what, when, and how questions pertaining to a particular population or group. This will be done through the previously stated survey and interview questions that determine what specifically and directly causes any climate change issues identified throughout this assessment. Through study of the opinions and experiences of participants within the study, i.e. Employees and customers of the organizations, this study can appreciate the scope of the organizational climate both internally and externally that contribute to any problem.

Ministry of Environment, Natural Resources Conservation and Tourism, and The Botswana Tourism Organization based in Kasane.	
Internally (Employees)	Externally (Clients)
Employee experience within each organization will provide unique insight into climate change linkages to tourism, and any reduction efforts.	Clients, namely tourists, business owners and civilians alike, experience with any issues regarding climate change gives a clear vision of issues to be tackled.
Employee experience within each organization will provide unique insight into any organizational problems affecting possibly ineffective measures in place to tackle climate change.	Client experience with an organization can expose any shortcomings and issues with land allocation processes
An informed strategy to tackle any identified climate change issues can be formed from the recommendations of those directly in control of the systems being assessed.	A plan to tackle any barriers to tourism resultant from climate change can be better formed from the recommendations of those directly affected.

3.1 Sampling Design

Within this study, the sampling method to be used to gather a sample of individuals for data collection must be a non-probability sampling method. George, A. L., & Bennett, A. (2005) defines non-probability sampling as a sampling technique in which the researcher selects samples based on the subjective judgment of the researcher rather than random selection. It is due to the fact that the intended sample population is known employees and customers of the organizations that the purposive sampling method was chosen. Judgment, or purposive sampling, also known as selective, or subjective, sampling, relies on the judgment of the researcher when choosing who to ask to participate Gerring (2007). Researchers may implicitly thus choose a “representative”

sample to suit their needs, or specifically approach individuals with certain characteristics. Applying this methodology, I aim to select individual clients and employees of the two organizations who are directly relevant to information about the issue.

Within the Ministry of Environment, Natural Resources Conservation and Tourism, the Environmental Affairs Office personnel, Meteorological Services personnel, Waste Management and Pollution personnel, and Tourism Department personnel are the four groups from which singular representatives may be chosen and information gathered from.

Externally, clients of the ministry will be selected at random in order to determine a representative opinion of each type of client, namely through Stratified Random Sampling. According to Shin (2020), Stratified random sampling starts off by dividing a population into groups with similar attributes. Then a random sample is taken from each group. These groups will namely be tourists, local business owners and civilians. The type client will be one of the first establishing survey questions in order to determine which group each client falls into, and at least ten individuals from each client group will be surveyed.

Lastly, within the Botswana Tourism Organization office based in Kasane, due to the small human resource size within the branch of the organization, it is determined that a singular knowledgeable respondent will be sufficient for the study.

3.2 Population of the Study

Primary data will be derived from information from an employee of the Tourism department. This is to determine their personal thoughts on the rationale behind the state of climate change and tourism within the department they oversee. Survey information from singular employees from important internal departments shall be gathered, namely the Environmental Affairs office, Meteorological Services office, and the Waste Management and Pollution office. Externally, survey information from clients of the Ministry shall be gathered. Next, a singular employee of the Botswana Tourism Organization office based in Kasane will be surveyed. Finally, personal observations and experience from being a guest within the organizations will be used, as personal insight contains unique information only I can provide.

Secondary data will be collected from published journal articles, media reports, written records and files that are accessible for perusal, as well as any relevant meeting minutes within public record.

3.2.1 Target Population

The Ministry of Environment, Natural Resources Conservation and Tourism

The sample group will include single representatives for four identified areas of climate change and tourism delivery services within the ministry, as well as a sample of ten of each from three identified client groups of the organization, namely;

Ministry of Environment, Natural Resources Conservation and Tourism	
Internally (Employees)	Externally (Clients)
Environmental Affairs Office personnel	Tourists
Meteorological Services personnel	Local Business Owners
Waste Management and Pollution personnel	Local Citizens
Tourism Department personnel	

The Botswana Tourism Organization office

The sample group will include a single representative for identified areas of climate change and tourism delivery services within the organization.

3.2.2 Involvement of the target population in the research process

The organization personnel will provide unique insight to the running of the organization as well as the specific shortcomings and restrictions experienced that result in the manner in which their attention given to climate change is observed currently.

The clients of the Ministry will provide insight into the current state of service delivery as well as assist in formulation of adequate remedies to the issue.

3.3 Data Collection Methods

3.3.1 Semi- Structured Interviews

Edwards (2012) states that a structured interview is a data collection method that relies on asking questions in a set order in which a few questions are predetermined, whereas the other questions aren't planned. This data collection method is most preferable, as it is applicable in a formal setting as well as flexible and adaptable to each individual, allowing for greater freedom of response. This process will provide the unique experiences of individuals who are directly involved with climate change and tourism processes of the Ministry and Botswana Tourism Organization. This will give an idea of the possible direct links, any existent efforts and any possible solutions that could be formulated. Internally, participants will be approached within the workplace, wherever private and confidential, ideally a closed office space. Externally, participants will ideally be invited to an office or separate area within the Ministry premises where they can speak freely.

Within the Botswana Tourism Organization office based in Kasane, a participant will be approached within the workplace, wherever private and confidential, and interviewed of their opinions.

3.3.2 Survey

A survey will be issued in addition to the interview, however, it also can be used as an alternative to interviews in the case of those who decline to be interviewed. A structured set list of questions is issued to both internal and external participants in order to gather data from respondents about their attitudes, experiences, or opinions. This is preferred due to the anonymity it can provide, allowing for more honest answers. Internally, participants will be approached within the workplace, handed the survey and given enough time to read and understand the questions as well as answer them. The completion rate would ideally a day's worth of time, however a week, namely five business days, will be afforded each respondent for completion. Externally, participants will be handed the survey while they wait in line at the Ministry and encouraged to fill and deposit it before leaving the organization.

3.3.3 Observations

These are the researcher's personal conclusions drawn from firsthand experiences. I as the researcher will observe how each relevant department personnel interact and conduct duties within

each department and interact with each other as departments. I further aim to observe their interactions with clients, how they treat customers and how they mitigate any relevant issues.

3.3.4 Documents and records

Non-confidential records kept within the organizations that contain relevant and pertinent data towards the issue will also be perused. For example, reference can be made to past records documenting the progression of climate change, and how it has adversely affected tourism and therefore the economy.

3.3.5 Ethical Considerations

Participants and their affiliates will not be named in subsequent write ups and material submitted for publication. They will not be asked to reveal any personal information like their names or telephone numbers. However their age, whether they are gainfully employed and duration of employment will be recorded to establish the type of individuals directly involved with and affected by the issue. In addition, their area of residence will be recorded, to ensure they are a resident of the Chobe area which is the area of study.

3.3.6 How the consent of participants will be obtained

Participants working within the organizations will be sent or handed an information sheet giving full details of the study. Participants will be given this printed information personally, detailing the proposed date of the assessment.

Participants who are clients of the ministry will be asked orally of their consent, using the voluntary response sampling method of non-probability sampling. It is my aim to approach clients of the organization at the site and draft them into the study on a voluntary basis.

3.3.7 Potential risks to subjects and how to minimize these

Participants within the organizations will be afforded anonymity where desired and clients outside the organization will face no potential risks, but will also be afforded anonymity where desired.

4.0. Data Analysis and Presentation of Findings

4.1. Introduction

This chapter presents both the quantitative and qualitative, therefore mixed, findings of the study that explores “The Effects of Climate Change on the Tourism Industry in Botswana: a Case in Chobe District”. As previously stated in the previous chapters of this study, the data is discussed in relation to the four objectives that informed the study, namely;

1. To identify major causes of climate change within the Chobe area.
2. To assess the linkages between climate change and tourism within the area.
3. To identify any barriers affecting organizations responsible for mitigating the issue.
4. To recommend new ways to mitigate issues affecting tourism in Chobe.

Data was collected from three main sample groups directly involved in the issue at hand. Within the Ministry of Environment, Natural Resources Conservation and Tourism, at least one correspondent from each relevant department internally within the ministry was used as a data source, namely Environmental Affairs personnel, Meteorological Services personnel, Waste Management and Pollution personnel, and Tourism Department personnel. Externally at the ministry, data was gathered from clients of the organization present on the premises during the five working days set aside for data collection, namely, tourists, local business owners and local civilians. Lastly, data was collected from a single respondent from the Botswana Tourism Organization office based in Kasane.

The tools used to gather this relevant data were a survey which was personalized to both internal and external respondents, a semi structured interview which was also personalized to each type of respondent, and observations, documents, and records perused within the organizations. We start off by discussing the results of demographic profiles of respondents of the study.

4.2. Demographic Profiles of Respondents

Ministry of Environment, Natural Resources Conservation and Tourism

Internally within the organization, a total of 4 departments requiring one representative each were approached with a survey to complete and were asked semi- structured interview questions, with a response rate of 100%.

Externally, a total of 25 out of an expected 30 client respondents were given a survey to complete and were asked semi- structured interview questions, which is a response rate of 83%.

4.3. Quantitative Analysis Results for External Respondents

Bryman (2012) States that quantitative data is numerical based, or data that can be easily converted into numerically without losing any meaning.

4.3.1. Respondent Response Rate

This refers to the number of external client respondents who completed the survey as shown in Table 4.1 below. Within the one week period, only five tourist clients were surveyed.

Table 4.1

Client Grouping	Frequencies
Tourist	5
Local Business Owner/Worker	10
Local Civilian	10
Response Rate Percentage	83%

Survey	Frequencies
Expected	30
Actual	25

Response Rate Percentage	83%
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4.3.2. Age

With regards to age, respondents were separated into 3 possible categories, 18-35, 35-60 and 60 and above. It was deduced that these three categories best represent the youth, middle aged and retirement age clients of the organization respectively. All age groups were represented, with larger numbers in the middle age bracket of 35-60, namely 44%.

4.3.3. Client Grouping of External Respondents

With regards to client grouping, respondents were divided into tourist, local business owner/worker and local civilian categories. Local business owner/workers and local civilians both hit the quota of ten respondents, whereas only five tourist respondents could be located for survey.

Table 4.2: Age, and Client Grouping of External Respondents

VARIABLE	CATEGORY	AMOUNT	(NO ANSWER)	PERCENTAGE
Age	18-35	10		40%
	35-60	11		44%
	60+	4		16%
TOTAL		25		100%
Client Grouping	Tourist	5	5	20%
	Local Business Owner/Worker	10		40%
	Local civilian	10		40%
TOTAL		25		83%

Table 4.3 below shows the perceptions section of the survey given external client respondents. Perceptions were measured on a 5-point scale (completely disagree, disagree, neutral, partly agree and completely agree).

Table 4.3: Client Perception Criterion

Criterion	Do you agree with this criterion?				
	Completely Disagree	Disagree	Neutral	Partly Agree	Completely Agree
I have an understanding of Climate Change.					
Climate change should be prioritized more highly by the Ministry.					
I am satisfied with the level of climate change relief efforts.					
Climate change is negatively impacting tourism.					
Climate change has negatively impacted my experience in Chobe.					
There is no threat Tourism will be largely affected by climate change effects in coming years.					

Table 4.4: Client Perceptions of Land Board Service Delivery

Perception Statement	Number of Responses	For	Against	Neutral
I have an understanding of Climate Change	25	5	14	6

Climate change should be prioritized more highly by the Ministry.	25	22	0	3
I am satisfied with the level of climate change relief efforts.	25	1	8	16
Climate change is negatively impacting tourism.	25	4	2	19
Climate change has negatively impacted my experience in Chobe.	25	11	12	2
There is no threat Tourism will be largely affected by climate change effects in coming years.	25	0	20	5

From Table 4.4 above. It can be deduced that;

Majority of respondents were unaware of what climate change is, with little overall knowledge displayed on the subject. After a brief explanation on the subject for those that required it, majority of respondents agreed that climate change should be prioritized more highly by the Ministry. However a majority gave neutral impressions to climate change relief efforts in place, and to its

potential impacts to tourism, due to being wholly unaware of any initiatives in place from the Ministry and government. A slight majority stated that climate change has indeed impacted them negatively, and an overwhelming majority stated that climate change will have an effect upon tourism in the coming years.

4.4. Quantitative Analysis Results for Internal Respondents

4.4.1. Respondent Response Rate

This refers to the number of internal employee respondents who completed the survey as shown in Table 4.5 below.

Table 4.5

Survey	Frequencies
Expected	4
Actual	4
Response Rate Percentage	100%

4.4.2. Age

With regards to age, respondents were separated into 3 possible categories, 18-35, 35-60 and 60 and above. These three categories best represent the youth, middle aged and retirement age employees of the organization respectively. Only two age groups were represented, being the 18-35 and 35-60 groups respectively, with larger numbers in the middle age bracket of 35-60, namely 75%.

4.4.3. Department Position of Internal Respondents

With the department position of respondents, respondents were divided into four distinct categories, namely, the Tourism office, Environmental Affairs office, Meteorological Services office, and the Waste Management and Pollution office. Each of these departments had one representative respondent, with an attendance rate of 100%.

4.4.3. Employment Commencement Date of Internal Respondents

With regards to employment commencement date, respondents were divided into 3 categories, namely 1990-2010, 2010-2020 and 2020 onwards. This is to establish the level of work experience that the employee contains about the organization. Chou, Y. (2009) defines work experience as a period of time during which a young person, usually a student, works for a company or organization in order to get experience of a particular type of work. 100% were the majority, being employed from 2010-2020.

Table 4.6: Age and Commencement Date of Employment of Internal Respondents

VARIABLE	CATEGORY	AMOUNT	PERCENTAGE
Age	18-35	1	25%
	35-60	3	75%
	60+	0	0%
TOTAL		5	100%
Department Position of Internal Respondents	Tourism office	1	25%
	Environmental Affairs office	1	25%
	Meteorological Services office	1	25%
	Waste Management and Pollution office	1	25%
TOTAL		4	100%
Employment Commencement Date	1990-2010	0	0%
	2010-2020	4	100%
	2020 onwards	0	0%

TOTAL		5	100%
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Table 4.7 below shows the perceptions section of the survey given internal employee respondents. Perceptions were measured on a 5-point scale (completely disagree, disagree, neutral, partly agree and completely agree).

Table 4.7: Employee Perception Criterion

Criterion	Do you agree with this criterion?				
	Completely Disagree	Disagree	Neutral	Partly Agree	Completely Agree
I am satisfied with the level of climate change relief output within the organization.					
Climate change is negatively impacting tourism.					
Communication between relevant departments is effective.					
The organization is overly bureaucratic.					
The government is allocating enough attention to climate change mitigation efforts.					
Climate change should be prioritized more highly by the Ministry.					

Table 4.8: Employee Perceptions

Perception Statement	Number of Responses	For	Against	Neutral

I am satisfied with the level of climate change relief output within the organization.	4	0	3	1
Climate change is negatively impacting tourism.	4	4	0	0
Communication between relevant departments is effective.	4	2	1	1
The organization is overly bureaucratic.	4	4	0	0
The government is allocating enough attention to climate change mitigation efforts.	4	2	2	0
Climate change should be prioritized more highly by the Ministry.	4	0	4	0

From Table 4.8 above, it can be deduced that;

Majority of respondents are not satisfied with the level of climate change relief output within the organization. The sum total of respondents agree that climate change is negatively impacting tourism in the Chobe area, and the organization is overly bureaucratic. With regards to inter-departmental communication, majority of respondents of respondents agree that communication between departments is effective. There is an even split between respondents for and against the notion that government is allocating enough attention to climate change mitigation efforts. The sum total of respondents were against the statement that Climate change should be prioritized more highly by the Ministry, stating that it is a matter that is a top priority to the Ministry.

4.5. Quantitative Analysis Results for Internal Respondents

The Botswana Tourism Organization office in Kasane

4.5.1. Respondent Response Rate

This refers to the singular internal employee respondent who completed the survey as shown in Table 4.9 below.

Table 4.9

Survey	Frequencies
Expected	1
Actual	1
Response Rate Percentage	100%

4.5.2. Age

With regards to age, the respondent was separated into 3 possible categories, 18-35, 35-60 and 60 and above. These three categories best represent the youth, middle aged and retirement age employees of the organization respectively. The age group represented was the 18-35 group.

4.5.3. Employment Commencement Date of Respondent

With regards to employment commencement date, the respondent was divided into 3 categories, namely 1990-2010, 2010-2020 and 2020 onwards. This is to establish the level of work experience that the employee contains about the organization. The respondent was employed from 2020 onwards.

Table 4.10.: Age, Commencement Date of External Respondents

VARIABLE	CATEGORY	AMOUNT	PERCENTAGE
Age	18-35	1	100%
	35-60	0	0%
	60+	0	0%
TOTAL		1	100%
Commencement Date	1990-2010	0	0%
	2010-2020	0	0%
	2020 onwards	1	100%
TOTAL		1	100%

Table 4.11 below shows the perceptions section of the survey given internal employee respondents. Perceptions were measured on a 5-point scale (completely disagree, disagree, neutral, partly agree and completely agree).

Table 4.11.: Employee Perception Criterion

Criterion	Do you agree with this criterion?				
	Completely Disagree	Disagree	Neutral	Partly Agree	Completely Agree

I am satisfied with the level of climate change relief output within the organization					
Climate change is negatively impacting tourism.					
The organization is overly reliant upon the Ministry for guidance					
The government is allocating enough attention to climate change mitigation efforts.					
Climate change should be prioritized more highly by the Ministry.					

Table 4.12.: Employee Perceptions

Perception Statement	Number of Responses	For	Against	Neutral
I am satisfied with the level of climate change relief output within the organization.	1	0	1	0
Climate change is negatively impacting tourism.	1	1	0	0
The organization is overly reliant upon the	1	1	0	0

Ministry for guidance				
The government is allocating enough attention to climate change mitigation efforts.	1	0	1	0
Climate change should be prioritized more highly by the Ministry.	1	1	0	0

From Table 4.12 above, it can be deduced that;

The respondent is not satisfied with the level of climate change relief output from the ministry, and they agree that climate change is negatively impacting tourism in the Chobe area. The respondent does feel the organization is overly reliant upon the Ministry for guidance, and should be prioritized by the Ministry. Lastly, the respondent disagrees that government allocates enough attention to the issue.

4.6. Qualitative Analysis Results for External Respondents

Ministry of Environment, Natural Resources Conservation and Tourism

Creswell, J. (2014) States that Qualitative research involves collecting and analyzing non-numerical data to understand concepts, opinions or experiences.

4.6.1. Important Qualitative Findings

Because internal and external respondents within the Ministry received different survey and interview questions in order to receive an internal and external impression of results, the results from external (client) respondents differ. The most important qualitative findings from the study are as follows;

4.6.2. Respondent's knowledge about Climate change.

14 respondents who participated in the study cited lacking knowledge about climate change, and required a brief explanation of its definition and potential effects.

4.6.3. Linkages between Climate change and tourism.

23 out of 25 respondents asked whether there any major linkages between climate change and tourism answered "Yes". Citing "The environment is a part of tourism in Chobe." as the main reason for this opinion. Table 4.13 below illustrates this information;

Table 4.13

Statement	Yes	No	Reasons	Respondents
Are there any major linkages between climate change and tourism in the Chobe area?	23	2	The environment is a part of tourism in Chobe.	23
			We don't really see a connection between the two	2
TOTAL				25

4.6.4. Observed tourist attractions being affected by climate change

19 respondents asked whether they observed any tourist attractions being affected by climate change answered "Yes". Citing "Drought", and a "Decline in wildlife" as reasons for this opinion. Table 4.14 below illustrates this information;

Table 4.14

Statement	Yes	No	Reasons	Respondents
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Have you observed any tourist attractions being affected by climate change?	19	6	Drought	15
			Decline in wildlife	4
			No observation	6
TOTAL				25

4.6.5. Recommendations to the Ministry/government to address the climate issue

19 respondents asked whether they have any recommendations to the Ministry/government to address the climate issue answered “Yes”. Citing “Community Outreach”, “Green energy” and “Nature conservation” as reasons for this opinion. Table 4.15 below illustrates this information;

Table 4.15

Statement	Yes	No	Reasons	Respondents
Do you have any recommendations to the Ministry/government to address the climate issue?	8	17	Community Outreach	6
			Nature Conservation	1
			Green energy	1
			No recommendation	17
TOTAL				25

4.6.6. How, if at all, climate change has affected respondents personally

16 respondents asked whether how, if at all, climate change has affected them personally cited “Declining customers”, “Dying crops”, “Uncomfortable climate” and “Drought” as reasons for this opinion. Table 4.16 below illustrates this information;

Table 4.16

Statement	Reasons	Respondents
How, if at all, climate change has affected you personally.	Dying plant life/crops	5
	Drought	6
	Declining customers	2
	Uncomfortable climate (extreme heat)	3
	No effect	9
TOTAL		25

4.7. Qualitative Analysis Results for Internal Respondents

These are the results of data collected from employee respondents within the Ministry. The relevant Departments targeted for survey and interview were; Tourism office personnel, Environmental Affairs office personnel, Meteorological Services office personnel, and the Waste Management and Pollution office personnel. All four departments approached participated, and a sample of one individual from each department was used.

4.7.1. In your view, are there any major linkages between climate change and tourism in the Chobe area?

Of the four Respondents who participated, four stated “Yes”, citing “Decreasing rainfall”, “Increasing temperatures” and “Reduced biodiversity”, as their linkages.

4.7.2. In your view, is there an issue within the organization as a whole affecting climate change relief efforts

Of the four Respondents who participated, three stated “Yes”, citing “Too much bureaucracy”, “Not enough climate change legislation” and “Inadequate human resources”, as their issues stated. The final respondent stated “No”. Table 4.17 below illustrates this information;

Table 4.17

Statement	Yes	No	Reasons	Respondents
Issue within the organization as a whole affecting climate change relief efforts	3	1	Too much bureaucracy	1
			Not enough climate change legislation	1
			Inadequate human resources	1
			None	1
TOTAL				4

4.7.3. Are tourist attractions within the area being affected by climate change?

Regarding the internal respondents who participated, all stated “Yes”, citing “Little rainfall”, “Shrinking of the Chobe River”, “Wildlife diseases”, and “Reduced attractiveness of the area”, as their issues stated.

4.7.4. Recommendations to the organization as a whole to improve climate change relief efforts

Of the four Respondents who participated, three stated “Yes”, meaning they had recommendations, citing “Increased budget”, “Strict climate legislation”, and “Reduced bureaucracy”, as their recommendations, with the final respondent stating “No”. Table 4.18 below illustrates this information;

Table 4.18

Statement	Yes	No	Reasons	Respondents
Do you have any recommendations to the organization as a whole to improve climate change relief efforts	3	1	Increased budget	1
			Strict climate legislation	1
			Reduced bureaucracy	1
			No recommendation	1
TOTAL				4

4.7.5. Least effective Department in Climate change reduction efforts

Respondents were asked which department, namely the 4 relevant departments within the Ministry closest to this issue, Environmental Affairs, Meteorological Services, Waste Management and Pollution, or Tourism, was the least effective in their opinion. Of the total 4 respondents, 2 declined to comment, 1 named the “Environmental Affairs” department and 1 named “Waste Management and Pollution” department. Table 4.19 below illustrates this information;

Table 4.19.

Statement	Department	Respondents
Least effective department	Environmental Affairs	1
	Waste Management and Pollution	1
	Declined	2
TOTAL		4

4.8. Qualitative Analysis Results for Internal Respondents

The Botswana Tourism Organization office in Kasane

These are the results of data collected from respondents within the Botswana Tourism Organization in Kasane.

4.8.1. In your expert opinion, is there a decline in tourism in Chobe due to climate change?

The respondent stated “Yes”, citing “A steady decline in tourist attendance in the area due to a less favorable climate.”

4.8.2. Are tourist attractions within the area being affected by climate change?

The respondent stated “Yes”, citing “The Chobe river is getting smaller each dry season.”

4.8.3. In your view, are there any major efforts being made by your organization regarding climate change relief?

The respondent stated “No”, citing “We don’t have much power as a parastatal of the Ministry, and can only make reports and recommendations on the issue.”

4.8.4. In your opinion, is the government as a whole effective in solving the climate change problem?

The respondent stated “No”, citing “Climate change is an ever increasing problem, and government isn’t tackling it quickly enough.”

4.8.5. Do you have any recommendations to your organization as a whole to improve climate change relief efforts?

The respondent stated “No”, citing “Until we get more autonomy, we can only promote and report on tourism activity within the area, but until then there is little the organization can achieve regarding climate change.”

5.0. Discussion and Interpretation of Results

From the total data collected, logical assumptions and developments can be drawn.

5.1. Interpretation of External Client Data

Ministry of Environment, Natural Resources Conservation and Tourism

5.1.1. Respondent's knowledge about Climate change.

It can be determined from the data that clients of the Ministry lack knowledge about climate change, having a fairly rudimentary understanding of the concept and its impacts upon the environment outside of their own personal interests.

5.1.2. Government Issues

Respondents mostly expressed dissatisfaction with government regarding their involvement in any issue of public interest. The general consensus with local civilians and business owners is that members of government prioritize their own self-interests before the public. Some speculated corruption or general lack of care being the cause, with one individual stating “Ke go latlhelela motho.” Loosely meaning that they believe government has no care in how they deal with any issues. Due to this general consensus, there is a lack of trust between the locals and government, and no local support for any climate change reduction initiatives.

5.1.3. Personal effects upon Clients

Respondent clients of the Ministry have reported several resultant effects of climate change issues upon their very livelihoods. A number reported some observed drought issues regarding local crop farming activities as well as livestock health. One civilian who is a farmer stated that there is also an increase in crop pests during the dry season. Tourist respondents gave the impression that the heat within the area was unfavorable for certain outdoor activities they wished to partake in at the Chobe National Park, such as game drives. They also noted their discomfort with the amount of

insects such as mosquitoes and flies within the area, with local civilians noting an increase in insects with each year.

5.2. Interpretation of Internal Employee Data

Based upon qualitative and quantitative data collected from specific key employees of the Ministry of Environment, Natural Resources Conservation and Tourism, a natural progression of interpretations can be drawn. Namely;

5.2.1. Major linkages between climate change and tourism in the Chobe area

Tourism is central to foreign currency generation for Botswana, and plays a pivotal role as the second largest economic sector after mining. The Chobe River, which is the focus of most tourists within the area is vulnerable to climate change, and hence is expected to have a huge impact upon the industry. With the river shrinking with each passing dry season annually, certain areas have become less sustainable for local wildlife, such as elephants, which are also a huge tourist draw to the area.

5.2.2. Tourist contributions to climate change in the Chobe area

The respondent from the Waste Management and Pollution Department made it known that majority of the pollution within the area that is negatively affecting the River, wildlife as well as the environment can mostly be attributed to the tourists themselves. Though there are many ways in which they try to keep them informed about protecting the attractions, such as pamphlets, they still contribute largely to the waste and pollution which exacerbates the climate change issue.

5.2.3. Issues within the Ministry as a whole affecting climate change relief efforts

Bureaucracy is an issue that was agreed upon by all internal respondents of the Ministry. Inter-departmental systems and processes take too long to be passed along to relevant personnel. The respondent from the Meteorological Services office stated that it took 2 years for their reporting about Climate Change progression in the Chobe area to be reviewed by the Minister for consideration. This means that any required legislation takes a very long time to be enacted. There

is also a definite lack of resources, as workers have to wait a long time to receive required materials such as paper. Systems are faulty or outdated as well, with the Ministry relying upon paper records, and what few computers which are available being outdated, slow and cumbersome. It was also made apparent that the workload is not proportional to the human resources available.

5.2.4. Least effective Department in Climate change reduction efforts

Respondents willing to answer this question identified the Environmental Affairs Department and the Waste Management and Pollution Department as the least effective departments within the organization. The Environmental Affairs Department was criticized for their handling of files and alleged consistent filing errors with the Records Department. One respondent stated “That Department is entirely lost.” inferring that the entire department is incapable of handling their duties. It was stated that records have been misplaced several times, requiring employees of other departments to call clients back in to perform a step in their associated processes once more, resulting in negative interactions with disgruntled clients. Further, one respondent identified the Waste Management and Pollution Department as the least effective, stating that their dispute resolution and application procedures are too slow. They also stated that other departments within the organization are unable to handle even rudimentary cases without the head’s written approval, meaning there is time wasted awaiting consent.

5.3. Interpretation of Internal Employee Data

The Botswana Tourism Organization office in Kasane

5.3.1. Internal Opinions on Central Government

The respondent expressed disappointment in Ministry directives in order to address the climate issue. They stated that “Government is trying its best, but it is focused on other areas of concern.” Meaning that it is their belief that government is not addressing the right issues in order to tackle the problem. They further stated that central government has a tendency to initiate new strategies to improve and protect tourist attractions endangered by climate change without improving the working and operational standards of the organization, resulting in the initiative failing due to

organizational inadequacies to address the initiative requirements, with the resultant blame falling to the Tourism Organization office. It can therefore be deduced that there is no harmony between the organization and the Ministry in trying to tackle the issue.

5.3.2. A decline in tourism in Chobe due to Climate change

Climate change has contributed to the increasing heat, drought and insect activity within the area. All of these factors are contributions to fewer tourist attendance in the area during peak tourism season, as tourists find the climate uncomfortable. The tourist attractions in the area are also being affected by climate change, which provides less motivation for tourists to visit the area.

5.3.3. The power of parastatals regarding climate change

Parastatals have little autonomy in being able to enact any climate change relief effort. They must run any recommendation or report through the Ministry and, by extension, the central government at large, which takes far too long to get anything done. The most an organization such as The Botswana Tourism Organization can achieve is to provide the local and international publics with intimate information about the beauty of the area and how to enjoy and maintain it.

6.0. Conclusions and Recommendations

6.1. Introduction

The following chapter is a summation of what the study is about. The researcher collected the data based on the objectives of the study and matched conclusions to each objective, proposing recommendations to mitigate the effects of Climate change on the tourism industry in Botswana, in the Chobe district.

6.2. Brief Summary

This study seeks to the effects of Climate change on the tourism industry in Botswana, in the Chobe district. Therefore the researcher wanted to find the opinions and impacts experienced by the employees of departments relevant to Climate change and tourism within the organization most directly involved with this issue, the Ministry of Environment, Natural Resources Conservation and Tourism, clients directly affected by this issue as well as The Botswana Tourism Organization office in Kasane. This study follows a mixed research design which consists of both qualitative and quantitative methods where more details on the research problem were uncovered. Data was collected using personally administered structured surveys and semi-structured interviews tailored to internal and external respondents.

6.3. Conclusions

Conclusions were matched to each previously stated objective.

6.3.1. To identify major causes of climate change within the Chobe area.

The major contributions of Climate Change within the Chobe area are the emissions from local machinery, automobiles and factories within the area, but this is negligible to the large

international producers of greenhouse emissions such as the US or China. Nevertheless, global temperatures are steadily rising, and this affects all areas regardless of their contributions to greenhouse emissions. With this in mind, this has affected the Chobe area with more sparse rainfall in the rainy seasons and longer dry periods during the dry seasons. This further results in less lush grass for livestock and wildlife alike, as well as the shrinkage of larger bodies of water within the Chobe area such as the Chobe River.

6.3.2. To assess the linkages between climate change and tourism within the area.

Climate change and tourism linkages in the Chobe area are thus;

As the biggest tourist attraction within the area is the Chobe River, as well as the unique wildlife within the area, climate change proposes a direct threat to tourism. As previously stated, the Chobe River is shrinking, this presents less beautiful waterfront vistas, as muddier marshland is created as a result of this shrinkage. Further, this muddy marshland provides ample breeding ground for disease spreading pests such as mites and mosquitoes.

With less water to migrate towards, the unique wildlife is forced to leave the area in search of more reliable and safer sources of water, reducing their numbers for tourists to visually enjoy. Wildlife is also in danger of contracting illnesses from contaminants in water that arise from the marshland and disease carry pests.

Climate change causes peak temperatures during the dry season, making it an unfavorable period for most tourists to find the destination a desirable location to visit, as the sweltering heat makes for an uncomfortable stay. Tourists are also in danger from the high amounts of disease carrying pests like mosquitoes from the nearby river due to its shrinkage.

However, tourists themselves also contribute to Climate Change within the area, producing high amounts of waste in peak tourist seasons through actions such as littering. This pollutes the river further, reducing its visual appeal to the very tourists contributing to its damage. Tourists also use greenhouse gas emitting machinery such as automobiles to traverse the area, creating more emissions within the Chobe district during peak tourist seasons in combination with locals.

6.3.3. To identify any barriers affecting organizations responsible for mitigating the issue.

From the information gathered, The Ministry of Environment, Natural Resources Conservation and Tourism has a few identifiable barriers to effectively mitigating the issue within the Chobe district.

The organization is considerably too bureaucratic. The systems in place make any initiative require too much approval before it can finally be enacted, and by then it may be too late for it to be effective with the issue having progressed in the time it took to seek approval. The Ministry is further slowed down by the outdated information systems in place. The use of paper records is too inefficient as evidenced by the Environmental Affairs department consistently mishandling important files.

Further, The Ministry has made minimal efforts to engage the public on this issue despite being aware of its potential threat to Botswana's second largest economic industry. This is evidenced by majority of the local's less than rudimentary knowledge of the concept and its potential ramifications to their livelihoods and tourist attractions.

Regarding parastatals affiliated with the Ministry which are vested with responsibility to observe tourist activity, organizations such as The Botswana Tourism Organization office in Kasane are afforded too strict an objective without being able to recommend anything beyond their purview. They are unable to act on any emergent issues, but instead can only recommend a solution that can be ignored at the Ministry's discretion.

6.4.4. To recommend new ways to mitigate issues affecting tourism in Chobe.

This will be addressed within the next section below.

6.4. Recommendations

6.4.1. Acquire new technologies that could be applied into the organization

In order to make sure employees have all the facilities available currently to undertake their tasks, it is recommended that specific technological upgrades be made and implemented. New hardware, such as computers, phones, printers or scanners, etc. as well as new software such as database

software, wireless internet, company intranet in order to safely and securely share confidential documents and information and land surveying software. All this new technology must run on green energy, so the organization can be an example to Botswana as a whole and the individuals within Chobe district to “go green” and use environmentally friendly energy sources.

6.4.2. The Ministry should hold discussions with the public

Khiba, B. M. (2017) states that public participation can be any process that directly engages the public in decision-making and gives full consideration to public input in making that decision. The Ministry should hold discussions in which they work with the public to find a mutually beneficial solution to the climate issue. In this way, if the policy fails, the responsibility and blame does not lie solely with government. It further solidifies trust between the government and the people, which is sorely lacking regarding this issue.

6.4.3. The Ministry should lobby for climate change to be taken more seriously by central Government

Central government is aware of the problem of climate change, but on a global scale. They have yet to focus largely upon its effects locally, and its threats to the main industries within the nation, namely the tourist industry. This issue needs a spotlight, as tourism is vital to Botswana’s autonomy. The tourist attractions are also the pride of Botswana, without which the nation cannot boast of its unique beauty. The Ministry needs to make a concentrated push to present climate change as an issue that needs to be tackled within Botswana’s borders and a focused, driven plan of action be formulated before it’s too late.

6.4.4. Acquire “green” modes of technologies that could be applied into the Chobe district

The Chobe district is a close knit town that relies mostly upon its tourist attractions for economic activity. “Green” modes of transportation (e.g. smart cars/carts, electric bikes) could be implemented to reduce the Chobe district’s carbon footprint and help preserve the tourist attractions they are so reliant upon. Local businesses such as lodges should be mandated to switch to green modes of energy and maintain allowed emergency sources of energy (e.g. electrical generators) a considerable distance away from the Chobe River to reduce the risk of pollution. Make Chobe a green district.

6.4.5. Implement harsher punitive measures for pollution in the Chobe district

There should be stricter measures in place to ensure there is less pollution within the area from both locals and tourists, (e.g. the imposition of heavier fines).

6.4.6. The Botswana Tourism Organization office should be given more resources and autonomy

The parastatals like The Botswana Tourism Organization office in Kasane have too little autonomy. They rely upon the parent Ministry for funding and mandates and is subject to directives from the Ministry which may impact operations negatively in order to appease the central Government. The organization should have the power to receive revenue directly from central government with an increased budget, direct its operations without consultation, structure the organization accordingly, increase human resources and implement bigger developments which improve service delivery and directly mitigate climate change causes in the area.

6.5 Conclusion

Climate change is a big issue globally, but it is a real threat within the Chobe district that relies heavily upon environmental based tourism. The systems in place that are supposed to mitigate these issues are preoccupied with other issues of state, and fail to see the creeping issue slowly building beneath. Swift action is the best way stop a minor irritant from becoming a damaging issue. This study performed an evaluation of the systems within the Ministry and one of its parastatals causing identifiable issues with climate change mitigation. This study identified the external impacts upon clients of the organization as well as the internal struggles and shortcomings faced internally by employees. It can be concluded that the administrative systems are inadequate in addressing the issues that perpetually plague the organization's service delivery. This study aimed to educate the public as well as suggest recourse for these issues that could be considered and hopefully adopted and implemented in any capacity.

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APPENDICES

APPENDIX 1: Respondent Consent Form



Respondent Consent Form

Private Bag k30

Kasane,

Botswana

Dear Sir/Madam,

My name is **Goitsewang Julia Tsile**. I am a Master's student at **European Business Institute of Luxembourg** studying the **Master of Business Administration (MBA)** course. I am currently conducting a research study with the title of; **The Effects of Climate Change on the Tourism Industry in Botswana: a Case in Chobe District**. This study requires that data be collected from relevant sources, which includes sourcing it from knowledgeable individuals.

In this study I aim to assess how Climate change and environmental degradation pose existential threats to Botswana's tourism and its competitiveness. Botswana's tourism industry is largely nature based, making it vulnerable to the effects of environmental change. I would like to ask you a set of questions about how climate change issues have affected you, and how you think these issues may be resolved.

All information gathered during our discussion will be kept strictly confidential. As a potential participant within this study, you and your affiliates will not be named in subsequent write ups and material submitted for publication. You will not be asked to reveal any personal information such as names or telephone numbers. However your age, employment level and position may be recorded to establish more specificity in data results. It is my intent to administer an interview and/or questionnaire, which will mostly focus upon your thoughts and observations about the research problem. Your participation within this study is completely voluntary, and you are at liberty to withdraw at any time. If there is any further information you do not wish me to record, please let me know. Thank you for your consideration.

If you agree to take part in this study, you are required to sign this consent form;

As a respondent, I agree to participate in the above study. I understand my participation is voluntary and that my name will not be associated with my responses.

Respondent's signature: _____ **Date:** _____

Occupation: _____ **Department:** _____

Yours faithfully,

Goitsemanang Julia Tsile
+267 71972816
morrisobena@gmail.com

APPENDIX 2: Internal Interview Questions

Ministry of Environment, Natural Resources Conservation and Tourism

Internal (Employee) Interview Questions

1. What is your position within the Ministry?
2. What are the duties of your department within the Ministry?
3. Please describe your understanding of climate change within the Chobe area.
4. In your view, are there any major linkages between climate change and tourism in the Chobe area?
5. Please describe how your department contributes to climate change relief efforts as a whole in any way.
6. Are tourist attractions within the area (e.g. local wildlife, Chobe river) being affected by climate change?
7. If so, please detail what you believe is the cause of this problem.
8. In your opinion, is the government's involvement helping or hurting the issue?
9. Do you have any recommendations to your department to improve climate change relief efforts?
10. Which of the four relevant departments is the least effective in climate change reduction efforts in relation to tourism? (Environmental Affairs, Meteorological Services, Waste Management and Pollution. or Tourism).
11. In your opinion, what changes can be made within the organization as a whole?

APPENDIX 3: Internal Survey Questions

Ministry of Environment, Natural Resources Conservation and Tourism

Internal (Employee) Survey Questions

Personal Questions

Age:

Department within Ministry:

Position within department:

When you started working within the organization (month/year):

Research Questions

- 1) In your view, are there any major linkages between climate change and tourism in the Chobe area?

() No.

() Yes. Please provide those linkages.

2) In your expert opinion, is there a decline in tourism in Chobe due to climate change?

() No.

() Yes. How?

3) In your view, is there an issue within the organization as a whole affecting climate change relief efforts?

() No.

() Yes. Which?

4) In your view, is there a problem within your department affecting climate change reduction efforts?

() No. Why?

() Yes. Why?

5) Are tourist attractions within the area (e.g. local wildlife, Chobe river) being affected by climate change?

() No.

() Yes. How?

6) Please mark the corresponding option below

Criterion	Do you agree with this criterion?				
	Completely Disagree	Disagree	Neutral	Partly Agree	Completely Agree
I am satisfied with the level of climate change relief output within the organization.					
Climate change is negatively impacting tourism.					
Communication between relevant departments is effective.					
The organization is overly bureaucratic.					
The government is allocating enough attention to climate change mitigation efforts.					
Climate change should be prioritized more highly by the Ministry.					

7) In your opinion, is the government as a whole effective in solving the climate change problem?

() No. Why?

() Yes. Why?

8) Do you have any recommendations for improvements within your department regarding climate change?

() No.

() Yes. Please elaborate:

9) Do you have any recommendations to the organization as a whole to improve climate change relief efforts?

() No. Why?

() Yes. Please elaborate:

10) In your view, which of the following departments is least productive in climate change reduction efforts in relation to tourism? (Environmental Affairs, Meteorological Services, Waste Management and Pollution, or Tourism):

Thanks for your attention! I really appreciated your cooperation. As soon as possible I will disseminate the results of this research. If you need any additional information, please contact me at morrisobena@gmail.com.

APPENDIX 4: External Interview Questions

Ministry of Environment, Natural Resources Conservation and Tourism

External (Client) Interview Questions

1. Please describe your experience as a client of the Ministry.
2. Please describe the type of client you are (i.e. Tourist, Local business owner or Local civilian).
3. Please describe your understanding of climate change in general, and within the Chobe area based upon your experience.
4. In your opinion, is there a link between climate change and tourism?
5. Have you observed any tourist attractions (e.g. local wildlife, the Chobe river) being affected by climate change?
6. Please describe how, if at all, climate change has affected you personally. (e.g. decline in customers, local and tourist alike, due to extreme heat)
7. In your opinion, is the Ministry effective in dealing with any climate change issues?
8. Do you have any recommendations to the Ministry in dealing with any potential climate issues?
9. Do you have any recommendations to the Ministry to boost tourism?

APPENDIX 5: External Survey Questions

Ministry of Environment, Natural Resources Conservation and Tourism

External (Client) Survey Questions

Personal Questions

Age:

Client Status (*check which applies*):

- ☐ Tourist
- ☐ Local Business Owner/Worker
- ☐ Local Civilian

Research Questions

- 1) Please describe your understanding of climate change in general, and within the Chobe area based upon your experience.

- 2) In your view, are there any major linkages between climate change and tourism in the Chobe area?

☐ No.

☐ Yes. Please provide those linkages.

3) Have you observed any tourist attractions (e.g. local wildlife, the Chobe river) being affected by climate change?

☐ No.

☐ Yes. How?

4) In your opinion, is the Ministry effective in dealing with any climate change issues?

☐ No. Please elaborate:

☐ Yes. Please elaborate:

5) In your view, is there a problem within government affecting climate change relief efforts?

() No. Why?

() Yes. Why?

6) Please mark the corresponding option below

Criterion	Do you agree with this criterion?				
	Completel y Disagree	Disagree	Neutral	Partly Agree	Completely Agree
Climate change should be prioritized more highly by the Ministry.					
I am satisfied with the level of climate change relief efforts.					
Climate change is negatively impacting tourism.					
Climate change has negatively impacted my experience in Chobe.					
There is no threat Tourism will be largely affected by climate change effects in coming years.					

7) Do you have any recommendations to the Ministry/government to address the climate issue?

() No.

() Yes. Please elaborate:

- 8) Please describe how, if at all, climate change has affected you personally. (e.g. decline in customers, local and tourist alike, due to extreme heat).

Thanks for your attention! I really appreciated your cooperation. As soon as possible I will disseminate the results of this research. If you need any additional information, please contact me at morrisobena@gmail.com

APPENDIX 6: Internal Interview Questions

The Botswana Tourism Organization office in Kasane

Internal Interview Questions

1. What is your position within the organization?
2. What are the duties of your organization?
3. Please describe your understanding of climate change within the Chobe area.
4. In your view, are there any major linkages between climate change and tourism in the Chobe area?
5. Please describe how your organization contributes to climate change relief efforts as a whole in any way.
6. Are tourist attractions within the area (e.g. local wildlife, Chobe river) being affected by climate change?
7. If so, please detail what you believe is the cause of this problem.
8. In your opinion, is the organization overly reliant upon the Ministry for guidance?
9. In your opinion, is the government's involvement helping or hurting the issue?
10. Do you have any recommendations to your organization to improve climate change relief efforts?
11. In your opinion, what changes can be made within the Ministry/government as a whole regarding tourism and climate change?

APPENDIX 7: Internal Survey Questions

The Botswana Tourism Organization office in Kasane

Survey Questions

Personal Questions

Position within organization:

When you started working within the organization (month/year):

Age:

Research Questions

1) In your view, are there any major linkages between tourism and climate change in the Chobe area?

() No.

() Yes. Please provide those linkages.

2) In your expert opinion, is there a decline in tourism in Chobe due to climate change?

☐ No.

☐ Yes. How?

3) Are tourist attractions within the area (e.g. local wildlife, Chobe river) being affected by climate change?

☐ No.

☐ Yes. How?

4) In your view, are there any major efforts being made by your organization regarding climate change relief?

☐ No. Why?

() Yes. Why?

5) Please mark the corresponding option below

Criterion	Do you agree with this criterion?				
	Completely Disagree	Disagree	Neutral	Partly Agree	Completely Agree
I am satisfied with the level of climate change relief output within the organization					
Climate change is negatively impacting tourism.					
The organization is overly reliant upon the Ministry for guidance					
The government is allocating enough attention to climate change mitigation efforts.					
Climate change should be prioritized more highly by the Ministry.					

6) In your opinion, is the government as a whole effective in solving the climate change problem?

() No. Why?

() Yes. Why?

7) Do you have any recommendations to your organization as a whole to improve climate change relief efforts?

() No. Why?

() Yes. Please elaborate:

Thanks for your attention! I really appreciated your cooperation. As soon as possible I will disseminate the results of this research. If you need any additional information, please contact me at morrisobena@gmail.com.