

Botswana tourism operators' and policy makers' perceptions and responses to climate change

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In recent years, national newspapers have flagged headlines on tourism depicting the importance of the industry to the country. Some of the headlines, which put Botswana in the spotlight, include the following:

- 'Botswana's tourism & hospitality ranks top in 2016' in *Weekendpost*, 24 January, 2017.
- 'Tourist arrivals surpass 2 million in 2016' in *Botswana Guardian*, 05 December 2016.
- 'Climate change a threat to tourism' in *Botswana Guardian*, 18 October, 2013.
- 'Botswana sets sights on rising tourism prospects' in *The Voice*, 25 November, 2016.
- 'Botswana top 5th country to visit in 2017' in *New York Times*, 04 January, 2017.

Indeed, Botswana is well endowed with natural capital, including historical and cultural attractions that provide the impetus for nature-based tourism. These outstanding assets are wildlife and wilderness attractions. The 2013 *Travel and Tourism Competitiveness* report provides Travel & Tourism (T&T) indicators that offer a measure of T&T activities in Botswana. The following indicators are highlighted: international tourist arrivals reached 2,145,100 in 2010; in the same year, international tourism receipts earned from expenditures made by visitors from abroad on lodging, food and drinks, fuel, transport in the country, entertainment, and shopping amounted to USD 218, 000, 000. The industry contributed 3.3% directly to total Gross Domestic Product (GDP) as of 2014, and it is envisaged that this will grow by 5.2% annually by 2025. This, according to the World Travel & Tourism Council (2015), is attributed to economic activity by industries such as hotels and travel agents, and passenger transportation services such as airlines but excluding commuter services. In 2007, the industry contributed 4,200 jobs to total employment (Department of Tourism (DoT), 2010) and 8,000 in 2012 (World Economic Forum, 2013).

The Okavango Delta and the Chobe National Park situated in the northern part of the country are the most popular attractions in terms of visitor numbers and economic revenue especially for leisure tourism. Some areas like the Kgalagadi District have attractions, which though

still underdeveloped, have great potential especially those in Tshabong area. An abundance of wildlife and desert tourism landscapes is found in the area.

Without any doubt, we are all living witnesses of a time when Botswana's tourism industry is experiencing a boom. Nonetheless, we are at the same time witnessing an era in which climate change has become a topical issue. It is indeed a period when the effects of this global phenomenon have been unprecedented on various economic sectors including tourism. While it is acknowledged that the vulnerability of nature-based tourism to climate change could be far reaching, any threats to the natural capital that sustains the industry must be curbed without delay. It should be emphasised that climate change cannot be ignored because of its influences on the economic viability of tourist destinations and activities and tourist behavior, and its ramifications for the entire tourism system. Sub-Saharan Africa is already experiencing ecosystem changes in terms of type, physiological makeup and species distribution. For example, studies have revealed that tropical coastal forests are likely to expand by 150% by 2050, negatively affecting marshes, grasslands and mangrove swamps, which would be at the demise of water animals, such as hippos and crocodiles, and grassland ungulates, such as the zebra, the reed buck and the waterbuck. Further studies indicate that the grassland biome is the most threatened biome in South Africa owing to possible encroachment by woody vegetation as a result of increased temperatures and carbon dioxide emissions. With regard to savannah ecosystems, research has shown that warmer climates would lead to a decrease in river flow due to less rainfall; increased evaporation and less run off into catchments affecting well known tourist destinations such as the Etosha Pan of Namibia and the Okavango Delta in Botswana. The 2050 scenarios depict that while rainfall is likely to decrease by 15%, evaporation is likely to increase by 25% while runoff is likely to decrease by 40% in this eco-zone. Going by these predictions, southern Africa alone stands to lose specific nature-based tourism attractions such as Okavango ecosystems as a result of increased global warming and increased aridity.

Even with the observed and anticipated effects and impacts, some schools of thought have contended with the association of tourism and climate change. One major reason advanced is that the discussions are not conducive to the interests of tourism sustainability (Weaver, 2011). However, from Botswana's development context, there is no basis to associate with this school of thought, bearing in mind the significant contribution that the nature-based tourism has had on the country's economy. Within the last few years, Botswana has assumed the status of an upper middle-income country due to its rapid economic growth. Even though this success story is mainly attributed to minerals, most especially diamonds, a significant portion of the gains accrues from tourism industry, which is the country's second revenue earner. However, the sector is currently among the economic sectors least prepared for the risks and opportunities posed by climate change; it is only now developing the capacity to advance knowledge necessary to inform business, communities and government about the issues and potential ways forward. This could be one of the reasons why we have some dissenting voices on the importance of tourism-climate change nexus. I believe the PhD research which I undertook and other recent studies on the subject will enable us to appreciate the enormity of the problem. Nature-based tourism industry is climate-dependent because it is significantly influenced by climate related events.

Specifically, the doctoral research determined the perceived possible impacts of climate change on tourism operations in two ecologically distinct areas of Botswana with a view to identifying the resultant policy implications. There is a growing interest and awareness of the importance of climate change in tourism and related policy needs. This is well recognised both by the industry and by policymakers. Decision makers need to know and understand the problems and the response options available to them. Proactive investment in response measures by affected stakeholders such as tourism operators and policy makers depend on how they perceive the 'problem'. In a bid to thoroughly investigate the problem, the research answered the following fundamental questions:

1. To what extent can the tourism sector be regarded as vulnerable to estimated changes in climate?
2. How do tourism operators and policy makers perceive the tourism–climate change nexus?
3. How have the perceptions of policy makers and tourism operators influenced their preparedness and responses to climate change?
4. What are the implications of their reaction to climate change on policy needs and constraints?

The research was conducted in two study areas, namely Maun and Tshabong communities that have distinct environmental features and tourism products. The difference in the physical state of the two areas could to a large extent be attributed to the prevailing climatic conditions of the sites. For instance, Maun is located in the wetlands of Ngamiland District in northern Botswana while Tshabong is situated in the Kalahari Desert (Kgalagadi South District) in south-western Botswana. The local conditions of these contrasting ecosystems have a bearing on the extent of their vulnerability. That is, spatial climatic heterogeneity determines the impact of climate change since climatic variables like temperature and precipitation have unique, spatial and temporal signatures. Climate change adaptation policy formulation should take cognisance of this reality. Thus, the response measures adopted will differ from one area to the other.

The Driver-Pressure-State-Impact-Response (DPSIR) theoretical framework was used in the study. The DPSIR is an extension of the Pressure State Response (PSR) model that takes the stance that anthropogenic activities, which affect the environment, in turn cause humans to control the pressures thereof. The main cause of climate change is the greenhouse gas (GHG) emissions emanating from anthropogenic activities which end up adversely altering the natural environment and capital pivotal to nature-based tourism. The affected stakeholders are then obligated to devise means to alleviate the pressures resulting from the adverse impacts. The DPSIR framework thus facilitates the identification of vulnerability indicators for effective adaptation policies. This is achieved by addressing pertinent questions related to the cause, nature and solution to the problem. The problem being addressed by the PhD study was therefore that of the seemingly troubled future of nature-based tourism and its sustainability in Botswana as a result of, among others, climate change. The study provided insights of the source and nature of the problem with regard to the tourism–climate nexus in the context of Botswana. The climate

change policy measures of adaptation and mitigation formed the basis for possible solutions. The approach entailed in-depth interviews of purposefully selected interviewees to solicit relevant research information. The resultant data was analysed qualitatively using a simplified codes-to-assertions theory model for qualitative inquiry adopted from Saldaña (2016).

The doctoral thesis revealed that there were four main factors that influenced the perceptions and responses to climate change by Botswana tourism operators and policy makers. These factors included:

1. Type of tourism activities offered and their geographic location.
2. Information available on the subject matter.
3. The futuristic nature of the consequences of climate change.
4. Adaptive capacity.

The perceptions of tourism operators in the two study areas of Maun in the wetlands of the Okavango Delta and Tshabong in the drylands of the Kalahari with regard to the impacts of climate change differed. This was not surprising given the geographical differences between the two areas and the prevailing tourism activities in these areas. However, the operators in both areas were not proactive in institutionalising adaptations measures to curb the possible impacts of climate change. Lack of adaptive capacity and the belief that the consequences affecting their operations would only occur in the future may have influenced this stance. The effects of global environment change, including climate change, take time to manifest and may not be evidently obvious to relevant stakeholders. This may explain the somewhat 'carefree' attitude to climate change by both tourism operators and policy makers. It should, however, be noted that anthropogenic climate change is already here and therefore should not be perceived as a future phenomenon. The policy makers also perceived limited information and uncertainty as constraints to appropriate responses to climate change. Indeed, studies have revealed that IPCC's computer climate models have not demonstrated a high level of accuracy so far. Hence, among others, evidence based warming should be predicated on observations as well. The sector is vulnerable by virtue of its main natural capital base. Overall, changes in climatic variables, changes in the physical environment and ecosystems, threats to livelihoods and socioeconomic issues, and weaknesses in governance structures depict the level of vulnerability of the tourism industry in Botswana.

Tourism is not only making newspaper headlines, but it is also topical in the boardrooms of policy makers as a corner stone for economic diversification. The dissertation defence came at an opportune time when the United Nations had declared 2017 as the International Year of Sustainable Tourism for Development. The aim was to promote a change in policies, business practices and consumer behaviour towards a more sustainable tourism sector that can contribute to Sustainable Development Goals.

In the end, this doctoral study made a clarion call to decision-makers and the tourism industry to urgently take action against climate change. The monitoring of climatic suitability for nature-based tourism cannot be overemphasised given the increasing temperatures and erratic precipitation trends. There is therefore a need for increased well packaged information on the subject in order to raise awareness among the affected stakeholders. Hopefully this will over-

time trigger proactive responses. Just imagine a scenario, as a tourist, in which you are no longer able to enjoy game drives, traditional canoe rides, boat cruises, safari walks, bird watching, elephant back safari, horse riding, photographic safari and many other nature-based tourism activities. From the standpoint of the people of Botswana (of which I am a part), that would mean insufficient funds to build roads, hospitals, schools and provision of the basic needs of life.

The dissertation is available at: <https://wiki oulu.fi/pages/viewpage.action?pageId=28086119>

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