


Nature-Based Tourism and Climate Change: The Risk Perceptions of Industry Stakeholders in the Waterberg, South Africa

Wayde R. Pandey* 

Unit for Environmental Sciences and Management, Disaster Risk Science Research Group, North-West University, Potchefstroom, South Africa, Email, 44696744@nwu.ac.za

Christian M. Rogerson 

School of Tourism & Hospitality, College of Business and Economics, University of Johannesburg, Johannesburg, South Africa, Email, chrismr@uj.ac.za

**Corresponding Author*

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Abstract

Nature-based tourism is highly vulnerable to the ramifications of advancing climate change. This paper seeks to extend an energetic African literature around climate change and nature-based tourism. The aim is to investigate the risk perceptions of tourism industry stakeholders in the Waterberg region of Limpopo province. The results are unpacked from 32 qualitative semi-structured interviews conducted in this area. The research findings concern issues of industry stakeholder awareness of climate change, the risk perceptions and adaptive responses undertaken by Waterberg nature-based tourism sector stakeholders. A major conclusion is to pinpoint the disconnect between the climate change threats which are projected to be facing local tourism stakeholders and the risk perceptions as expressed in the interviews conducted with these tourism stakeholders.

Keywords: Climate change; nature-based tourism; risk perceptions; Waterberg; South Africa

Introduction

Climate change potentially has highly significant impacts for the global tourism industry through triggering changes in tourism products, comfort levels and geographical or seasonal changes in attractions. Climate change can modify the competitiveness and attractiveness of a tourism destination or activity as weather patterns assume a pivotal role in tourist travel decision-making. Nature-based tourism is recognised as one of the most vulnerable segments of tourism to the ramifications of climate change because of the impacts of climate change on the natural environment and key elements of biodiversity (Coldrey & Turpie, 2020; Fredman & Tyrvaainen, 2010; Saarinen et al., 2013; Sisneros-Kidd et al., 2019). Climate influences the essential distribution of natural resources that underpin nature-based tourism and the rhythm of tourism arrivals (Mushawemhuka et al., 2021, 2022). A range of human actions underpinning climate change have served to change nature-based interactions and in so doing, to impact key levels of biological diversity in terms of species extinctions and forced migrations (Gössling, 2002). For Weber et al. (2019: 1321) climate change is essentially “one of the greatest threats to the maintenance of the ecological integrity”.

According to Ali et al. (2022: 148) climate change and tourism-related scientific research “increased significantly at the end of the 1990s”. Over the past two decades there has been a surge in literature and debates around the nexus of tourism and climate change (Becken, 2013; Bhandari et al., 2016; Nacipucha et al., 2017; Pandey, 2017; Pandey & Rogerson, 2019, 2021a; Rogerson, 2016; Saarinen et al., 2022; Scott & Becken, 2010; Shakeela & Becken,

2015; Tervo-Kankare, 2019). Key research themes include adaptation to climate change threats, stakeholder perception research and the consequences of climate change for tourism destinations, local communities and livelihoods. As nature-based tourism has been identified both as fast-expanding as well as among the most vulnerable segments of the global tourism industry to climate change several investigations have focused on its ramifications and industry responses (Ali et al., 2022; Coldrey & Turpie, 2020; Dube & Nhamo, 2020; Hambira, 2017; Mushawemhuka et al., 2018; Mushawemhuka, 2021; Mushawemhuka et al., 2021, 2022; Pandey & Rogerson, 2021b; Saarinen et al., 2013; Sibitane et al., 2022; Tervo-Kankare et al., 2018). In the broader international scholarship the article contributes to an expanding literature which probes the perceptions of tourism industry stakeholders around the challenge of climate change (Becken et al., 2013; Dincă et al., 2014; Hambira & Saarinen, 2015; Kaján & Saarinen, 2013; Pandey, 2019; Ruhanen & Shakeela, 2013; Saarinen et al., 2022; Scott, 2011; Tapsuwan & Rongrongmuang, 2015). A common finding in recent scholarship is that a ‘disconnect’ exists between climate policy environments and the perceptions as well as the actions which are pursued by several key tourism industry stakeholders (Hambira & Saarinen, 2015; Hambira et al., 2013; Mushawemhuka et al., 2018; Ruhanen & Shakeela, 2013; Saarinen et al., 2012; Scott & Becken, 2010; Tervo-Kankare et al., 2018).

This paper seeks to extend an energetic African literature around climate change and nature-based tourism. Of note in the context of Africa’s important economy of nature-based tourism is the strong representation by tourism geographers in advancing the debates and research frontiers concerning climate change and nature-based tourism (Rogerson & Visser, 2020; Saarinen et al., 2022). Attention here is centred on Southern Africa’s bush-based natural environments, what Mushawemhuka et al. (2018: 118) describe elsewhere as “a core region of the global tourism economy that is experiencing the ramifications of climate change”. The empirical focus is the Waterberg District Municipality in South Africa’s Limpopo province. Within the context of nature-tourism and climate change research in South Africa, the Waterberg tourism economy presents an instructive case study. First, its location and unique resources include a recognised UNESCO Biosphere Reserve which offers an opportunity to examine the issue of climate change from the perspective of stakeholders who are based in a location where nature tourism is a significant economic contributor to local economic development. Second, in surveys conducted with South African national stakeholders of the most vulnerable spaces to climate change, Waterberg was isolated as a destination which faces some of the highest levels of climate change related-risk and exposure to extreme events in Southern Africa (Pandey & Rogerson, 2020). Further, in terms of the market segments of the South African tourism economy which were viewed most ‘at risk’ of the impacts of advancing climate change, nature-based tourism was strongly highlighted (Pandey & Rogerson, 2018).

The analysis and presentation is structured as follows. The next section provides a background on the study region and discusses the research methodology. The subsequent section moves to an examination of the results from 32 qualitative interviews with Waterberg tourism stakeholders. The research findings discuss issues of industry stakeholder awareness of climate change, the risk perceptions and adaptive responses undertaken by a range of the Waterberg’s nature-based tourism sector stakeholders.

The Waterberg case study region and methodology

The Waterberg District Municipality is situated in Limpopo Province (Figure 1). The municipality has an estimated population of 745 758 people with 211 471 households. The Waterberg’s physical geography and unique climate, geology, and sub-habitats played a crucial role in central areas of the Waterberg district being declared a UNESCO Biosphere Reserve in 2001. The Waterberg covers an area of 44 913 km² within which the biosphere reserve

represents 14 500 km² and includes a combination of national parks, game farms and private reserves (Henning, 2006).

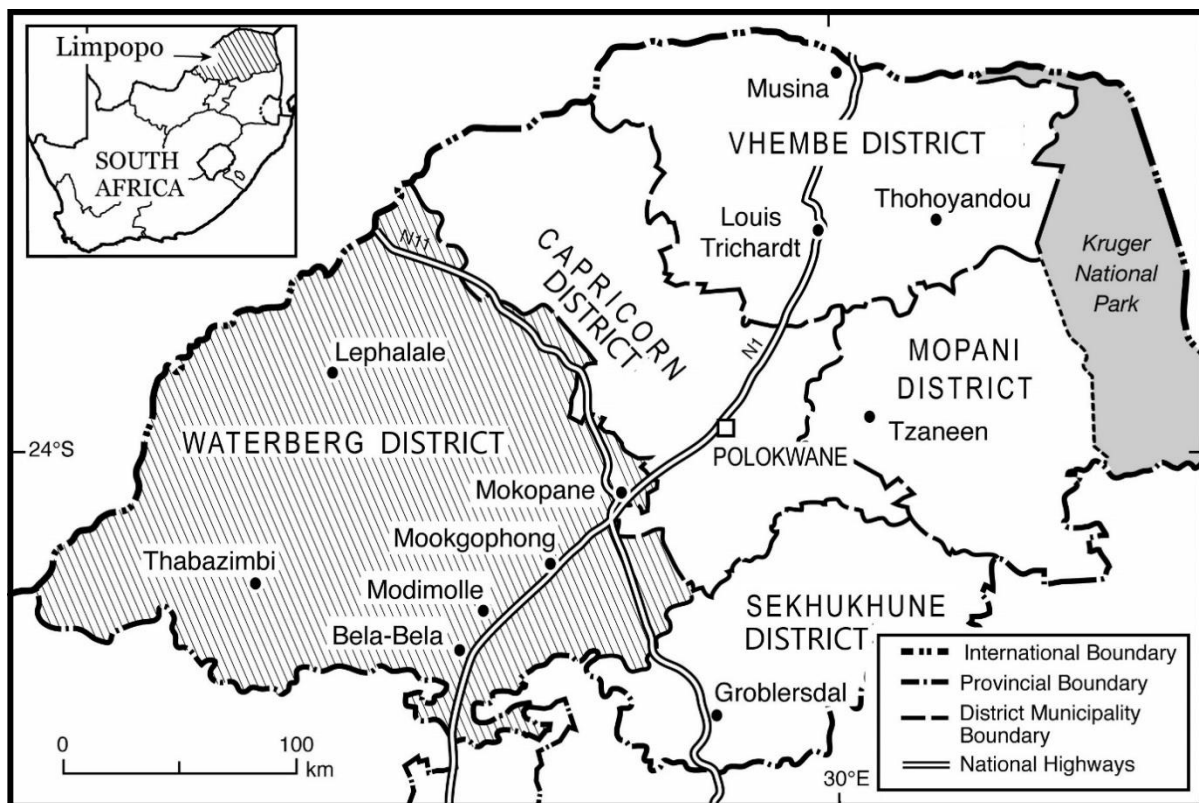


Figure 1: Limpopo province and the Waterberg district

Source: Authors

Over the past two decades the Waterberg has become established and grown as a significant eco-tourism destination in South Africa (Henning 2006; Rogerson & Rogerson, 2014). There exist a range of tourism providers which cluster around natural safari or 'bush' landscapes catering specifically to both domestic and international tourism markets. The area's accommodation spectrum includes hunting, safari and corporate lodges, holiday cottages, game farms, bush-based health and wellness spas, private game reserves, hotels, bush camps, farm-stays, holiday resorts, conference facilities, second homes, timeshare, and guesthouses. The local tourism economy represents an evolving tourism and leisure-based product experience with accommodation offerings which mostly have been established following South Africa's 1994 democratic transition. Waterberg as an ideal eco-destination tourism has expanded such that for the District Municipality the sector's importance matched that of agriculture and mining (de Klerk, 2004). As Hoogendoorn et al. (2018) observe the process of tourism development within the Waterberg has corresponded with widespread land use change, which reflects broader patterns of socio-economic and political change in South Africa. In the build-up to and following democratic transition a segment of local farm owners moved away from labour-intensive commercial crop and cattle farming. Nature-based tourism was identified as a potential alternative and a significant number of land owners converted commercial farms to game farms, a process referred to as 'rewilding'. Some land owners have completely rewilded all possible land for the use of nature-based tourism, others opted for a mixed use approach by converting a portion of land for rewilding whilst also retaining commercial crops or cattle. The local tourism economy is divided between a limited number of tourism-based operators and accommodation providers who focus almost exclusively on an international high paying

clientele and a large grouping of establishments that cater for domestic tourism, mainly from Gauteng province, South Africa's main economic hub. Tourism accommodation types such as hunting, second homes and other 'bush' or nature-based tourism services and accommodation types are popular among both international and domestic tourists; other market segments including corporate game lodges, holiday resorts, timeshare establishments, bed and breakfast establishments, wedding tourism, and conference based tourism in the Waterberg orient predominantly to the domestic market. Finally, there is an economy geared to high-end international clientele for small-scale, highly exclusive or 'boutique' bush or safari lodges which have been established to provide an alternative to popular bush destinations like the Kruger National Park.

Table 1. Climate change related impacts on the Limpopo province

Sector	Impacts Associated with Climate Change in the Limpopo Province
Water	<ul style="list-style-type: none"> • Decrease in summer rainfall • Low/High river flows are anticipated to decrease leading to water shortages • Increased evapotranspiration (potential evaporation of about 5% per 1°C) and decreased soil moisture • Reduced recharge of groundwater and falling water levels in boreholes • Flooding, contamination of available water and droughts
Agriculture	<ul style="list-style-type: none"> • Decreased productivity of food crops • Increased crop irrigation requirements due to increased temperature • Decreased soil moisture levels as a result in changed runoff patterns • Crops grown on marginal land will have to contend with land degradation and reduced soil productivity • Crop and livestock production could be adversely affected by changes in the distributions of diseases, pests and insects • High vulnerability of certain agricultural crops due to decreased water availability and increased temperature
Biodiversity	<ul style="list-style-type: none"> • Increased heat stress on plants, animals and humans • Changing ecosystems leading to species shifts and extinction • Increased alien vegetation and increased risk of wild fires
Social	<ul style="list-style-type: none"> • Food security • Health impacts will arise or worsen due to both climate stresses, and climate shocks • Damage of livelihoods

Source: EcoAfrica (2015)

The Limpopo province and the Waterberg are recognised as highly vulnerable to the impacts and implications of climate change. The extent and potential ramifications of climate change in Limpopo are captured on Table 1. In terms of both direct and indirect impacts of climate change on Limpopo and the Waterberg, it has been projected that both temperature and rainfall will be significantly affected. Under the current long-term projections the province of Limpopo and the Waterberg District Municipality appear set to see a significant reduction in the overall summer rainfall while isolated flooding events are also set to impact on the province. Such events have far-reaching consequences for the amounts of water available for key sectors like agriculture, mining and tourism. These climate change-induced impacts will be further enhanced by increasing temperatures that will lead to increased evaporation and decrease soil moisture levels. The outcome has severe implications for tourism and agriculture-based activities that are water dependent. The impact of climate change on the natural environment and the cycles closely associated with it, will also see the risk of fires increasing substantially and place an overall greater amount of stress on plants, animals and the populations that are dependent on the environment. Threats exist therefore from climate change to the environmental base upon which tourism in Limpopo is anchored. The objective of the research was to analyse the climate change perceptions of key tourism stakeholders in the Waterberg,

using qualitative interviews which were conducted with a cross-section of nature-based tourism stakeholders situated within the Waterberg’s UNESCO biosphere boundary.

In terms of methods the 32 qualitative interviews that were undertaken with key local stakeholders in the Waterberg tourism economy concerned their risk perceptions and adaptive responses in relation to climate change. The interviews were conducted with a cross-section of managers or owners of tourism businesses. Interview respondents were purposively sampled in order to capture the array of different kinds of accommodation service establishments and tourism services in the area. Safari lodges, game farms, bed and breakfast establishments, guest houses, hotels, time-shares, holiday resorts and restaurants were included. The largest number of interviews were with owners or managers of safari lodges. The details of the respondents are provided in Table 2. Interviews were conducted in-person at the place of work of respondents. Length of interviews varied with an average duration of approximately 30 minutes. Interviews were manually coded thematically for analysis in terms of several overlapping themes.

Table 2. Details of the 32 respondents interviewed

Respondent's Role	Business Type
Business Owner	Holiday Cottages (W2)
	Holiday Cottages (W5)
	Holiday Cottages (W12)
	Restaurant And Zoo (W7)
	Guesthouse (W10)
	Guesthouse (W19)
	Guesthouse (W28)
	Game Farm (W13)
	Game Farm (W17)
	Safari Lodge (W14)
	Safari Lodge (W20)
	Safari Lodge (W21)
	Safari Lodge (W25)
	Second Home Private Game Reserve (W30)
	Conference Centre (W32)
	General Manager
Safari Lodge (W3)	
Safari Lodge (W4)	
Safari Lodge (W8)	
Safari Lodge (W9)	
Safari Lodge (W15)	
Safari Lodge (W20)	
Safari Lodge (W29)	
Safari Lodge (W31)	
Private Game Reserve (W6)	
Private Game Reserve (W11)	
Private Game Reserve (W22)	
Bush Camp (W16)	
Corporate Safari Lodge (W18)	
Timeshare Based Holiday Resort (W24)	
Assistant Manager	Holiday Resort (W26)
	Hotel & Spa (W27)
	Safari Lodge (W23)

Source: Authors

The research sought to investigate stakeholders’ awareness of climate change and perceptions of the potential risks that climate change might pose to local tourism. Next the study explored the relative prioritisation of climate change as compared to other business risks that were impacting the local economy as perceived by respondents. Finally, the interviews probed the extent of greening actions currently either being undertaken or planned in relation to climate change adaptation or mitigation.

Findings

Awareness of climate change and risks

At the outset of the interviews the first questions sought to assess the extent to which tourism stakeholders in the Waterberg were aware of the issue of climate change. All 32 stakeholders interviewed acknowledged that they had heard of climate change from a variety of sources which included television, radio, newspaper articles, and in some instances through community forums that focused on conservation. This said, there was disclosed a considerable amount of variation in the extent to which tourism stakeholders were able to articulate the phenomenon, with the most common explanation relating to the fact that “the earth is getting hotter” (W31).

In analysing the risk perceptions which tourism stakeholders in the Waterberg associate with climate change two distinct groups of findings are observable. The first relates to a group of perceptions that disclosed a position in which climate change was not seen as having any significant impact on tourism and tourism businesses in the Waterberg. This group ranged from a position in which climate change was described as “nothing more than an ‘American’ hoax created to spread fear” (W20), to a more moderate stance that viewed climate change as part of the earth’s natural cycles, and as a result “Things are very similar to the way they have always been” (W29). In such a context one interviewee noted that “Having recorded the rainfall for the last 10 years, there is no substantial change. At best, the seasons might shift every now and then”, and as a result climate change could not be a real phenomenon able to impact the Waterberg (W18). Another respondent noted that climate change would not likely have very much impact in the area given that “temperatures in the Waterberg are already fairly extreme. We face anything between -8°C and 42°C ” (W3). In unpacking such risk perceptions one stakeholder reasoned that even in the unlikely event that climate change did affect South Africa “Waterberg has its own micro-climate as opposed to the surrounding areas”, and as a result would be the “best place to be given the good drainage and no other major threats” (W28). Some stakeholders even suggested that climate change may have a largely positive influence on the winter tourist season if it was to impact on the Waterberg, as “an increase in temperature would work in our favour” (W30). Overall, however, the general position adopted by this first group is summed up in the statement that in the long run “Climate change probably wouldn’t affect the region that much” (W11).

For the second larger segment of tourism stakeholders, climate change was identified as an issue of concern which might negatively affect local tourism and their businesses. For stakeholders who felt climate change was a significant issue of concern the view was expressed that “Global warming is a reality that we are feeling now” (W31). It was observed that climate change impacts in the Waterberg were “affecting carrying capacity” and as “definitely impacting on hunting and other wildlife industries” (W9). Calls were sounded “to take preventative measures” (W15). Another stakeholder opined that “You just have to look at how international clients stopped coming (to the Waterberg) when the Ebola outbreak in West Africa took place to see how easily climate change could impact on South African tourism” (W22). In depicting the urgency of the climate change issue, however, other stakeholders considered that to date, “there has not been a big enough change yet to worry” (W14). Likewise, another respondent noted: “there have been changing temperatures but nothing has affected the business” (W18). Further it was suggested, “In the long-term it (climate change) could impact on us, but this stuff doesn’t happen overnight” (W5). In terms of such change it was perceived that “If it (climate change) impacts the Waterberg... the transition will happen very slowly” (W16), and in the meantime “people from the city will still want to be in the bush” (W26). At least one interviewee explained that in the event of short-term temperatures increase “most guests from countries in Europe are happy to experience the climate in South Africa. It’s all part of the charm of the bushveld” (W10) because, as pointed out, “the Europeans we have visit

love the heat” (W28). One individual stakeholder went to great pains to point out that while "in the long-term climate change may have an impact on tourism in the short-term it could drive up visitor numbers the same way that the rhino going extinct has in terms of last chance tourism” (W8).

Table 3 Perceived risks associated with weather and climate in the Waterberg

Perceived Type of Risk	No. Respondents	% Respondents
Fire	21	65.6
Floods	16	50.0
Drought	12	37.5
Lightning	5	15.6
Hail	1	3.0
No impact	3	9.3
Unsure/Don't Know	2	6.2

Source: Authors

Note: Some respondents indicated more than one perceived risk.

In seeking to probe deeper into the risk perceptions of the 32 interviewees, stakeholders were asked to reflect on whether there were any particular weather or climate related impacts or hazards that would be considered to present a risk to their tourism enterprise. The findings in Table 3 show that the hazards of fire, flooding and drought were ranked as the three most significant risks facing local tourism stakeholders. In terms of fire the majority of interviewees identified it as “a big risk every winter” (W22) with one stakeholder describing it as “our winter sport” (W9). The view was articulated that “fire is worse than anything” (W25) and whilst “flooding is harder to prepare for, fire is the biggest worry” (W13). Over the course of the interviews it was revealed that several of those who declared that they did not believe in climate change acknowledged they had been personally impacted or suffered fire losses. In one case “fire almost burned down half the farm” (W21) and in terms of a camping business: “The campsite is closed in winter because of fire danger” (W5). Nevertheless, despite the widespread acknowledgement of fire as “a very large risk” (W21), only one interviewee ever raised the issue that as a result of climate change “higher temperatures will mean greater fire risk” (W4). The danger of lightning strikes also was linked to concerns about fire hazards.

Flooding risk was ranked as the second greatest concern for stakeholders. Half of all interviewees conceded they had personally been affected by flooding in the Waterberg. The impacts included “major infrastructure damage, flooded rooms, and damaged air conditioning systems” (W1); “roads being washed away” (W3); “bridges washed away” (W4); and, “no water or power” (W9) and repairs sometimes “took as long as eight months” (W7). It was observed that flood events “saw business really affected” for many stakeholders (W13) and at least in one case required the lodge-owner to “hire a helicopter to fly people (guests) out” (W29). In dealing with flood as a challenge, one stakeholder observed that in the Waterberg “You clean up and contact your insurance... In the case of the floods, you take off your shoes, get a bucket and start cleaning” (W31). Likewise, another respondent recollected that “With the flooding in early 2014, there were things that the insurance didn't pay out on, like the loss of income when the chalets were closed for a month and a half” (W2). In a similar pattern to what was observed with stakeholder perceptions focussing on fire risk in discussing the impacts and implications associated with climate change only three interviewees identified the dangers of flooding and the potential for flooding events to become increasingly intensified and frequent (W1, W19, W25).

The threat of drought was pinpointed by 12 stakeholders or 37.5% of the sample. For an operator of a private game reserve it was observed “drought would affect your core business” (W6). Another nature tourism stakeholder noted: “A decrease in the availability of

water changes everything. If we have no water, there is no farm. Everything else you can work around” (W5). Other respondents recognised that “Game-orientated activities might be affected by climate change because people aren’t gonna come to where they can’t see game” (W8). Game farmers reflected that “it all depends on the animals” (W17) and given the manner in which “game breeding is the main part of the business, and anything that impacts on game breeding would be a massive issue” (W14). For another interviewee it was explained that for the Waterberg, “Water control is key. Animal losses to drought would be huge. As it is, sometimes in the middle of winter you already can’t even buy food (animal feed)” (W31). For some long-established members of the local community and pioneers in local tourism, the issue of vulnerability to drought in part lay in the manner in which tourism development impacted significantly in terms of changing the physical size and layout of land in the area (W2, W3, W5, W7, W20). At the beginning of tourism development in the area “no one even knew where the Waterberg was” (W20). During the conversion process from commercial crop and cattle farming to game based farming the size of farms was reduced. In establishing nature-based tourism in the Waterberg, “A combination of hunting and normal tourism just completely outstripped the value of cattle” (W20). This effectively saw 'new farmers' or what some have come to call 'weekend farmers' buying small plots of land for their personal enjoyment as second home owners, or more frequently as potential tourism businesses (W5).

In attempting to explain the enormity of the transition that the Waterberg experienced one interviewee highlighted that “in the 1960s it was estimated that the Waterberg contained a total of roughly six hundred thousand heads of game, today it is estimated that the number has grown to more than twenty four million” (W2). Another respondent explained, “what many people don’t realise is that in the Waterberg the main type of vegetation is ‘sourveld’ which is not very nutritious and doesn’t support a large number of animals, which is why the commercial cattle farms in the area had to be so large” (W18). As a result game orientated tourism businesses in the Waterberg face a significant conundrum, in order to attract potential tourists “people want to see a lot of animals but there actually isn’t enough natural vegetation to support these numbers, so for the sake of people’s enjoyment and hunting most people overstock their farms” (W30). The outcome is that a significant proportion of game-based tourism businesses in the Waterberg are heavily dependent on supplementary feeds to support the amount of game they currently own. Indeed, whilst drought was ranked as less of a concern than fire or flood based risk its risk was aligned to climate change by many respondents. “People need to plan for the animals”, highlighted one stakeholder (W26), while another noted that “For people with too many animals it (climate change) could be an issue” (W32). Another interviewee detailed the threat: “Drought will kill a lot of animals, all the weak get killed off. The intensive farming that people have moved to will have much greater losses” (W7). Further, it was observed that because “Everything in the area is based around game. We would need water and feed which would cost a lot. It will affect the animals, the bush, everything” (W30).

The Waterberg interviews indicate variation in the extent to which weather or general environmental conditions are regarded as an important factor in a nature-based tourism area. In analysing the perceptions of the 32 tourism stakeholders several trends emerge. First, the type of tourism product offering influences tourism stakeholder perspectives about weather. Those stakeholders offering short-term highly specific nature-based activities like a ‘safari’ or bush-based wedding services view general short-term atmospheric conditions as highly important along with other tourism operators which offer a more generalised ‘bush experience’. As was explained “our biggest source of income is weddings, we can’t afford rain... the tented areas and braai areas depend heavily on the weather” (W8); similarly “we do a lot of garden weddings, so when it rains these events are affected” (W25). Stakeholders identified two activities which were especially susceptible to weather, “weddings and camping” (W21). The

impact of weather on the day-to-day services and experience offered by bush or safari tourism providers was viewed variously by stakeholders as follows: “the outdoor experience is key” (W11), “the rain always makes thing difficult” (W2), “You can’t do game drives in the rain” (W4), and “people don’t want to go out when it is raining” (W29). For other tourism businesses that provided short-term leisure based products and experiences the position was “if it’s cold and windy people simply won’t visit” (W7).

For the group of nature-based tourism-dependent firms offering longer experiences of more than one to two days at a time, immediate weather or general atmospheric conditions appear to present less of a concern. It was stated that: “While we are not heavily dependent, weather does affect people’s enjoyment... And, while peak season is booked long before the New Year, rain and overcast conditions does interfere with what people want. People also use a lot more power when the weather is bad” (W13). For others it was a matter that: “The typical weather leads to quick thunder showers” (W18) or “We seldom have that rain that lasts for days, so most of the game viewing and horse riding is unaffected” (W20). For the upmarket mainly international hunters: “the weather does play a role in people’s enjoyment, but in saying that hunters are expected to deal with it and adapt, they’ve paid enough to keep going” (W17). Some commented simply that: “We mostly just cater to hunters, the customers here are not really your typical ‘leisure’ tourists” (W19).

Business risk priorities and adaptation

In examining climate change as a current or future priority for the Waterberg tourism economy respondents were asked to identify their major challenges for their businesses. The results are presented on Figure 2.

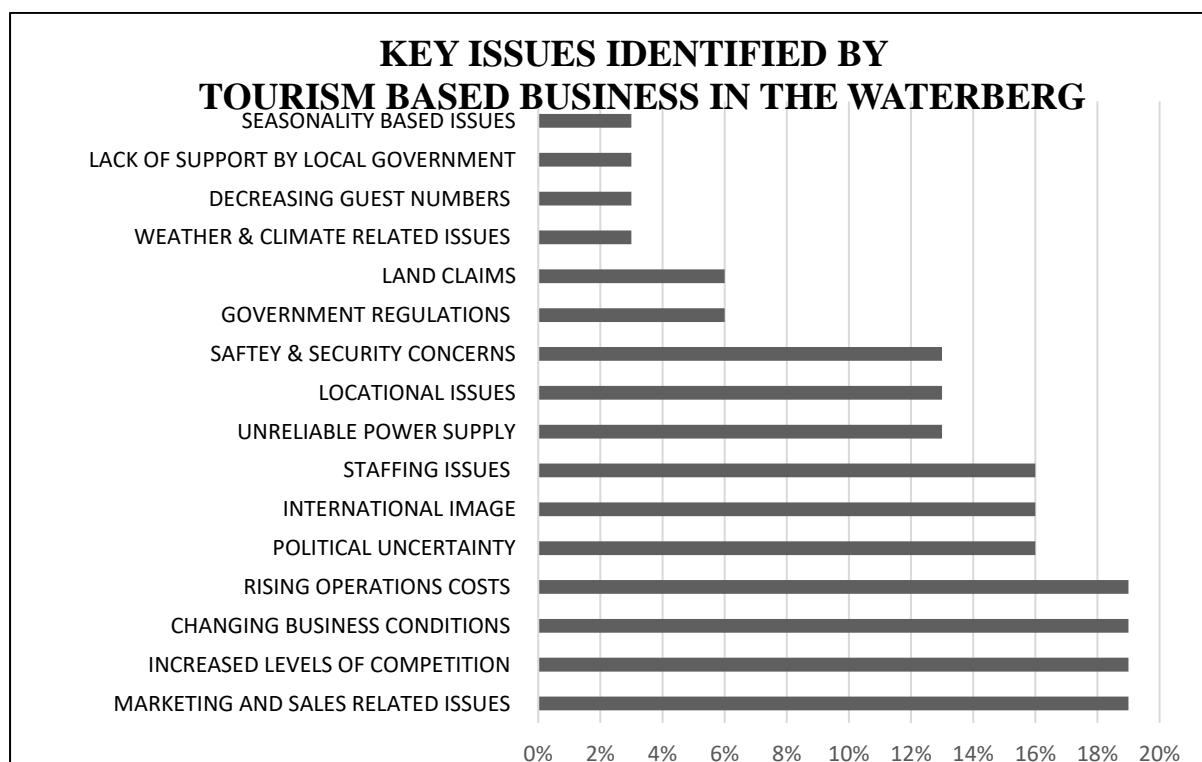


Figure 2. Key issues and priorities of tourism stakeholders in the Waterberg District Municipality

Source: Authors

Overall 16 leading topics of concern were pinpointed. The four most prominent were: concerns about improving marketing strategies and consumer awareness campaigns in order to increase

sales or tourist volumes; increasing levels of competition driven by the development and establishment of new tourism businesses in the Waterberg; struggles in coming to terms with changing business conditions as the district economy transitioned from a base of commercial crop and cattle farming to tourism; and, rising operational costs of business especially for food, fuel, electricity and other essential goods. The challenges around marketing were widely aired by respondents: “marketing is a major challenge” (W12) and “Getting known and building up a client base”. For many businesses the core challenge was bookings for the mid-week period: “The weekends are full but the mid-week period is an issue. Our marketing focus is to fill this period” (W13). This point was reinforced by respondents that: “Marketing and sales are a major focus” (W27) and that many of the area’s “current challenges revolve around growing bed-nights” (W29). Increasing competition from the expanding number of tourism businesses in the Waterberg was another concern: “competition in the past for our target market was mostly from Kenya. Today the competition is local” (W20). In similar responses the concern was “increased competition across the region” (W5) and “Competition has increased. Other conference venues have accommodation on site. We don’t” (W32).

Intensified competition created a situation in which improved marketing and product differentiation became critical for business success (or survival). Indeed, it was made clear that “In the last five years the financial side of the business is much tighter” (W27). The concern about increased levels of competition as part of the changing business conditions was expressed in particular by long-established businesses: “Business in the Waterberg has changed. The old generation stopped farming as the physical climate changed, the political climate changed, and prices of crops changed. The farms have gotten smaller as people have moved from crops and cattle to game farming. The target market has changed, Local hunters are out. The focus is now is on international hunters” (W7). Several respondents reiterated the push for international markets: typically it was stated “the business is currently moving to attract mostly international clients as locals are seen to create a lot of problems” (W17). In respect of rising operating costs as a major source of concern, numerous interviewees highlighted the difficulties associated with escalating costs. In particular, the growing costs of power, fuel and food were identified as of concern especially for pricing to domestic consumers as opposed to international markets. Indeed, those tourism businesses oriented to the domestic market focus were more concerned with rising costs than those geared to international markets. Typically, a business owner with a predominant domestic focus stressed that “economic challenges like fuel price increases have seen a lot of people not want to travel” (W31).

Political uncertainties and South Africa’s worsening international image for high-spend tourists were other issues of serious concern. Common expressions were as follows: “Tourism is a very sensitive business. Ebola and politics make it very difficult for marketing” (W15), “Political uncertainty and general image of the country does affect South African tourism” and “The (South African) Rand is very volatile. Crime and poor international image are our biggest concern” (W3). Further challenges for local tourism businesses in Waterberg surrounded the recruitment and retention of skilled staff. Typically, it was pointed out that “Labour challenges are a major issue” (W21) and most especially when searching for “qualified management and support staff” (W10). Business operators stated: “Finding and training capable staff are a major challenge...especially when running a boutique lodge where everything needs to be perfect” (W11). The required hospitality skills were in short supply in the Waterberg region at the time of the transition to tourism. One owner and manager explained that when the property was converted from commercial farming to a tourism based game farm it was necessary to retrain the existing staff: “It took a lot of time and investment for our staff to fully understand and embrace the unique requirements associated with tourism and hospitality” (W20).

As shown on Figure 2 several other issues were flagged, including weather and climate. Unreliable power supply impacted the operations of smaller businesses that did not have solar power infrastructure or generators. Safety and security issues were raised and especially for businesses within close proximity to an informal settlement. Several interviewees described the challenge of having solar power equipment regularly stolen and that “We’ve had to work very hard in improving our security after having two break-ins when guests were robbed, and which can do a lot of damage to your reputation” (W25). Land claims, government red tape in securing a liquor license, electricity load-shedding were also regularly on the agenda of immediate concern to tourism business operators. The impacts of land claims were detailed: “Property rights and land claims are a big concern. They stop you from investing further in the business or spending money and other resources on any unnecessary maintenance or expansion as tomorrow I might be thrown off my property and someone else would benefit from all my hard work and effort” (W20). Lack of support from local government in addressing infrastructural shortcomings was a further matter. As a whole, therefore, the issue of climate change was of only minor concern for Waterberg tourism business owners given the immediate multiple challenges that they confronted on a daily basis.

In turning attention to the extent to which environmentally friendly or ‘green’ based actions are undertaken by tourism stakeholders it was striking that only one of the 32 interviewed indicated that their business had significantly invested in the use of environmentally friendly or green technologies to reach the point of being completely ‘off grid’. In seeking to explain reasons for slow take-up of environmentally friendly green technology and initiatives within the local tourism economy four key areas of concern emerged from the interviews. First, almost all respondents highlighted that “the main reason for not using those products is the cost!” (W9), and that green technology was “a very expensive game to get into” (W31). Other interviewees cautioned similarly that: “The costs are high and there are limitations on green-tech” (W16), “The biggest constraint is the cost of putting these things up. It’s ridiculous!” (W30) and “We’ve had discussions about putting in solar possibly in the future, but the cost is very high” (W22). Second, apart from the high costs attached to going green, a number of interviewees identified that in their opinion, “the industry is still very young” (W18). As one stakeholder contended: “you spend a small fortune on buying and installing these things, and you haven’t even started paying for it when a better, cheaper model comes out” (W7). Overall, for many tourism stakeholders a general perception attached to environmentally friendly products relates to concerns surrounding the manner in which “the technology is still very new” (W9). As a result there appeared concerns surrounding the unknown nature of such innovations and undertakings, as highlighted by one particular interviewee who questioned if solar panels were powerful enough “to plug a fridge into” (W21). For a segment of tourism stakeholders in the Waterberg green technology and environmentally friendly actions were simply “not worth the risk or investment” (W18).

Third, for numerous interviewees another significant barrier related directly to the manner in which, “there is not a lot of products available in the area” (W4). It was argued that “Using environmentally friendly products is not sustainable because long-term lasting products are not available”, as the Waterberg is located far from suppliers which inevitably leads to “maintenance issues where after-sales service is almost non-existent” (W29). Two stakeholders cited such an issue as the reason for no longer using the technology as a result of experiences in which having purchased a solar geyser, “it didn’t work with the house’s high pressure system” (W10), or that having gone through the expense of purchasing a solar panel “it was damaged during a storm and we never replaced it” (W1). Another respondent added “here in the Waterberg you struggle to get spare parts” (W24). The final area of concern specifically related to issues of crime in the Waterberg. It was explained that: “having struggled to pay to

put solar up, on top of it you also have to worry about it being stolen” (W7). Likewise, for another interviewee “We used to run our front gate on a solar panel and batteries, until we woke up one morning and the whole thing had been taken” and “After that we just never bothered again” (W30). Highlighting insurance as a means for off-setting potential theft issues it was noted “that the cost of insurance on top of the other costs to it (green technology) are not worth it” (W1). The stakeholders did point, however, to a range of environmentally-friendly actions that they pursued. These are summarised on Figure 3. The most common related to measures for recycling measures, use of eco-friendly detergents, the adoption of energy-efficient lighting, and the installation of solar geysers.

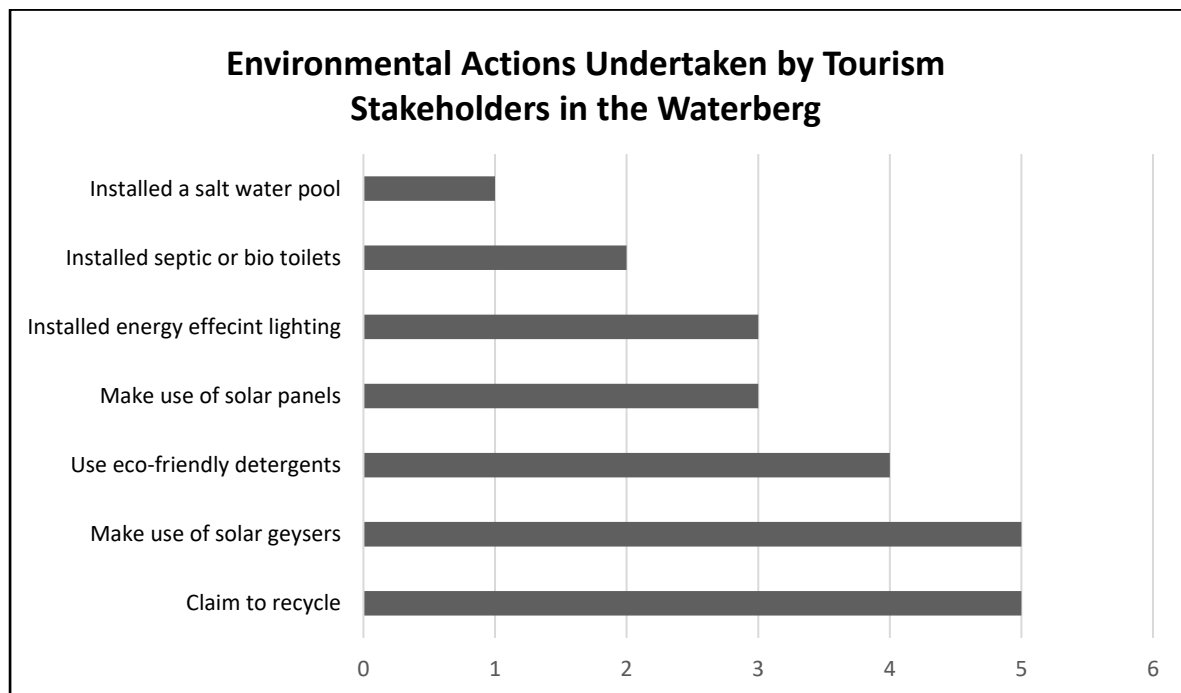


Figure 3. Environmentally-friendly Initiatives Undertaken by Tourism Stakeholders in the Waterberg
 Source: Authors

In terms of adaptation-based behaviour it must be appreciated that the Waterberg region represents a significant and challenging environment in which to operate a tourism business. As one stakeholder stated: “The distance from urban centres and municipal offices mean that people have had to become self-dependent. We do everything from grading our own roads to fire fighting and supplying our own power using a generator” (W4). The shortcomings of local government mean that for support the “community is very close” (W8). As highlighted by one stakeholder “In 2014 when the floods hit we were trapped on our farm for two weeks... The only way we survived was through friends sending fuel and food” (W9). As a key means of safety and communication, “The farm watch community portal provides community support as a radio channel” (W29). To survive “You have to be part of the community” (W25). Arguably, given the context in which rewilding has introduced new aspects of risk such as greater vulnerability to fire and flooding, the community has learned to better prepare to deal with such issues. A range of stakeholders attest that “In the beginning the Waterberg was not prepared to deal with it (fire). Today we are” (W11). Indeed, to the extent that having being exposed to the challenges and impacts relating to their increased fire exposure, “Fire is something that everyone prepares for” (W13). It was explained that “After half the farm burned 8 years ago we learned our lesson. Today we have clear fire lanes and fire breaks in place 10 m long. During the dry season we have fire equipment ready and serviced” (W25). Such actions

are in no way isolated: “The last time we had a fire, everyone came and helped fight the fire” (W30).

In further seeking to deal with their vulnerability several of the Waterberg’s most expensive lodges have effectively outsourced key aspects of their risk management by purchasing lodges within exclusive private game reserves. In doing so the game reserve’s management team itself assumes responsibility for the day-to-day running of the reserve including the management of risk. Lodge owners simply need to ensure that they comply with the rules and procedures put in place by the reserve’s management team and pay monthly levies. One lodge owner explained as follows: “Our job is just to ensure the lodge is safe, it is the reserve management team that deals with fires, floods or any other issues. Fortunately for us the lodge is insured” (W18). In an interview with one of the managers who oversee the functioning of one private game reserve, he described the situation as thus, “people pay a lot to be part of our reserve, and it’s our job to make sure that everything runs smoothly. We make sure the roads are maintained to deal with flooding, we deal with fire breaks and other reserve issues... This means that the lodges get to focus on running the lodge and not worry about anything else” (W6).

Conclusion

In a recent bibliometric analysis of international research and writing on climate change and nature-based tourism the extensive literature on Southern Africa was entirely overlooked (Ali et al., 2022). This paper draws attention to the neglected vibrant debates taking place in this region concerning the nexus of climate change and tourism. In the case of South Africa it investigated the perceptions of tourism industry stakeholders from a locality that is acknowledged to be highly vulnerable to the advance of climate change. The issue of climate change is an issue of critical concern for tourism stakeholders who derive their livelihood from nature, and specifically from nature-based tourism (Tervo-Kankare, 2019). The impacts and implications associated with climate change can critically undermine the environmental base upon which nature tourism rests. In the Southern African context, such risk points to “the need to understand the level of climate change knowledge and perceptions among tourism operators and other stakeholders in order to establish suitable adaptation” (Mushawemhuka et al., 2018: 116). This research adds to the body of African literature surrounding the risk perceptions of tourism stakeholders in a nature-based tourism area.

As stressed by Coldrey and Turpie (2020) the long-term impacts of climate change in South Africa’s protected areas – the geographical axis of nature-based tourism – will result in substantial decline in rates of visitation. Arguably, the findings of this research in the Waterberg highlight once more the existence of a disconnect between the climate change threats which are projected to be facing local tourism stakeholders and the risk perceptions as expressed in the interviews conducted with these tourism stakeholders (cf. Pandey & Rogerson, 2020, 2021b; Ruhanen & Shakeela, 2013). Among the serious projected impacts associated with climate change in the region there is predicted to occur a significant decrease in summer rainfall along with decreased water availability. Extreme weather conditions related to flooding and drought are further projected to increase in strength and frequency. Further there is set to be significant increase in temperature, and as a result an increase in heat-related stress with the potential to increase fire risks in a sensitive region already considered vulnerable to wild fires. In this research the range and severity of the risks and issues currently faced on an annual basis was recognised by all stakeholders surrounding the fire, floods, drought and other weather or climate-related extremes. Significant, however, was the disconnect between immediate threats and vulnerability with minimal consideration given by stakeholders to addressing how climate change might increase the magnitude or likelihood of such threats. A worrying finding was that

over one-third of interviewees did not believe that climate change would have any kind of impact on tourism in the Waterberg. The remainder indicated to varying degrees that climate change may represent a long-term threat. Stakeholders take a ‘wait and see’ approach that entails waiting until the impacts and implications associated with climate change become more pronounced before willing to consider serious action. In the short-term local tourism stakeholders focus on a range of other issues with immediate ramifications for their respective tourism businesses. The majority of these issues, such as concerns about marketing, surround the imperative of stakeholders coming to terms with the area’s transition from being predominantly agriculture-orientated to tourism-dominant. In final analysis our findings point to the need for further research to be undertaken to monitor the perceptions of key nature tourism industry stakeholders concerning climate change across the region of Southern Africa.

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