

# WATER AND TOURISM

## Investing in freshwater ecological infrastructure for a resilient tourism economy: A call for action

*Investing in freshwater ecological infrastructure can support growth and sustainable development in the tourism sector in the context of climate change. The Water Wheel reports about the latest research in this regard.*



*The Umngeni area is a hub for water sports, including the Midmar Mile and the Dusi Canoe Marathon.*

Tourism is a key strategic sector for economic growth and social change in South Africa. Tourism is also dependent on natural capital and the ecosystem services it provides. These 'services' provide the benefits that humans derive from nature, including natural flood control.

South Africa's natural environment is considered one of its greatest tourism resources. Yet the base of the country's nature-based tourism industry – its natural wealth – is at risk. The degradation of freshwater ecosystems caused by many anthropogenic factors – including tourism – is also threatening the future of the tourism economy. So, what can be done?

Researchers involved in a project titled *The inland water-related tourism in South Africa by 2030 in the light of global change* (WRC project no. 2620) explored how investing in freshwater ecological infrastructure can benefit tourism growth and small-business development. This project, funded by the Water Research Commission, stretched over three years.

The research team included Joël Houdet from The Biodiversity Footprint Company and the University of Pretoria's Albert Luthuli Centre for Responsible Leadership, and Fonda Lewis and Michelle Browne, both from the Institute of Natural Resources. The team investigated the links between natural capital, tourism and global change, with a focus on freshwater ecosystems.



*Fishing on the shores of the Inanda Dam, KwaZulu-Natal.*

The researchers considered several case studies, including the Dusi Canoe Marathon and Inanda Dam (in the uMngeni River catchment) and the Loskop Dam and the associated recreational fishing activities (in the Olifants River catchment in Mpumalanga). Their methodology involved stakeholder engagement, analysis of how government policies integrate natural capital and small, medium and micro business considerations, as well as modelling the economic impacts of water-related global change scenarios on the tourism economy.

#### **Spotlight on tourism**

Before the arrival of Covid-19, South Africa was ranked the top tourism destination in sub-Saharan Africa. According to the World Travel and Tourism Council, the 2018 contribution of the tourism sector in South Africa directly accounted for 2.8% of GDP, which amounts to R139 billion.

The indirect contribution of the tourism sector to the country's GDP in 2018 stood at an even higher 8.2%, according to the Department of Tourism. In addition, the tourism sector direct employment accounted for 4.2% of total employment in the South African economy in 2018, while tourism's indirect contribution to total employment stood at 9.2% for 2018.

#### **Climate change, natural resources and tourism**

Climate affects the seasonality of tourism, tourists' selection of destinations, the available tourist activities and attractions, and the overall satisfaction of visitors' vacations, the reports highlights.

Climate change has the potential to affect the sustainability and long-term variability of global tourism, according to the authors. Tourism businesses and tourists can, for instance, perceive risks differently when faced with water-related climate change impacts on tourism. In the towns of St Francis Bay and Cape St Francis in the Eastern Cape, tourists demonstrated greater concern for the risk of flooding, sea-level rise and the degeneration of beaches than the tourism business owners. A study by Hoogendoorn et al published in 2016 highlighted that owners of tourism accommodation establishments in these towns were mostly concerned with day-to-day changes in weather.

The number of extreme climate-related events, such as extreme droughts, is expected to increase over the next few decades. These extreme events could have significant negative impacts on water-based tourism assets and activities in many parts of the country, the researchers highlighted.

The country's tourism and recreation sector is already sensitive to droughts (when demand for water exceeds water supply), which is likely to be exacerbated by climate change. Expected changes in global precipitation patterns due to climate change will have significant impacts for already water-scarce destinations, including several provinces. If one considers the indirect water requirements of tourism, such as for the production of food, building materials and energy, local water shortages could have significant impacts on tourism in drought-prone regions like the Western Cape. The Breede-Gouritz and Berg River area could suffer particularly from extreme drought events, the report highlights.

The negative impacts of water shortages or restrictions on tourism have already been documented throughout the world. In South Africa, water shortages during the water crisis in Cape Town in 2018, for instance, raised fear of tourists staying away due to water restrictions. "Extreme drought and rainfall events could directly affect tourist numbers, especially foreign visitors whose behaviours can change quickly based on negative perceptions about the climate and weather of potential destinations," the researchers indicated.

#### **Case study No. 1: Spotlight on the "Dusi"**

In terms of tourism, the uMngeni area receives the highest proportion of visitors to KwaZulu-Natal. Various tourism attractions rely on natural resources in the uMngeni catchment area, especially water-based natural capital. The region is a hub for water sports, including the Midmar Mile and the Dusi Canoe Marathon (also known as the 'Dusi').

The Dusi marathon is an annual three-day paddling race held along the uMsunduzi and uMngeni rivers between Pietermaritzburg and Durban. The race is the largest canoeing event on the African continent attracting between 1 500 and 2 000 paddlers each year. In 2017, the event generated an estimated direct economic impact in the region of R4 million and an indirect economic impact of up to R9 million.

*"Climate affects the seasonality of tourism, tourists' selection of destinations, the available tourist activities and attractions, and the overall satisfaction of visitors' vacations."*

From 2006, the number of participants slowly declined each year – barring a slight increase in the number of participants in 2014. In 2018, the total number of participants was the lowest in 18-years. It is possible that the recent drought had a major impact on participation, as well as on canoeing as a sport.

## Measurements and targets for the tourism sector in South Africa

Indicators/measures of performance	2015 baseline	2026 target
Increase direct contribution to National Gross Domestic Product	R118 billion	R302 billion
Increase total (direct and indirect) contribution to National Gross Domestic Product	R375 billion	R941 billion
Increase the number of direct jobs supported by the sector	702 824	1 million
Increase the number of total (direct and indirect) jobs supported by the sector	1 551 200	2,2 million
Increase tourism export earnings	R115 billion	R259 billion
Increase capital investment	R64 billion	R148 billion

While the water quality of the uMngeni River has been good for many years, it is showing signs of deterioration. Water quality concerns include high nutrient loads from farming, sewage effluents from commercial, industrial and residential areas, and pollutants from industrial discharges. The water quality of the uMsunduzi is also notably poor, with a high faecal coliform content and nutrient enrichment. In recent years, anecdotal evidence from the Dusi marathon also points to increasing concerns related to water quality and water-related illness. The years 2008 and 2016 showed a spike in *E.coli* levels and a corresponding spike in the number of race participants affected by diarrhoea (so-called "Dusi Guts").

Unless water quantity and quality trends improve, there are "serious concerns" about the resilience and sustainability of this event and the local economy it supports, the researchers warned.

### Case study No. 2: Loskop Dam area

Loskop Dam is located about 32 km south of Groblersdal in Mpumalanga, in the upper catchment of the Olifants River. The dam is a freshwater angling hot spot and popular tourist attraction.

The dam is surrounded by the 25 000 ha Loskop Dam Nature Reserve. Loskop Dam and associated activities like fishing competitions, water sports and lodges play an essential role in the economy of the area. But without investments into new tourism assets and the associated activities (including tourism facilities), there will not be a significant increase in tourist numbers in the area. This investment is at risk due to water quality issues. The Olifants River is considered one of the most highly threatened aquatic ecosystems in the country.

Deteriorating freshwater resources could have a negative impact on businesses, especially small startups. More than two thirds (71%) of the business owners interviewed indicated that the water quality in the dam had declined in the last decade or so. Recent improvements were noted following the lobbying of upstream and local contributors to water pollution. Entrepreneurs indicated that a decline in water quality would harm their businesses because tourism in the area depends on "nature and clean water". Poor water quality would, for instance, make the area less attractive (including for birdwatching), and there would be fewer tourists and less sales.

"The findings suggest that there is a potential risk to tourism at Loskop Dam, given that much of the tourism is dependent on recreational fishing and fishing competitions. Efforts to maintain water quality in the catchment remain crucial to prevent

negative impacts on fishing competitions," according to the report. "Potentially, there is a risk of the tourism industry in both areas (in the Dusi and Loskop Dam study) collapsing if water-related problems and its effects on tourism are not addressed."

### Key policy challenges

While the South African government has recognised the importance of the tourism sector for the economy, this study has highlighted some policy gaps.

"The country's National Tourism Sector Strategy has a limited focus on environmental issues, besides raising concerns over the impacts on inbound tourist numbers of carbon taxes on the aviation industry, and the need for South Africa to appear to be a responsible tourism destination to help mitigate this risk. In practice, this equates to funding support for environmental management activities for a selection of tourism businesses and assets, including support to protected area management.

"There is no explicit and clear recognition of the importance of water source areas and ecological infrastructure linked to freshwater ecosystems (rivers, wetlands) as enablers of tourism activities, businesses and jobs.

"While the Department of Water and Sanitation Master Plan has recognised key water source areas, the tourism sector has yet to formally embrace such an approach."

Currently, environmental activities in the tourism sector focus on improving the environmental management of selected sites (mostly national parks) and businesses (mostly hotels). This approach is not sufficient to sustain the freshwater ecosystems and associated ecological infrastructure on which tourism relies, the researchers believe.

*There is also an "urgent need" for government departments to work together, with the tourism sector, towards the development and implementation of a freshwater ecosystem "source-to-sea" conservation and restoration strategy and action plan.*



*The Midmar Mile draws thousands of competitors each year, from serious international athletes and Olympic medallists to purely recreational swimmers.*

At the national scale, the research highlighted the additional effects of the various climate change scenarios on tourism GDP and employment.

“While these results should be interpreted with caution, they emphasise that climate change, characterised by water-related extreme events, can negatively affect any growth pathway for the tourism and travel industries,” the researchers emphasised. “These effects would be particularly acute when the tourism spending and sector growth rate is low or negative (including in times of global, regional or national economic crisis).”

Freshwater-related extreme events can have significant impacts on the tourism industry and stakeholders, especially in rural areas with weak institutional support and limited community skills, where tourism systems are small or weak.

### **Securing natural capital for the future**

The report argues that the degradation of natural ecosystems (including capital and ecological infrastructure) caused by human-made factors, including tourism, threatens the future of the tourism economy. This affects all tourism stakeholders, including tourism businesses, local communities, employees and the tourists themselves. Trends must be reversed to support the 2030 NDP and SDG goals, according to the report.

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to work together, with the tourism sector, towards the development and implementation of a freshwater ecosystem “source-to-sea” conservation and restoration strategy and action plan, the researchers indicated.

Efforts to mainstream natural capital and ecological infrastructure in the tourism economy may involve mainstreaming interventions at one or more pilot sites, including potential natural capital impact avoidance and minimisation (innovative infrastructure design, based on green infrastructure principles), natural capital restoration and rehabilitation (for example as part of tourism product development) and offset measures (including through stewardship site declaration).

There is a “clear need” to unlock financial and institutional support to harness tourism potential in critical source-to-sea pilot areas (including for the iSimangaliso World Heritage Site), the researchers indicated. This could happen by establishing financially independent and multi-stakeholder water funds to ensure alignment in public-private sector policymaking and implementation throughout the pilot sites, among others.

In the uMngeni catchment, various financing mechanisms to support the implementation of catchment management and restoration efforts to secure the hydrological services of the catchment are being investigated.

Umgeni Water – the local water service utility – is exploring a fund to finance investment in the ecological infrastructure of the catchment generated through an additional charge attached to the water tariff.

The eThekweni Municipality (lower uMngeni catchment) have expressed an interest in establishing a water fund to address water security issues through ecological infrastructure interventions as a component of the municipality's integrated water management programme.

The report highlights the need to establish a comprehensive, integrated tourism socioeconomic and ecological strategy and action plan. From an ecological perspective, this calls for strategically investing in freshwater ecosystems, it is argued. "Given the importance of tourism to the economy, the sector has an opportunity to strategically influence decision-making, financing and investment in ecological restoration at a meaningful and effective scale," the researchers indicated. "The tourism sector must act collectively to effectively lobby for, and support, ecological restoration as a key component of the green economy to safeguard South Africa's tourism sector, its growth potential and SMME opportunities."

Lastly, from a socioeconomic perspective, an extensive programme of capacity building is needed to empower rural and marginalised communities, and particularly the youth, to recognise and harness tourism opportunities and to embed and understanding of the linkages and interdependencies between tourism and natural capital. Such a programme needs to focus not only on aspects directly regarding tourism and its value chains, but also on the issues needed to provide an enabling environment for tourism, including water and waste management, pollution reduction and crime control.

To download the report, *Impact of degraded freshwater ecosystems on tourism towards 2030* (WRC Report no. TT 828/20), visit [www.shorturl.at/hkvOR](http://www.shorturl.at/hkvOR)

