

Nature-based Sport Events and the Physical Environment: A Case Study of the Halfway-Telkom Midmar Mile

Rohith Sookrajh

Introduction

Du Toit (2004) observed that tourism (inclusive of sport tourism) is the top job creator in the world, however, it is also one of the least regulated industries which can have serious consequences for ecosystems, communities and cultures around the world. Tourism is a powerful social and economic force. Additionally, it is a factor in the physical environment. An examination of sport event practices and management in relation to environmental aspects offers opportunities to reflect on the importance of sustainability (addressing and balancing social, economic and environmental imperatives) as well as the implementation of event strategies linked to the establishment of environmental priorities, mobilising and establishing partnerships, identifying environmental threats and benefits, and providing incentives for the greening of events. The main intentions of greening events are to minimise environmental impacts and raise environmental awareness.

Numerous localities are aggressively utilising nature-based recreation and sport events as part of a broader tourism strategy to enhance their image and stimulate economic development. For example, Durban is marketing itself as a sport and events capital. KwaZulu-Natal, currently being marketed as 'The Zulu Kingdom' has several established, successful recurring nature-based tourism sport events such as the Dusi Canoe Marathon, the Mr Price Pro surfing event and the Midmar Mile (a swimming event). Schmied *et al.* (2007) shows that sporting events inspire millions of

people every year. They are important for economic development as well as promoting the image of a destination. However, the increase in the mass popularity of sport events ‘brings with it greater consumption of resources (of energy and water, for example), increased emissions (of noise and pollution) and further side effects (such as increased traffic volume)’ (Schmied *et al.* 2007:84).

This article critically examines research findings relating to the Midmar Mile event. The main intention is to demonstrate the socio-economic and environmental impacts of nature-based tourism events in relation to broader sustainability imperatives. In terms of environmental impacts three areas are examined: levels of environmental awareness among people attending the events, strategies adopted by organisers to minimise environmental impacts and types of negative environmental impacts associated with the event. The research demonstrates that nature provides an ideal location for tourism events (especially water-based sport events) and tourism events provide an opportunity for environmental education to significant numbers of participants and spectators. Thus, mutually beneficial relationships can and must be established.

The motivation for this study derives from the assumption that sport is an important political, social and economic force. Sport events contribute significantly towards driving economic development that in turn could possibly assist in alleviating poverty in South Africa. The focus of the article is that numerous sport events are linked to the natural environment and are therefore to have impacts on the environmental as well.

Sport Events

Tourism is viewed in South Africa as a key economic driver and a significant contributor to the development of the country. To contribute to development tourism will have to sustain existing jobs and create new jobs. This will require investments. Investments generally migrate to regions that enjoy investor confidence. It is thus important that cities and regions create a positive image for themselves. One of the ways in which this can be achieved is by hosting successful events, especially sport events. Several studies focus on the social, economic and image/marketing impacts of hosting events, including sport events, on a country or specific

location/destination (see for example, Chalip 2006; Kim & Petrick 2005; Ohman *et al.* 2006; Smith & Fox; 2007; Turco *et al.* 2003). However, there is a dearth of studies that focus on environmental impacts and concerns. Special events of all kinds have been increasing in number, size and diversity worldwide (Getz 1991). South Africa has been using this strategy for a while now, for example, it successfully hosted the World Summit on Sustainable Development, the biggest global conference of the United Nations. Furthermore, in the last ten years South Africa has successfully hosted several major sport events including the World Surfing Games, the Rugby World Cup and the Cricket World Cup. In 2010, South Africa will host the largest single sport event in the world, the FIFA World Cup.

Sport was once primarily a form of recreation and entertainment. It has now emerged as an important political, social and economic force. Sport events are big business and their prominence and impacts are on the increase. Swart and Bob (2007) assert that sport tourism is a niche market that has received increasing attention in recent years. Turco *et al.* (2002) hold similar views as sport becomes more important as economic and cultural phenomena, the relationship between sporting events, venues, and visitors will continue to receive attention from industry segments, trade associations, and host cities. According to Turco *et al.* (2002), tourism is a huge industry and sport tourism is a vital segment of this growing business. According to Delpy (1996), sport tourism is one of the fastest-growing segments of the tourism industry and a relatively new focus in destination planning. The sport activity can include competition and travel for recreation, entertainment, business, education, and/or socialising and the sport itself can be either competitive and/or recreational. Bjelac and Radovanovic (2003) define sport events as events that are characterised by a creative and complex content of sports-like, recreational activities, of entertaining character, performed in accordance with a particular predetermined programme, and that achieve touristic effects and have a serious social and economic importance for the place or region in which they are held. It is now widely acknowledged that sport events contribute significantly towards increasing tourist traffic flows and driving economic development in a locality (Turco *et al.* 2003).

A well organised sport event has the potential to deliver the following benefits to localities or communities (Delpy 1996; Getz 1997;

Turco *et al.* 2002):

- Reinforce a locality's profile and create a positive image for the region as a tourist destination.
- Improve a region's competitive position within a country and globally.
- Make the region more vibrant, showcasing its brand and instilling pride and confidence in the host community.
- Increase community support for events.
- Media coverage of events will provide indirect advertising for the region, perhaps to a wider community.
- Ensure maximum use of existing facilities thus increasing revenue.
- Facilities will be well maintained even for use by locals.
- Enhance the organisational, marketing, and bidding capability of the region.
- Improve the institutional and infrastructural capacity of the region.
- Ensure there is a decrease in negative elements, for example, crime.
- Encourage public/private partnerships.
- Can be used as part of regeneration strategies

The sport tourism industry in South Africa is growing but faces several challenges. There are many performance problems within the sport tourism industry. A crucial challenge for sport tourism stakeholders is to develop sport tourism more effectively as an economic development strategy, more especially a local economic development strategy for cities or regions, as well as ensure that events do not have negative environmental and social impacts. Stakeholders should understand the socio-economic and environmental costs and benefits of sport tourism. Post-apartheid South Africa has experienced a phenomenal growth in tourism, due mainly to the hosting of high profile conferences (such as the World Summit on Sustainable Development) and high profile sport events (such as the cricket and rugby world cups and the upcoming 2010 FIFA World Cup).

Schmied *et al.* (2007) assert that large sporting events each year attract millions of spectators. As indicated earlier, most research on sport events focus on image, economic and social impacts. Environmental impacts

are neglected. Furthermore, the International Symposium on Green Events (2004:7) asserts that experiences in greening events are rarely documented and very seldomly published. The next section examines some of the critical issues pertaining to events and environmental impacts.

Events and Environmental Impacts

Numerous studies, as indicated in the previous section, indicate that event-driven tourism (including nature-based sport events) have the potential to be a powerful social and economic force (Auld & McArthur 2003; Gursoy *et al.* 2004; Turco *et al.* 2003). As Shaw and Williams (2002) indicate, it has the power to contribute towards negative, social, economic and environmental impacts, especially in the host destinations. Some of the negative impacts include economic leakages, cultural exploitation, social exclusion of certain groups and individuals, social problems such as increased prostitution, environmental degradation, and noise pollution. Additionally, it is likely that the spatial and temporal concentration of nature-based tourism events lead to a similar pattern in the distribution of the available jobs and because of the seasonal nature of the employment, only people who are close by are able to benefit from it. Also, economic benefits leveraged from events tend to be concentrated in the hands of a few rather than distributed among the general populace. In particular, the accommodation and hospitality sectors tend to accrue direct benefits associated with tourism events. Notwithstanding its potentially negative consequences, tourism events have come to be closely associated with promoting destinations and contributing to economic development.

The United Nations Environmental Programme (UNEP 2007) states that the relationships between sport and the environment includes both the impact of sport on the environment and the impact of the environment on sport. They further assert that all sports activities, events and facilities have an impact on the environment, creating an ecological footprint whose cumulative impact can be extremely significant and can include pesticides, erosion, waste generation and habitat loss. UNEP (2007) also shows that it is important for sport to be pursued in an environmentally sustainable manner, given that the deterioration of environmental conditions reduces the health, well-being and living standards of individuals and communities as well as

their levels of physical activity. A cleaner environment also encourages people to be more connected to the natural environment and to be more physically active. This promotes healthy lifestyles and improves general well-being. Additionally, UNEP (2007) argues that the inherent link between a clean environment and participation in sport is part of what makes sport a powerful tool for communicating environmental messages and encouraging action to clean up the environment.

Schmied *et al.* (2007) assert that environment and sport are two worlds that are often in conflict. Specifically, they argue that events cause too much noise and traffic, make use of valuable countryside or give rise to high levels of emissions. They also indicate that sport events are attracting more and more participants, spectators and media attention. Thus, 'if event organisers actively address the topic of environmental and climate protection they can reach target groups that either have little interest in or are insufficiently informed about ecology' (Schmied *et al.* 2007:21).

Numerous studies (Bird 1996; Pendleton *et al.* 2001; Smith 2002; Thiele *et al.* 2005) have emphasised the importance of understanding the levels of environmental awareness among users of the natural resource base. Micallef and Williams (2002) also assert that it is imperative that the types of negative environmental impacts associated with nature-based events be understood by event organisers and managers.

Thus, the pressures originating from inappropriately managed infrastructure and tourist activities can impact the receiving natural environment. Negative impacts on terrestrial and aquatic ecosystems include destruction of wildlife habitats (reduction in biodiversity); damage to mangrove swamps and estuaries; pollution of sea and other water bodies; changes in salinity; soil and dune erosion; disruption of soil stability; disruption of nutrient cycles; and inadequate waste management and disposal. There is an urgent need to minimise the negative impacts of tourism and to maximise its positive contribution to biodiversity conservation. It is important to note that the relationships between tourists and natural environments (especially water-based ecosystems) are complex since they often require competing demands (socio-economic versus ecological) to be balanced. Schmied *et al.* (2007) show that large sporting events have inevitable adverse effects on the environment.

Greening Events

Recently, there has been an increase in literature that underscores the importance of incorporating environmental issues in event planning and implementation. This is often referred to as the greening of events. The International Symposium on Green Events (2004:1) states:

An event can be considered 'green' if it is designed, organised and staged in accordance with sustainability principles, with a special focus on environmental, health and social concerns. The goal is to use as few resources as possible, reduce waste to a minimum, and protect biodiversity and human health. At the same time, opportunities are used for rehabilitating land, improving living conditions, designing sustainable post-event use, saving financial resources and raising awareness among citizens and visitors.

Specifically, the symposium asserts that events that adopt a green approach utilise as few resources as possible which are adapted to available local resources. Waste is minimised and/or recycled and nature, biodiversity, water, air quality and soil are protected. Furthermore, minimal environmental damage is caused while planning and implementing the event. The symposium also illustrates that events, especially nature-based events, provide ideal opportunities to promote green technologies and innovations.

Schmied *et al.* (2007) indicate that the objective of organising sport events in an environment-compatible manner is growing in importance, primarily because sporting events are increasingly being judged by their ecological standards. They state:

Experience shows that environmental protection in sport leads to a real win-win-situation. The environment and event organisers benefit equally from energy savings and waste avoidance, particularly since the protection of resources also means cost savings and represents a contribution to sustainability (Schmied *et al.* 2007:12).

Greening events are becoming increasingly popular and many countries are institutionalising legislation and guidelines to ensure ecologically-friendly

events. A case in point is the 2006 Football World Cup held in Germany which embraced the concept of the 'Green Goal'. The Local Organising Committee (LOC 2006) of the 2006 FIFA World Cup Germany states that in June and July 2006 the world experienced a breathtaking football festival, and for the first time in the history of the World Cup the environment was on the programme. Green Goal, the LOC (2006) asserts, is an innovative and ambitious environmental programme which was successfully carried out at the 2006 FIFA World Cup in Germany, which pursued new paths for large sporting events. The Green Goal was intended to reduce to the greatest extent possible adverse effects on the environment, which is often associated with large-scale sport events such as the FIFA World Cup. The Green Goal programme was also used as an opportunity to sensitise broad sections of the public about environmental and nature conservation beyond the World Cup, and that environmental protection can also be economically worthwhile (LOC, 2006). The Green Goal programme focused specifically on water, waste, energy and transport. The Green Goal programme is a major aspect of the 2010 FIFA World Cup as well.

The 2008 Beijing Olympic Games is another example of a mega sport event adopting an environmental thrust. The Beijing Olympic Committee of the Olympic Games (BOCOG 2007) states that the International Olympic Committee requires all cities bidding to host the Games to have a comprehensive environmental programme which is followed through during the preparatory phase of the Games. Furthermore, each Games is expected to leave a sustainable legacy and to use the opportunity of the Games to promote environmental awareness, policies and practices. The United Nations Environmental Programme (UNEP) and the BOCOG signed a Memorandum of Understanding in November 2005 aimed at making the 2008 Olympic Games environmentally-friendly—the Green Olympics.

The Green Olympics logo is composed of people and green trees. In the shape of an interlacing stripe, the green line, made from one stroke, looks like a dense tree crown or a flower in full-bloom filled with vitality and hope. The colour green fully embodies the idea of environmental protection and sustainable development. The lofty tree, formed by the tree crown and the people underneath, represents

the harmonious unity between human and nature. The Green Olympics Logo is mainly used for activities of Green Olympics communication and education (BOCOG, 2007).

UNEP is also working with the Vancouver 2010 Olympic Games Organising Committee (VANOC) who is organising the Winter Games to develop a Memorandum of Understanding to ensure an environmentally sustainable event.

History of the Midmar Mile

The history of the Midmar Mile is derived from SouthAfrica.Info. (nd). In 1973 some swimmers were not able to travel to East London to take part in the Buffalo Mile because of petrol restrictions. It was suggested that a similar event be held in Natal and the Midmar Dam, Pietermaritzburg was chosen as the venue. Thus, the Midmar Mile was first hosted on 10 February 1974 with only 153 male swimmers officially taking part. 1975 saw the introduction of the first female entrants and the number of participants growing to 315 with 105 being women. The event continued to grow and by 1987 the field grew to 3 500 participants and with this achievement the term 'Midmar Mile Mania' emerged. The Midmar Mile continued to grow and began attracting foreign participants with the first foreign swimmer winning in 1998. With this growth many sponsors (for example, Ola, Telkom, Energade, Halfway Toyota, The Golden Horse Casino, Tempest Car Hire, Second Skins, Tourism Kwazulu-Natal etc.) identified with the event and thus ensured its success and continued growth. Currently, because of the huge field (over 15 000), the event is held over two days.

The Midmar Mile is regarded as the world's largest open water swimming event and now attracts over 17 000 swimmers from around the world. The event for this study was The 2005 Halfway-Telkom Midmar Mile which took place on the 12th—13th February 2005 at Midmar Dam.

Location of Midmar Dam

According to SA Places (nd), 'the Midmar Dam and nature reserve, with its large expanse of fresh water, extensive meandering shoreline, open grasslands, good road network, outdoors action and recreation facilities

makes it an exciting family destination'. The Midmar Dam covers an area of 4 600 hectares with a shoreline of over 60 kilometres. It contains the Midmar Resort which covers an area of 2 857 hectares and is situated along the N3 in close proximity to Howick and Pietermaritzburg and forms part of the Midlands Meander Route. The nature reserve features a range of small games species, including antelope.

SA Places (nd) also states that the Midmar Dam hosts several sport events and is frequented during weekends and peak periods by sport enthusiasts who are mainly interested in bicycling, windsurfing, canoeing and yachting/sailing.

Research Methodology

The research utilised both secondary and primary data gathering approaches. The methodology adopted included the implementation of a questionnaire survey to ascertain information from event attendees (both spectators and attendees) during the two days of the event. In total, 200 interviews were conducted (100 on each day) during the event. A purposive sampling approach was adopted to ensure that samples were drawn at various times during the event and at different activity locations. The samples were therefore unbiased in terms of space, time and selection. In addition to the questionnaire surveys, daily volume counts were undertaken. The capturing and processing of data was undertaken using the Software Package for the Social Sciences (SPSS) to generate the necessary tabulations. It is important to note that the survey complemented the study undertaken by Tourism KwaZulu-Natal to assess the socio-economic impacts of the Midmar Mile event. Tourism KwaZulu-Natal (TKZN) was a sponsor of the event and contributed towards marketing the event. This study, commissioned by TKZN, undertook an assessment of the event as a potential benefit to the stimulation and increase in tourism and its socio-economic impacts on the local economy. The socio-economic assessment of the event was conducted by KMT Multicultural Enterprises (KMT 2005).

Data Analysis

Estimates of the Number of People Attending the Event

The volume attendance over the two days of the event was 35 000. The

average number of days people attended the event was 1.3. Thus, the actual number of people attending the event was 26 923 over the two days of the event (KMT, 2005). Thus, the Midmar Mile event attracts a significant amount of people to the dam over a relatively short period. The presence of the people as well as their related requirements in terms of transport, food, seating areas, facilities and amenities, etc. are likely to place demands on the natural resource base and if not properly managed can have serious negative ecological impacts.

Demographic Profile of Respondents

Thirty eight percent of the respondents were males and 62.5% were females. In terms of historical race classification, the event attracted mainly Whites (83.5%). Africans (3%), Indians (12.5%) and Coloureds (1%) were also in attendance. Respondents interviewed ranged in ages from less than 20 years to 70 years. The average age of respondents was calculated to be 34 years. The majority of the respondents (82%) were between the ages of 21 and 50 years old. The average immediate group size of people attending the event was 7.9 persons and ranged from 1 to 60 persons. The groups comprised mostly of friends and family (36%), family members (31%) and friends (20.5%). Other groups discernible were business associates and school groups (6% each). One respondent indicated that s/he was alone. It is important to note that adults were targeted as survey respondents. It was observed by the researcher that groups included children and youngsters.

The event was attended by individuals from a range of income groups. The average income of respondents was R7 398 per month and ranged from less than R1 000 to R22 000. Some of the respondents (9.5%) stated that their income was confidential. Additionally, 18% of the respondents did not earn any income either because they were unemployed, home executives/housewives or students. Occupational categories that were clearly evident amongst respondents were professionals (28.5%), administrators/ managers (13%) and sales/marketing (8.5%).

Almost two thirds of the respondents were visitors (67.5%) with almost a third being local residents (32.5%). Among the visitors, 12.5% were day visitors from other areas in KwaZulu-Natal. The permanent places of residence of the respondents are outlined in the Table below.

Permanent Place of Residence of Respondents (%)

Place of residence	Total (n=200)
Local residents	32.5
Other KwaZulu-Natal areas (day visitors)	12.5
Other KwaZulu-Natal areas (overnight visitors)	12
Other SA provinces outside KZN	40.5
International visitors	2.5

Clearly, the event is attracting a significant number of visitors into the province. The visitors from other South African provinces were from the Gauteng (29.5%), Mpumalanga (4%), Western Cape (3%), Free State (3%) and Northern Province (1%). Foreign visitors were from Botswana, India, United Kingdom, Germany and Swaziland (1 respondent each).

The results reveal that the event was attended by a significant number of individuals from a range of socio-economic backgrounds. This provides an ideal opportunity to embark on environmental, specifically water, education programmes.

A significant proportion of those people who are attracted to the Midmar Mile event are individuals or families with disposable incomes. This bodes well for the economic leverage of nature-based tourism events as these groups are more likely to have disposable incomes which result in an increase in spending at the event and, in the case of tourists, in the area more generally. Understanding income differentiation is important because it reflects the need for different types of accommodation options and activities to be available. Furthermore, income is much more likely to be a determinant of general tastes and preferences for environmental attributes, amenities as well as activities than race or gender. As such, it is probably income and age differentiation, more than anything else, that deserve consideration in differentiated green tourism planning.

Economic Evaluation

The report compiled by KMT (2005) illustrates the direct economic impact of the event on the province's economy by measuring the direct expenditure of people who attended the event. This includes their daily spending as well as the accommodation costs of tourists attending the

event. KMT (2005) states that R 4 013 100 was generated for the local economy in terms of daily expenditure at the event and that R 943 340 was generated by the local accommodation industry from the attendees staying in paid accommodation. Thus, the total revenue generated in terms of peoples' daily expenditure (R 4 013 100) and from the accommodation industry (R 943 340) that can be attributed directly to the event was calculated to be R 4 956 440.

Primary Reasons for Visiting Event Location Area

With the exception of one respondent, the rest who were visitors indicated that their primary reason for visiting Pietermaritzburg was the Midmar Mile event. The main reason for the one respondent was vacation purposes. This respondent, however, also indicated that s/he scheduled their visit to coincide with the Midmar Mile event. The primary mode of transportation to the event for all the respondents was private vehicles (99.5%). One respondent used a rental vehicle. Vehicle travel and parking are key challenges that impact on the natural environment. It was observed on both days of the event that although there were designated parking areas, vehicles were parked in non-designated areas. This was especially the case with 4 x 4 vehicles. It is disconcerting that this type of parking was noticeable even when parking space was available in the designated parking areas. During discussions with some of the drivers who were parking outside the parking areas the main reason forwarded was that they wanted to be closer to the event activities and did not want to walk longer distances. It is imperative that the event organisers plan to mitigate against this type of behaviour which can have long lasting negative environmental impacts.

The main types of activities respondents were attracted to at Midmar Dam were swimming, entertainment and leisure, extreme water sports, shopping, fishing and surfing. Clearly, the majority of the activities are directly linked to the utilisation of the dam resources. The sustainable use of the dam resources therefore becomes prominent.

Factors Influencing Decision to Attend the Event

Most respondents heard about the event via word of mouth (35%), yearly event/ known event (37.5%), watch family/friend participate (19.5%) and newspaper advertisements (5.5%). The majority of the respondents (97.5%)

were satisfied with the information provided regarding the event. Among those who were dissatisfied, respondents stated that the main reason for their dissatisfaction was lack of information about starting times. Forty four percent of the respondents forwarded suggestions to improve the marketing of the event in the future which included more advertising, market outside KwaZulu-Natal and more information about the event. Advertising of a nature-based event provides an ideal opportunity to raise environmental issues.

Future Attendance of the Event

The majority of the respondents (91.5%) stated that they would attend the event if it was held again next year. The rest (8.5%) indicated that they did not know if they would attend the event next year. The vast majority of respondents (85.5%) stated that they had attended the event in previous years. The event thus has a significant following which bodes well for the future of the event. However, the size of the event will continue to place demands on the natural resource base.

Perceptions/ Attitudes toward the Event and Location

The respondents rated their event experience as excellent (28.5%), good (69%), fair (1.5%) and bad (1%). Some of the respondents (22.5%) experienced problems at the event. The main problems experienced were parking and congestion (too many people), poor condition of ablution facilities, lack of sheltered areas, littering, safety and security, registration too long, could not find first aid area, traffic to venue and waves caused by private boats. The responses clearly illustrate that generally vehicles (road and water) are linked to the problems experienced by attendees. Also, the prominence of social and infrastructural problems is noticeable. However, it is important to underscore that the majority of the problems cited could be addressed by appropriate development and management structures.

The positive perceptions of the Midmar dam and the general location were: dam, weather, natural environment/scenery, atmosphere/entertainment, activities/events, tourist attractions and diverse cultures. The negative perceptions of the dam and general location were: crime and lack of security, dirt/litter, inadequate facilities, congestion and lack of parking. Respondents indicated that the most important positive features of the tourist

destination were the climate and the dam (both natural assets). The main and dominant negative feature is crime, a persistent problem in South Africa generally.

Environmental Awareness Aspects

The main aspects relating to environmental awareness that most of the respondents identified (identified by > 50% of respondents) were:

- Listen to lifeguards
- Littering not allowed
- Night swimming dangerous
- Swim in designated areas
- Importance of biodiversity/nature (both terrestrial and aquatic)
- Take care of children

Additionally, the awareness/familiarity with rules/behaviour among spectators and respondents were:

- | | |
|---------------------------------------|------|
| • Littering prohibited | 100% |
| • Listen to lifeguards | 100% |
| • Take care of children | 100% |
| • Night swimming is dangerous | 100% |
| • Keep change rooms and toilets clean | 100% |
| • Swim in designated areas | 99% |
| • Alcohol prohibited/illegal | 99% |
| • Use of proper swimming attire | 95% |
| • Loud music/noise prohibited | 89% |

The above results clearly show that the respondents were more aware of rules and behaviours related to social norms and values linked to appropriate behaviour while frequenting the dam. The extent and nature of environmental awareness was limited. There were no environmental education programme, especially in relation to dam life and habitats, involved in the event campaign. It is also important to note that while the majority of the respondents were aware rhetorically of water safety rules, the

actual behaviours observed by the researchers were different. Littering (especially eating and disposing of food), consumption of alcohol, loud music and swimming in non-designated areas were observed. Thus, translating what respondents are aware of into practice is a major challenge.

In relation to perceptions of water quality, 22% of the respondents rated it as excellent, 36% as good and 42% as satisfactory. None of the respondents rated water quality as poor.

Waste Disposal

The researcher observed that there were waste bins throughout the event venue. However, what was disconcerting was the amount of litter, both on land and in the water that was observed. There were several boats and other motorised crafts in the water. Some belonged to lifeguards and race officials while others belonged to spectators. The researcher also noticed several people simply throwing their refuse on the ground and in the water rather than disposing of it in the bins provided. Also, the bins did not encourage the separation of waste so that some of the refuse could be recycled. Most of the waste provided was as a result of the food stalls. The need for environmental education is particularly important to try and curb this practice. Also, the provision of bins for specific recycling products such as cans or bottles will assist in minimising waste and encouraging environmentally-friendly behaviour.

Conclusion

The socio-economic impact assessment of the Halfway-Telkom Midmar Mile indicated that the event attracted approximately 26 923 people comprising a significant proportion of tourists from other KZN areas, other provinces and international visitors. The total revenue generated from the event by people's daily expenditure and accommodation cost was R4 956 440. From the above it can be deduced that nature-based sport events can contribute significantly economically to specific localities if they could successfully host sporting events. Most of the visitors interviewed came specifically for the event. Most respondents were satisfied with the information provided about the event and stated that they would attend future events.

In relation to centralising and funding environmental education and awareness programmes the key issues that need to be addressed are defining whose responsibility it is and what are the effective and appropriate education mechanisms. This requires integrating event and dam management to ensure economic and environmental sustainability.

It is worth recounting the recommendations forwarded by the International Symposium on Green Events (2004: 12) for the greening of events that are particularly relevant in relation to nature-based events such as the Midmar Mile:

- Be aware of the (limited) capacity of existing sewage systems and limit additional event created pressure on the facilities
- Always respect restricted and protected areas and isolate them from any new installations or entrances (event infrastructure)
- Protect nature from brief but massive influxes of people
- Ensure only minimal impact is caused on flora and fauna during all phases of an event (pay special attention to indigenous plants and wildlife, especially in the case of sensitive ecosystems)
- Be especially careful when water-based natural resources (such as rivers, lakes and dams) are being used
- Use the event for making visitors and the general population aware of the beauty (and importance) of nature and biodiversity

In terms of managing waste at sport events, event organisers should include the 3Rs in their planning and implementation strategy: reduce, reuse and recycle. These aspects are particularly important given the Midmar Mile has grown significantly recently in terms of the number of participants and spectators attending the event. The Midmar Mile event organisers should integrate these recommendations in terms of planning and implementation processes.

The Green Goal focus of the 2006 FIFA World Cup held in Germany and the 2008 Beijing Green Olympics clearly illustrate how mega sporting events can provide the platform to integrate and underscore sustainable environment protection as a component of sport events. LOC (2006) asserts that the integration of Green Goal into the planning and organisation of the 2006 FIFA World Cup was an important step for

acquainting the football fraternity with ecological issues as well as providing the environment with a secure long-term foundation in national and international football. The principles encapsulated in the Green Goal and Green Olympics can be applied to sport events generally, including events such as the Midmar Mile.

Sport events, especially those that directly utilise the natural resource base, need to be assessed in relation to environmental impacts. The research should include a cost-benefit analysis (do the economic benefits of the event offset the environmental costs), environmental impact assessments that include research aimed at measuring direct impacts on the natural environment as well as pollution and carbon emissions attributed to the event, and perception studies that examine the attitudes and actions of attendees.

This study reveals that natural environments provide ideal locations for sport tourism events, entertainment and leisure. Simultaneously, sport tourism events provide ideal opportunities for environmental education. If managed and coordinated effectively, a well thought out nature-based tourism event strategy has the potential to bring numerous benefits to aquatic localities such as the Midmar dam. These benefits include promoting environmental education, encouraging integrated and sustainable management practices of natural environments (including clear guidelines on ecosystem management and conservation), the enhancement of destination image, attracting high yield tourists and repeat visitors, driving economic development and improving the quality of life of residents. By linking tourism with environmental education and conservation, we can develop strategies that conserve Earth's vulnerable ecosystems and make a significant contribution to economic development.

References

- Auld, T & S McArthur 2003. Does Event-driven Tourism Provide Economic Benefits? A Case Study from the Manawatu Region of New Zealand. *Tourism Economics* 9,2:191-201.
- Beijing Olympic Committee of the Olympic Games (BOCOG) 2007. Beijing 2008 Olympic Games—An Environmental Review. <http://>

- www.unep.org/downloads/BeijingReport.pdf Accessed on: 25 April 2008.
- Bird, ECF 1996. *Beach Management*. New York: Wiley.
- Bjelac, Z & M Radovanovic 2003. Sports Events as a Form of Tourist Product, Relating to Volume and Character of Demand. *Journal of Sport Tourism* 8,4:260-269.
- Chalip, L 2006. Towards Social Leverage of Sport Events. *Journal of Sport and Tourism* 11,2: 109-127.
- Delpy, L 1996. Outlook for Sport Tourism—Olympics. Proceedings of the 21st Annual Outlook Forum at the Travel Industry National Conference, Washington DC.
- du Toit, J 2004. Tourism's Fair Deal. *Upfront* British Airways, 38-40.
- Getz, D 1991. *Festival, Special Events and Tourism*. New York: Van Nostrand.
- Gursoy, D, K Kim & M Uysal 2004. Perceived Impacts of Festivals and Special Events by Organisers: An Extension and Validation. *Tourism Management* 25,2:171-181.
- International Symposium on Green Events 2004. Greening Events and Leaving Positive Legacies, Results of conference on *Local Governments Implementing Sustainability Principles as Hosts of International Events* held in Barcelona, Spain. <http://www.iclei-europe.org/index.php?id=1012> Accessed on: 25 April 2008.
- Kim, SS & JF Petrick 2005. Residents' Perceptions on Impacts of the FIFA 2002 World Cup: The Case of Seoul as a Host City. *Tourism Management* 26:25-38.
- KMT Multicultural Enterprises 2005. Socio-economic Impact Assessment of the Midmar Mile Event, study commissioned by Tourism KwaZulu-Natal.
- Local Organising Committee (LOC) 2006. Green Goal: Legacy Report. FIFA LOC Germany. <http://www.oeko.de/oekodoc/292/2006-011-en.pdf> Accessed on: 25 April 2008.
- Micallef, A & AT Williams 2002. Theoretical Strategy Considerations for Beach Management. *Ocean and Coastal Management* 45,4-5:261-275.

- Ohmann, S, I Jones & K Wilkes 2006. The Perceived Social Impacts of the 2006 Football World Cup on Munich Residents. *Journal of Sport and Tourism* 11,2: 129-152.
- Pendleton, L, N Martin & DG Webster 2001. Public Perceptions of Environmental Quality: A Survey Study of Beach Use and Perceptions in Los Angeles County. *Marine Pollution Bulletin* 42, 11:1155-1160. SA Places nd. Midmar Dam. <http://www.places.co.za/html/9433.html> Accessed on: 12 February 2007.
- SA Places nd. Midmar Dam. <http://www.places.co.za/html/9433.html> Accessed on: 12 February 2007.
- Schmied, M, C Hochfield, H Stahl, R Roth, F Armbruster, S Turk & C Fiedl 2007. *Green Champions in Sport and Environment: Guide to Environmentally-sound Large Sporting Events*. Berlin: Federal Ministry for the Environment, Nature conservation and Nuclear Safety.
- Smith, A & T Fox 2007. From 'Even-led' to 'Event-themed' Regeneration: The 2002 Commonwealth Games Legacy Programme. *Urban Studies* 44,5:1125-1143.
- Shaw, G & AM Williams 2002. *Critical Issues in Tourism: A Geographical Perspective*. (2nd edition) Oxford: Blackwell Publishing.
- Smith, HD 2002. The Role of the Social Sciences in Capacity Building in Ocean and Coastal Management. *Ocean and Coastal Management* 45, 9-10:578-582. SouthAfrica.Info. nd. Midmar Mile. <http://www.southafrica.info/about/sport/midmar.htm> Accessed on: 12 February 2007.
- SouthAfrica.Info. nd. Midmar Mile. <http://www.southafrica.info/about/sport/midmar.htm> Accessed on: 12 February 2007.
- Swart, K & U Bob 2007. The Eluding Link: Toward Developing a National Sport Tourism Strategy in South Africa Beyond 2010. *Politikon* 34,3:373-391.
- Thiele, MT, RB Pollnac & P Christie 2005. Relationships Between Coastal Tourism and ICM Sustainability in the Central Visayas Region of the Philippines. *Ocean and Coastal Management* 48, 3-6:378-392.
- Turco, DM, RR Riley & K Swart 2002. *Sport Tourism*. Morgantown, WV: Fitness Information Technologies.

Rohith Sookrajh

Turco, D, K Swart, U Bob & V Moodley 2003. Socio-economic Impacts of Sport Tourism in the Durban Unicity, South Africa. *Journal of Sport Tourism* 8,4:223-239.

The United Nations Environmental Programme (UNEP) 2007. Sports and Sustainable Development. <http://unesdoc.unesco.org/images/0015/001508/150845e.pdf> Accessed on: 25 April 2008.

Rohith Sookrajh
School of Environmental Sciences
University of KwaZulu-Natal
Sookrajhro@ukzn.ac.za