

Mega-events and Environmental Impacts: The 2010 FIFA World Cup in South Africa

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Abstract

Sustainability, borne out of the desire for the future maintenance of human well-being, is undeniably linked to reconciling and balancing social, economic and environmental concerns through both the wise use and management of natural resources, commonly referred to as the triple bottom-line. This conceptual article provides critical impetus into the examination of mega sporting events in relation to environmental impacts and environmental education pertaining to sustainability imperatives, particularly in the South African context. It is deemed crucial to examine these impacts as they determine the ability of a country to host future mega-events, such as the Olympic Games, as in the case of South Africa. There exists a growing body of academic literature which suggests that ‘optimistic’ pre-event economic projections of post-event benefits have relegated the negative environmental costs to less or no form of comprehensive assessment, thus challenging the notion of what exactly is the legacy that is left in its wake. This concern, centred solely on economic imperatives, is particularly amplified due to the nature of and investment in such events – the former, that it is ‘intrusive’ and the latter, that the event and related activities necessarily require substantial ecological attention. The focus of this article presents a unique amalgamation of both the critical need to assess the environmental impacts of mega events, as well as to draw from this, opportunities to improve environmental awareness and education of nations hosting future mega sporting events. To this end, the FIFA World Cup’s ‘Green Goal’ and Olympic Games’ ‘Green Games’ programmes are used as illustrative examples of an attempt to draw attention to environmental aspects that are likely to be unique to specific

contexts and types of events. The article further advocates an integrated analysis of the triple bottom-line as fundamental to the planning, design and evaluation of events, and suggests recommendations for the hosting of future mega-events.

Keywords: Sustainability, environment, mega-events, green events

Introduction

Leeds (2008:461) defines a mega-event as ‘any large-scale, organised gathering that draws large numbers of people to a limited geographic area for a relatively short period of time’. Although a global activity of this scale can be assumed to have a substantial negative impact on the environment, its consequences have seldom been reviewed, evaluated or quantified (Gossling 2002:283; Schmied *et al.* 2007:7; Wood 2005:38). Despite these uncertainties, current trends suggest that both developed and developing countries are aggregating towards event-driven economies, actively pursuing major sporting events such as the Olympic Games and the *Federation Internationale de Football Association* (FIFA) World Cup (Bob *et al.* 2008:49). These events have the capacity to attract significant numbers of people and spending power globally. The FIFA World Cup, for example, has become one of the world’s biggest sporting events (Grundling & Steynberg 2008:15). The authors conclude that its coverage, in 2002, was ‘broadcasted in more than 200 countries and regions around the world, covering over 41 100 hours of programming and reaching an estimated 28.8 billion television viewers’ (Grundling & Steynberg 2008:15). Since South Africa’s reintegration into international sport since 1994, it has progressively used sport tourism events, and mega-events in particular, such as the 1995 Rugby World Cup, the 2003 Cricket World Cup and the 2010 FIFA World Cup to reposition itself on equal footing within the international sport arena (Bob *et al.* 2008:49).

According to Ashworth and Goodall (1988 in Jones, 2001a:241), ‘recognition effects’ are often the major *raison d’être* for hosting such events. There is abundant literature which supports this perception. For instance, sport mega-events are seen as a nation builder, social unifier and

international image builder (Labuschagne 2008:3); they are often rationalised by their direct and indirect economic benefits to the host economy (Grant Thornton 2003 in Bohlmann & van Heerden 2005:3) and provide optimistic forecasts of increases in tourism, urban regeneration and urban infrastructural improvements (Persson *et al.* 1998 in Hiller 1998:47).

The macro-economic policy document, the Accelerated and Shared Growth Initiative–South Africa and the provincial growth and development strategy (which highlights spatial development corridors to promote economic development in the province), widely acknowledge the role of the 2010 World Cup as enabling the country to reach its economic growth targets and address crucial aspects of poverty and unemployment, while infrastructure development is constantly touted as the most important element for merging and spreading economic gains equitably (Kunene 2007:2). These recognition effects are a timely case in point for South Africa, as a country plagued by spatial and economic legacies of apartheid, and as the first developing country on the African continent to have hosted the FIFA World Cup. According to the United Nations Office on Sport for Development and Peace (UNOSDP 2010:5), ‘the way in which South Africa manages the event, its successes and failures in this regard, are widely regarded as an important test case, leading the way for developing countries at large’. Furthermore, it is also a test of South Africa’s ability to host the Olympic Games. Matheson (2006:5-6) sums up the sentiment that sport plays in South African society:

The role of sports in a society such as South Africa in driving the developmental agenda cannot be over-emphasised. Sporting events do not only play an important economic role but are also useful catalysts in forging social cohesion and nation-building, albeit temporarily. The 1995 Rugby World Cup is a case in point. The picture of Nelson Mandela hosting the Cup with then Captain Francois Pienaar will forever be etched in history as a moment of non-racial triumphalism.

The impacts of mega-sporting events on the host city or region can be massive, and the idea that most outcomes are positive is widely acknowledged. Several authors, however, caution that these assumptions may

be short-term, where benefits are rarely made explicit and the ‘legacies’ – whether social, environmental, political, economic or sporting – also form part of the ‘known unknowns’, of sports mega-events (Jones 2001a:241; Campbell & Phago 2008:26; Horne & Manzenreiter 2006:9). Three critical questions need to be asked of mega-events: Are the results of hosting them sub-optimal development or clear unsustainability? Furthermore, are socio-economic benefits the only benefits, or is there a bigger picture? (Campbell & Phago 2008:26). What is the legacy that the event leaves with the host country?

Several studies focus on the social and economic dimensions of mega-events (for example Jones 2001a; 2001b; Bohlmann & van Heerden 2005; Matheson 2006; Campbell & Phago 2008). The focus of this article centres on the environmental impacts of mega-events, placing substantial attention on the key issues of sustainability in relation to event planning and design. Within this discussion, benefits are leveraged to minimise conflict, and specific strategies and approaches (including tools of environmental management) are illustrated to integrate the triple bottom-line considerations. The article then draws attention to environmental aspects that are likely to be unique to specific contexts, through the use of the FIFA World Cup’s ‘Green Goal’ and Olympic Games’ ‘Green Games’ programmes as examples. The next section argues that mega-events provide unique opportunities to learn from experience and inform environmental education in nations hosting future mega sporting events. The article further advocates an integrated analysis of the triple bottom-line as fundamental to the planning, design and evaluation of events, and makes recommendations for the hosting of future mega-events.

Key Issues

Legacies are defined as ‘all planned and unplanned, positive and negative, intangible and tangible structures created by and for a sport event that remains for a longer time than the event itself’ (Preuss 2007:86), and act as catalysts for change in the host country (Bob *et al.* 2008:49). Yet until recently, ‘legacies and sustainable (that is, maintained over the long-term) development have historically been given little thought while planning a mega-event’ (Koenig & Leopkey 2009:2). Mega-events also require massive

investments with anticipated high Return on Investments (ROIs) by host countries, with the anticipated long-term economic benefits accrued through tourism and business investments (Bob *et al.* 2008:49). While mega-events in all probability generate several positive benefits, this section interrogates the less contested (negative) environmental impacts, suggested in Table 1, which could result in various forms of environmental conflicts.

Table 1: Environmentally-relevant aspects of large sporting events (adapted from Schmied *et al.* 2007:13)

<i>Mega-event</i>	<i>Environmental Impacts</i>									
Marathon / Triathlon / Runs	Climate	Transport	Energy	Waste	Consumption of materials	Water/Wastewater	Nature and Landscape	Noise	Catering	Merchandising
Motor sport										
Skiing										
Riding										
Football										
Water sport										
Golf										
Beach Volleyball										
Athletics										
Tennis										
Other										

Environmental Impacts of Mega-events

The positive aspects of the environmental impacts of mega-events most frequently relate to the new physical infrastructure such as stadia, transport infrastructure, airport capacity and upgrades in water and sewage services that might not have been politically or financially feasible without the event (Dodouras & James 2004:5). However, Davenport and Davenport

(2006:281), attest to the reality that the greatest ecological threats that any form of mass tourism creates, indisputably lie in the infrastructure and transport arrangements required to support it (such as the physical development of resorts, consumption of fuel by buildings, aircraft, trains, buses, taxis and cars, overuse of water resources, pollution by vehicle emissions, sewage and litter), which accrue into substantial, often irreversible, environmental degradation as well as social consequences.

Furthermore, mega-events provide a rationale for 'fast-tracking' urban regeneration developments (and the allocation of scarce resources) that otherwise might have taken a longer period, thereby raising questions on the thoroughness of environmental impact assessments (EIA) process, the level of public participation (if they occur at all) and the need and desirability for these changes on local constituencies (Lenskyj 2000 in Malfas *et al.* 2004:215; Silvestre 2009:7).

Several authors raise issues around the lack of correlation between the pre-event investment in optimistic projections (benefits) and post-event outcomes, which are difficult to assess quantitatively, being complex and often occurring over extended periods (Malfas *et al.* 2004; Dodouras & James 2004; Collins *et al.* 2009), and there may well be environmental costs. An examination of the mega-event specific literature reveals, however, that the environmental impacts are very often overlooked, a position also supported in the recent academic work by Koenig and Leopkey (2009:14) and Jago *et al.* (2010:6).

Tourism development, particularly in developing countries is highly dependent on the appeal of their natural resources and landscapes, and is often associated with sensitive ecosystems (Butler 1990 in Sasidharan *et al.* 2002:166). Emerging literature suggests that mega-events have the potential to impact negatively on local ecosystems by bringing pollution and waste into some of the world's most biologically and culturally diverse areas; utilising reserves of irreplaceable natural capital; releasing carbon emissions contributing to climate change and the high consumption of energy and water during the event, often causing adverse impacts on the environment and local communities (Schmied *et al.* 2007:12; Jones 2008 in Collins *et al.* 2009:829). Mega-events and the Olympic Games in particular have often attracted criticism for their perceived negative impacts on sensitive locations, and

more recently in terms of contributing to climate change (Greenpeace 2004 in Collins *et al.* 2009:829).

At a time when the factors contributing to and impacts of climate change cannot be obviated from policies and practices in both the public and private sectors, the huge carbon footprints associated with mega-events have honed in on the attention of the world (Collins *et al.* 2009:828). According to Gossling (2002:200), transport, primarily in the form of air traffic, is liable for the greater part of the environmental impacts associated with long-distance tourism, for example, more than 90% of a typical journey's contribution to climate change. Schmied *et al.* (2007:15) concur that transport was responsible for approximately 90% of the greenhouse gas of all large sporting events in Germany in 2005. The authors present calculations on the break-down of emissions:

... the 25.6 million visitors to large sporting events in 2005 accounted for emissions of around 210,000 tonnes of greenhouse gases, that is, 8.0 kilograms per visitor. Travel on the part of some 500,000 competitors gave rise to total emissions of around 60,000 tonnes, which correspond to about 100 kg per person. This high figure is due, above all, to air travel to and from Germany by international competitors (Schmied *et al.* 2007:15).

According to Pellegrino *et al.* (2010: 2), the carbon footprint of the 2010 FIFA World Cup was expected to exceed that of the 2006 FIFA World Cup by nine times and weigh in at double that of the Olympics in Beijing. These larger carbon emissions was attributed to, in part the increased air traffic resulting from soccer teams and fans traveling increased distances abroad to attend the games, as well as from travel between widely separated hosting cities, as well as South Africa's reliance on coal for fully 90% of its energy (Pellegrino *et al.* 2010:2). A further contributing factor is the physical structure of its cities which are largely sprawling in structure. Electricity generation in South Africa is a particularly contentious issue due to the power outages that the country has faced just prior to the hosting of the World Cup. Jones (2001b:858) maintains that these outages will probably continue beyond 2010, and questions whether trade-offs between the host cities' demands will divert services away from other areas of the cities,

resulting in conflicts across geographic lines. Power outages were not experienced during South Africa's hosting of the FIFA World Cup. According to the Department of Environmental Affairs and Tourism (DEAT) (2010:13), South Africa has abundant renewable energy capacity in light of the fact that it has some of the highest levels of solar radiation in the world and good wind power generation potential in many parts of the country. The Department of Mineral Affairs (2004 in DEAT 2010:14) state that the national Government has set a target of 4% renewable energy of total energy demand by 2013. Whether this initiative received impetus due to the World Cup or not, the probe into renewable energy is heralded as a move in the responsible direction to meet the country's rapidly urbanising and industrialising needs.

Transport activities are another large contributor to carbon footprints, accounting for up to 50% of the energy use in South Africa (DEAT 2010:57). The country's inadequate public transport and an excellent road infrastructure has created a powerful momentum for private car use by middle and higher-income classes but more than 63% of the working population rely on inadequate public transport or non-motorised transport (Greening2010 2010). While strategies were put in place to cater for tourist transport needs during the World Cup (such as rapid transit systems, airport upgrades and cycle pathways) (DEAT 2010:57; Greening2010 2010), and the country ploughed impressively into improving the public infrastructure (some R3.8 billion) (Grundling & Steynberg 2008:20), there was no concrete effort put into developing a legacy of sustainable public transport system in the country. In retrospect, the massive investment in roads infrastructure, juxtaposed with sprawl further reinforce the sustained use of private transport.

Water issues chronologically follow on from climate issues, as water stresses and quality issues are gaining momentum as a matter of urgency in many parts of the world. The focus in water management is also increasingly shifting from water supply to demand management. The link between tourism and water availability and quality are significant issues, often because tourists shift their water demand to other regions, often water scarce areas like coastal zones (Gossling 2002: 284). Furthermore, they seem to use substantially more water on a per capita basis than at home, thus increasing global water demand, for example, the World Wildlife Fund (2000 in

Gossling 2002:284) reports that the average tourist in Spain consumes 440 litres per day, a value that increases to 880 litres if swimming pools and golf courses exist, thus tourism may substantially increase the overall use of water in coastal areas. In the Mediterranean, every tourist consumes between 300 and 850 litres of water per day through waste, recreation and drinking water (De Stefano 2004 in Cooper 2007:14). In certain cases, tourist peak seasons often do not coincide with corresponding water availability. This was the case in Durban, South Africa, which receives rainfall in the summer months, while the World Cup was staged in winter. Coastal Durban has the potential to explore the use of water desalinisation plants to meet its water demands, both in terms of the World Cup and the city's future water needs, however, the option was not considered. Conversely, according to Ahmed (2009:202) the provincial priority focus is on increasing the number of dams to facilitate water demand concerns.

Water quality issues in terms of organic and solid waste pollution, ranging from a multitude of land based and marine sources are presenting particular stresses for tourism, both with dire long-term threats to human health, economic activities, biodiversity and recreational and tourism opportunities in many parts of the world (Chia 2000:1). On the land side, infrastructure investment mainly in pollution prevention issues, such as sewerage, wastewater and solid waste management, has fallen behind schedule due to the lack of adequate planning, legislation and financing (Burak *et al.* 2004:519), resulting in pollution of groundwater, water courses and coastal waters from untreated sewerage and other contaminants. These problems, linked with tourism, are likely to exacerbate problems faced by the host populations in cities in many developing countries thereby positioning tourism in direct conflict with host populations.

Land (including strategic aquatic environments) alteration is seen as the single most important component of global environmental change affecting ecological systems (Vitousek *et al.* 1997 in Gossling 2002:284) through direct conversion for the development of tourist infrastructure, indirect conversion through fragmentation, as well as additional land and water as burying grounds for solid wastes (Gossling 2002:284). This indicates the huge ecological demand that tourism places on the environment, both in terms of consumption of resources as well as the waste assimilation capacities of ecosystems. According to Petschel-Held *et al.* (2006:143),

drivers of ecosystem change often interact with one another in synergistic ways, for example, they can trigger each other, reinforce each other, or constrain each other. Focus group discussions emerging from a study conducted on the rapidly transforming KwaZulu-Natal north coast of South Africa revealed that while the 2010 FIFA World Cup received extremely low priority as a direct driver of land use change in the area, it was seen as the indirect driver of tourism investment and infrastructure ahead of the 2010 event (Ahmed 2009:195). This investment in transformation, occurring in the absence of a strategic environmental assessment, was found to be impacting negatively on the area's biodiversity.

One often views the impacts of an event as those occurring only during the event. However, the United States Department of the Interior (1993 in the Island Resources Foundation 1996:10) further allude to the often low prioritised and subsidiary environmental impacts that occur during the event's planning and construction phases (Table 2), which probably impacts more on residents than tourists. These relate to traffic congestion, noise disturbance, local pollution, disruption to water services, and so forth. However, those impacted upon are rarely able to form community groups and protect their interests, as was the case of the construction of the Olympic Stadium in a working class neighborhood in Rio de Janeiro which was marked by community disturbance and public by-pass where local residents were not provided with detailed information regarding planned works and possible implications (Silvestre 2009:6). According to Cochrane *et al.* (1996 in Silvestre 2009:10), during the bid phase the host city showcases its strengths and opportunities while minimising or even denying its weaknesses and threats. In this light it is easy to understand uncertainties about public scrutiny (Silvestre 2009:10).

Respondents from the focus groups in the study conducted by Ahmed (2009:195) commented on the long-term viability of the 2010 driven investments by arguing that 'it is an attempt to show the best face of South Africa and lots of business linked to infrastructural and building development is generated because of 2010, but a key issue is the long-term sustainability of these development projects as no other major event is planned for after 2010'. Furthermore, '2010 is just a smoke-screen for encouraging foreign investor confidence in the area'.

Table 2: Environmental Impacts arising from Tourism Planning and Construction (adapted from The United States Department of the Interior 1993 in the Island Resources Foundation 1996:10)

<i>Management Practice</i>	<i>Pollution</i>	<i>Physical Processes</i>	<i>Biological Systems</i>
Site access, construction and landscaping	Noise Petroleum spills Vehicle pollution Toxic releases Traffic congestion	Surface water disruption Erosion Sediment Soil damages	Altered/ destroyed habitat and vegetation Reef impacts Exotic species introduction
Energy systems	Toxics released or spilled Air quality/ odors Petroleum Noise	Soil removed or disturbed	Altered/ destroyed habitat and vegetation Road kills Reef impacts
Water systems	Toxics released Noise, air, vehicles Hot water	Soil disturbed Water flow disrupted	Altered/ destroyed habitat Altered/ destroyed vegetation Reef impacts Exotic species supported Food chains altered
Waste disposal	Noise Air quality/odors Petroleum Spills Vehicle pollution Toxic releases	Soil disturbed Water flow disrupted groundwater used	Diseases introduced Altered habitat/ vegetation Roadkills Exotic species supported Food chains altered

Walls and fences	Toxins released	Soil disturbed Water flow disrupted	Destroyed habitat/vegetation Barriers to wildlife Life cycles disrupted
Operations and maintenance	Noise Toxins released Petroleum released	Erosion Sedimentation Water flow disrupted	Altered/ destroyed habitat and vegetation Reef impacts Exotic species supported Life cycles disrupted

Sustainability of Mega-events

‘Sustainable events are those that can endure indefinitely without consuming or spoiling the resources upon which they depend’ (Getz 2005:123). Considerations of sustainability usually take a long-term (50+ years) outlook, require a holistic and integrated view, need to consider different societal domains (social, ecological and economic) and occur at different scales (global to local) (Rotmans *et al.* 2001 in LOICZ 2001:37. To the contrary, mega-events are by their very nature, short-term events of fixed duration, intrusive activities (a diversion from normal processes and/or actors), have the potential to consume extensive resources and are usually legitimated by optimistic economic forecasts that enhance their desirability (Hiller 1998:47). Furthermore, as Collins *et al.* (2009:830) discuss, the issues facing event organisers and management regarding sustainability are necessarily complex, where the discussion pertaining to the environment has focused, when it occurs, on the physical and natural environment with decision-makers in an event sustainability assessment also having to grapple with the socio-cultural and economic dimensions of sustainability (triple bottom-line considerations). Dodouras and James (2004:5) further state that valuation techniques/processes rarely employ integrated triple bottom-line issues

successfully, predictions are often incorrect and as a result the decision-making processes do not rely heavily on this information.

Local development guidelines in both developed and developing countries, including the standpoint of the International Olympic Committee (IOC) now require environmental impact assessments (EIAs). However, EIAs have been criticised for being site specific, a mere tool to predict the likely impacts of intended projects, do not prevent government superseding impact recommendations, and do not deal with holistic questions of the impact of the event itself (Dodouras & James 2004:4). The mega-event and sustainability literature is thus aggregating towards more strategic and integrated assessments which imply that practitioners and decision-makers should exert influence from the very beginning of a project development until after project completion (Hiller 1998; Dodouras & James 2004, Collins *et al.* 2009). To date, strategic environmental assessments (SEAs) are not a legislated environmental management tool in South Africa, and hence, projects are undertaken on an ad hoc basis. Where an SEA is undertaken, it is done so by initiative rather than mandated. Furthermore, South Africa is currently undergoing an environmental law reform process, one of the objectives of which is to establish an integrated and internally consistent system of environmental laws for South Africa (DEAT 2006 in Ahmed 2009:137). There is a sense that both the tools of environmental management and the policy arena, although commendable, may not be sufficiently mature to deal with the scale of impacts generated by mega-events.

Integrated assessments are currently gaining momentum in mega-event research. They are characterised by the practice of combining different strands of knowledge (interdisciplinary) to accurately aid decision-making (Dodouras & James 2004:5). Its distinguishing feature, as opposed to disciplinary research, is its policy dimension, aiming to inform decision-makers on the complexity of real world problems (Dowlatabadi & Rotmans 2002 in Dodouras & James 2004:5).

Emerging literature, such as that advocated by Chalip (2004) is beginning to draw attention to leveraging the positive benefits of an event, drawing more on qualitative studies to analyse the equity of benefits and to explore the most productive strategies for enabling host communities to benefit from an event. Chalip (2004:228) argues that ‘a shift in thinking from event impact to event leverage mandates a shift in the ways that events are

planned, managed and evaluated'. Sweeting *et al.* (1999:17) assert that the transition from ideals of sustainability to responsible practice will necessitate a fundamental shift in the industry as a whole, including those with governments, local communities, international development agencies, non-governmental organizations (NGOs) and international tourism organisations. The authors stress that sustainable tourism development will require an integrated approach, comprised of:

- participatory land-use planning including the use of focus group discussions, resident perceptions (Swart *et al.* 2008:123) and participatory geographic information systems (GIS);
- private sector practices which both mitigate negative impacts and actively support conservation and local benefit; and
- the implementation of a range of public sector policies to promote responsible development (Sweeting *et al.* 1999:17).

Horne & Manzenreiter (2006:17) underscore the importance of integrated research into planning and organising mega-events, and highlight the following key characteristics:

- the adoption of methodological pluralism and theoretical openness;
- theory should be seen as a process, not an accomplishment; and
- theoretical oppositions, or dualisms, should be mobilised to address certain substantive concerns, rather than argued away.

The analysis of the impact of mega-events has incorporated frameworks that assess different impacts under different criteria; for example, separating impacts according to whether they occur before, during or after the event itself (Li & Blake 2009:1). Hiller (1998:51) concurs by proposing a longitudinal analysis of events; that is, viewing the event as not just a point in time but one that is:

- preceded by a social context which the event may alter or of which it may be a product. The *pre-event* period highlighted in backward linkages is important because it reveals how the event was both

intrusive and transformative of a prior situation. The focus on pre-event analysis is on conditions before the event so that it becomes clearer what role the event played and with what effects;

- The second point in time is during the *event* itself so that short-term impacts can be isolated from long-term impacts. For example, job creation and immediate tourist revenues may be desirable immediate benefits but increased prices or traffic congestion may be perceived as negative though clearly short-term (Jeong & Faulkner 1996 in Hiller 1998:51); and
- The third point in time is *post-event* where legacy is not only interpreted as permanent effects but the readjustments to normality or the adaptation to changed conditions caused by the event.

Assessing the environmental impacts of mega-events require a two-pronged approach, focusing attention on both the effects of policies which promote them as well quantifying the externalities linked to event-related infrastructure and consumption (Collins *et al.* 2009:829). The authors highlight the following, in terms of evaluating, benchmarking or certifying the effects of policies to mitigate environmental impacts:

...life cycle analysis, cost benefit analysis, and with procedural and process tools available such as sustainable procurement, ISO (International Organization for Standardisation) certification, and environmental management systems;

They add the following related to quantifying selected externalities linked to event infrastructure and event-related consumption:

Ecological Footprint focusing on the global impacts of resource consumption activity and the Environmental Input–Output approach focuses on more local effects (Collins *et al.* 2009:829).

Schmied *et al.* (2007:12) indicate several pro-active environmental measures in large and mega-events which pave the path to hosting sustainable events in the future:

- large events fulfill an exemplary and multiplier function for smaller events;
- large events can be a communications platform for environmental topics and sensitise visitors to ecological matters, also in everyday life; and
- large events can also improve the image of event organisers, sponsors, sports associations and regions.

Environmental Education and Mega-events

According to Koichiro Matsuura, Director-General UNESCO (UNESCO 2005:4):

Education – in all its forms and all its levels – is not only an end in itself but is also one of the most powerful instruments we have for bringing about the changes required to achieve sustainable development.

Numerous studies (Smith 2002 in Ahmed *et al.* 2008:79) have sought to emphasise the importance of understanding the levels of environmental awareness among users of the natural resource base. This is in light of the fact, and as demonstrated in this literature, that the natural environment and sport events are two realms that are often in conflict.

Events are targeted as opportunities to demonstrate best practice models in waste management, for example, and to change public attitudes and habits (Allen *et al.* 2002:35). 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 (Ahmed *et al.* 2008:79). This message has primarily been advocated through event greening information and initiatives. Event greening refers to the organisation of events, by event managers, in such a way that it supports the triple bottom-line principles of sustainable development. This is typically done through successfully implementing programmes and practices which have a minimum or no impact on the natural resources base (such as water, energy, waste and biodiversity)

throughout the life cycle of the event, from conceptualisation to finish, and is an intensely deliberative process, thereby minimising potential conflict (DEAT 2010:2). Furthermore, it contributes towards job creation, skills development and other income generating activities (DEAT 2010:2).

The focus on improving the environmental awareness and education of nations hosting mega sporting events became increasingly evident with FIFA's Green Goal and the Olympics Green Games Programmes. The Green Goal was first implemented at the 2006 FIFA World Cup in Germany. Bob (2010:11) states:

The Green Goal, the Local Organising Committee (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 and 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 focused specifically on water, waste, energy and transport. It also provided 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.

Given that the Green Goal was part of the 2010 FIFA World Cup's planning, and with Germany previously laying the foundation for the Green Goal legacy, it was imperative that the 2010 World Cup also sufficiently considered environmental issues. The mega-event literature is increasingly allied with the idea of 'leaving a legacy', as this article has demonstrated. Bob *et al.* (2008:52) maintain that legacies include 'issues of sustainability' (the focus on the 'Green Games'), the development of hard (infrastructure) and soft (education, culture, skills development) components to gauge tangible and long-term impacts, as well as the transfer of knowledge (TOK) programme which was started in Sydney and has been central to passing on information and thereby avoiding mistakes of the past'. Furthermore, understanding consumption patterns, socio-economic characteristics and desirous activities relating to event visitors are important to ensure

appropriate and effective planning and development of the sport event, especially in relation to environmental education and conservation efforts (Ahmed *et al.* 2008:79).

To this end, the DEAT, the lead government agent in promoting and managing the environment for sustainable development in South Africa, has developed several guidelines for the education, awareness raising and management of mega-events (such as ambassador and green volunteer programmes). These guidelines reflect recommendations and international benchmarks carried over from countries which have hosted such events in the past, indicating that South Africa has built on prior knowledge in the events management repertoire. Integrated within the context unique to South Africa, DEAT has produced guidelines with regard to the following:

- Climate change and energy;
- Waste minimisation and management;
- Water conservation and management;
- Sustainable procurement;
- Biodiversity;
- Transport; and
- Design and construction

Conclusion and Recommendations for Hosting Mega-events

The discussion ensuing from the literature in this article indicates that environmental considerations command a significant component in planning and managing mega-events. Furthermore, the article has demonstrated that intricate threads link up these environmental issues with the social and economic, hence the need for integrated and ‘bigger picture’ assessments of mega-events. The hosting of the World Cup in South Africa has produced both tangible (infrastructure) and intangible (civic cohesion and nation-building) legacies for the country. However, the environmental legacies are simply assumed and not made specific. For instance, while DEAT’s guidelines are applauded, they run the risk of appearing as mere politically correct sales pitches. They are not reflective of the *state* of the natural environment (apart from indicating generic threats to the environment, they

do not reflect sink capacities or thresholds for acceptable limits to change of natural resources), nor its interlinks with the other dimensions of sustainable development. For example, unless underlying issues are addressed, as in the case of developing a sustainable public transport system, the environmental aspects stand little chance of critical attention. Furthermore, the guidelines are not apparent regarding South Africa's environmental management capacities in terms of legislation, tools and institutional maturity, as this article has indicated. This article has demonstrated that South Africa's hosting of the FIFA World Cup has translated into sub-optimal development and not sustainable development.

Building on these findings, the following are recommended, should South Africa win the bid to host the Olympic Games:

- a legislated mega-event framework;
- dialogue and consultation with communities and residents;
- the legislation of strategic environmental management tools to assess the nature and scale of mega-events;
- informed and updated state of the environment reporting, and transparency in this regard; and
- the no-go option (in specific environmentally sensitive locations) of hosting mega-events in the future.

These aspects are also relevant not only to mega-events but should be adapted to the hosting of all events, irrespective of their scale.

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