

Beyond Legal Compliance: The Environmental Performance of Luxury Safari Lodges

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How to cite this article: Alberts, R.C., Retief, F.P., Roos, C., Gillars, D.P., Moolman, J., Bowers, J., MacGregor, S., Weir, F.H. & Olivier, I. (2022). Beyond legal compliance: The environmental performance of luxury safari lodges. African Journal of Hospitality, Tourism and Leisure, 11(2):. DOI: <https://doi.org/10.46222/ajhtl.19770720.252>

Abstract

The aim of this paper is to evaluate the environmental performance of luxury safari lodges along a performance pathway from legal compliance to best practice. The research results provide a conceptual framework and performance baseline against which lodges can then develop strategies to improve environmental performance. We achieve this aim by adapting the sustainability journey conceptual framework of Willard (2005), that describes

five phases of progression along a business performance pathway, from legal compliance to best practice. Performance areas and indicators are developed against the adapted framework covering water, waste, energy and infrastructure development, applied to 12 luxury safari lodges within the South African context. The results show that poor performance was recorded for water management, whilst energy management fared slightly better. Overall performance in relation to waste and infrastructure development fared the best.

Keywords: luxury safari lodges; legal compliance; environmental performance; best practice

Introduction

Tourism revenue is a major source of income for many countries, especially in the developing world (Gossling, 2012; Gumede & Nzama, 2019; Manrai et al., 2020). In many developing regions such as Sub-Saharan Africa, the tourism potential and focus is nature based or eco-tourism (Sasha et al., 2020). To exploit the socio-economic potential, such tourism development and investment is actively promoted in these regions. A potential key sector in leveraging eco-tourism and accompanied economic growth is high end luxury safari lodges (Lindsay et al., 2020). These luxury safari lodges are typically understood as high-cost, low-volume accommodation establishments that offer tourists a combination of spectacular experiences (usually involving wildlife, landscape or culture) with comfortable levels of hospitality, cuisine and accommodation (Rogerson et al., 2013). However, the development and operation of these facilities present significant environmental challenges and potential impacts because of *inter alia* their location and the type of tourism product that is offered (Roos et al., 2021). It is well understood that sustained long term business success in the eco-tourism industry is inextricably linked to environmental performance (Baker & Mearns, 2017). For this reason, it is important to evaluate the environmental performance of such facilities towards ensuring a long-term sustainable business model. Therefore, the aim of this paper is to evaluate the environmental performance of luxury safari lodges along a performance pathway from legal compliance to best practice beyond legal compliance. The research results provide a conceptual framework and performance baseline against which lodges can then develop strategies to improve environmental performance.

Environmental performance and high-end luxury safari lodges

Environmental and/or sustainability performance of tourism and high-end luxury safari lodges has received growing attention (Baker & Mearns, 2017; Morrison-Saunders et al., 2019; Retief et al., 2022). Literature points out that despite often being focussed on ecotourism, luxury consumer demands for facilities such as spas and pools, infrastructure such as landing strips and the long distances travelled to get to the often remote locations can create large ecological footprints (Gossling et al., 2002; Ryan & Stewart, 2009). Furthermore these lodges consume large quantities of resources and are reliant on the adequate supply of water and energy (Logan, 2015). It is also highlighted by Hall and Page (1999) that tourism's success or failure is conditional and ultimately dependent on an environment that is attractive, healthy and pleasant. Should the natural environment and its resources be damaged or destroyed, the very resource that attracted the tourists is destroyed and the tourism venture as a whole (economically, socially and environmentally) is compromised and is at risk of collapse (Baker & Mearns, 2017). The question of the compatibility between luxury and environmental performance is thus an important one for many lodges. To this end, Low (2010) argues that luxury tourism has not been given much attention in the academic tourism literature, but has been a major topic in consumer behaviour and marketing research. Despite this, the literature suggests consensus that specific environmental performance areas of importance are water, waste, energy and infrastructure development (Alberts et al., 2021; Gossling, 2012; Morrison-Saunders et al., 2019; Roos et al., 2021).

The tourism industry, including luxury safari lodges is linked with high water consumption, linked to the high standard of facilities and surroundings at the lodges, including swimming pools and lush gardens. Adding to this is the fact that lodge guests tend to have more wasteful approach to water when on holiday (Omune et al., 2021).

The generation of waste by high-end luxury lodges is one of the visible effects that the lodge has on the environment. There is a variety of waste produced by lodges whereby; paper and food waste are the greatest amount of waste generated by the hotels. The food and beverage service areas within these lodges generate various solid and organic wastes such as packaging, food waste, aluminium cans, glass, bottles, corks and cooking oils (Roos et al., 2021). Energy efficiency and conservation measures rank amongst the top responsible tourism expectations of visitors to protected areas (Morrison-Saunders et al., 2019). It is also considered to be a key indicator of sustainable ecotourism for protected areas (Van der Merwe et al., 2017). Energy is an important resource for high-end luxury lodges, of which a large portion is used for lighting, heating, Air-conditioning and laundry facilities (Mbaiwa et al., 2018). Literature suggests a strong reliance on fossil fuels with minimal use of renewable resources. (Mbaiwa et al., 2018)

When considering the above, the environmental performance of high-end luxury lodges could be better understood if considered along an environmental performance pathway. This allows lodges to consider their current environmental performance along a pathway and trajectory of continual improvement. The latter is important not only to inform individual business strategies but also to compare performance with direct competitors. In keeping with the aim of this paper, which is to evaluate the environmental performance of luxury safari lodges along a performance pathway from legal compliance to best practice, we focus specifically on water, waste, energy and infrastructure development and management legal requirements and best practice.

Conceptual framework

Various pathways have been conceptualised for improved business performance generally, but more specifically in relation to environmentally responsible and sustainable business practice (see for example Renssen et al., 2014; Sroufe, 2018; Willard, 2005). These pathways resemble a common trajectory, which is a performance progression from legal compliance as a point of departure, to best environmental practice for the particular business sector. However, environmental performance evaluation of high-end luxury safari lodges along a performance pathway is lacking in the literature.

We achieve the aim of this paper which is to evaluate the environmental performance of luxury safari lodges along a performance pathway from legal compliance to best practice , by adapting the sustainability journey conceptual framework of Willard (2005), that describes five phases of progression along a business performance pathway, from legal compliance to best practice. Key performance indicators (KPIs) are developed against the adapted framework covering the Key Performance Areas (KPAs) of water, waste, energy and infrastructure development, applied to 12 luxury safari lodges within the South African context.

We use the Willard (2005) framework as a point of departure because it is sufficiently generic and has been successfully applied and adapted to different business contexts (Renssen et al., 2014; Sroufe, 2018; Willard, 2005). Figure 1 describes the conceptual framework for the paper in light of Willards (2005) adapted environmental performance pathway for luxury safari lodges:

- Phase 1: Increased awareness of non-compliant operational practices, and the adoption of measures to initiate a move towards environmental legal compliance.
- Phase 2: The achievement of full environmental legal compliance through integrated operational processes and strategies.

- Phase 3: Lodges begin to adapt operational and strategic processes to realise the opportunities presented by moving beyond legal compliance, with considerations such as brand image, client expectations and resultant financial opportunities coming to the fore.
- Phase 4: Measures are implemented to move beyond environmental legal compliance and to embrace environmental best practice into operational and strategic processes and strategies.
- Phase 5: Environmental legal compliance and best practice is achieved throughout integrated operational and strategic processes and strategies.

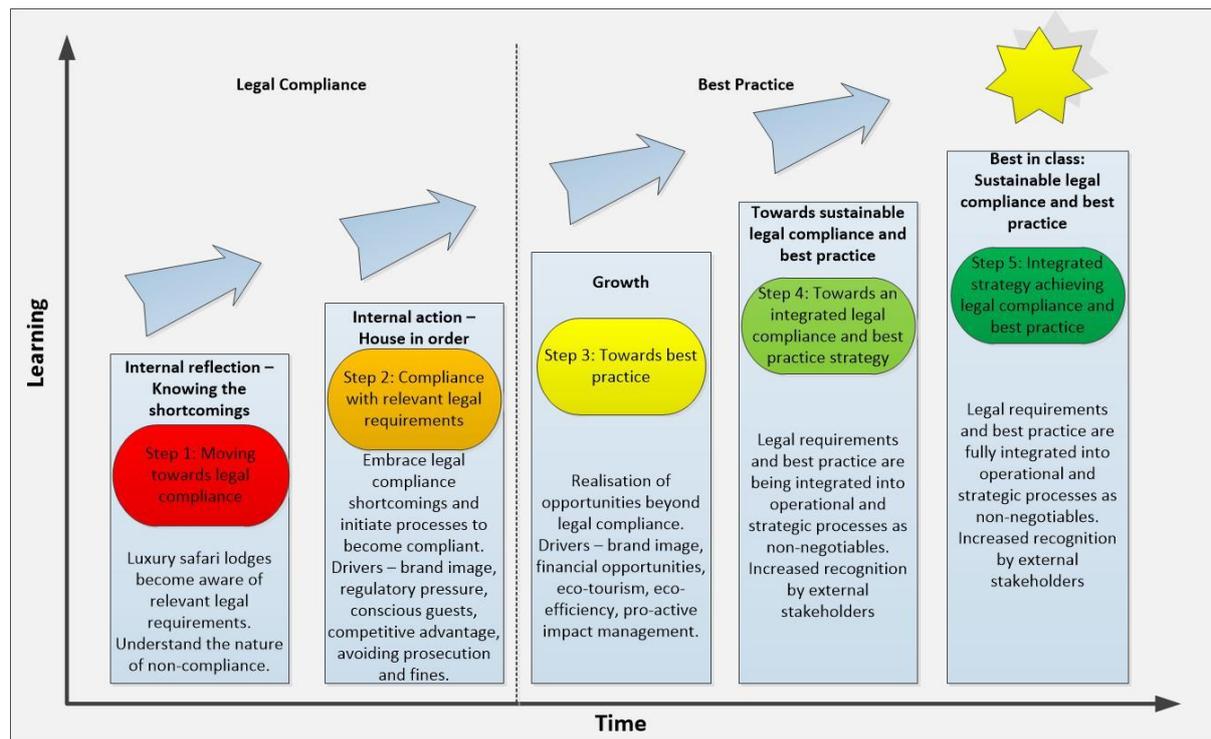


Figure 1: The luxury safari lodge environmental performance pathway (Adapted from Willard, 2005)

The next section explains the research methodology after which the results are presented and conclusions and recommendations are made.

Method

This section explains the methodology adopted pursuant to the stated aim of the research, commencing with a discussion on the case study design

Case study design

In keeping with the aim of this paper, a case study approach was adopted. Experience in evaluation research suggests that case study approaches are particularly appropriate and that detailed investigation of ‘case’ rather than ‘sample’ is preferred (Eisenhardt, 2002; Yin, 2017). Moreover, it is also suggested that generalisation should apply replication logic rather than sampling logic, which means that the results could reasonably be expected to replicate for similar contexts, rather than claiming representation as in representative sampling methods. This is especially true for luxury safari lodges within the South African context, where the total number is unknown. An embedded case study design was therefore adopted (Yin, 2017) whereby multiple luxury safari lodges were evaluated within a specific context, namely the

Sabi Sand Private Nature Reserve (SSNR). Figure 2 shows the location of the SSNR along the western boundary of the Kruger National Park. The SSNR is comprised of 38 private properties, with 31 commercial luxury safari lodges and 26 non-commercial lodges and is recognised as being a world leader in the high-end luxury ecotourism market and has often been nominated under the Africa's Leading Private Game Reserve category of the World Travel Awards (WTA, 2021). SSNR was chosen due to its long history of recognised tourism excellence and high number of lodges operating in close proximity in the same SSNR context. Ultimately 12 of the 24 commercial lodges were selected for evaluation. Since the specific lodges chose not to be identified their specific location within the SSNR is not indicated in Figure 2.

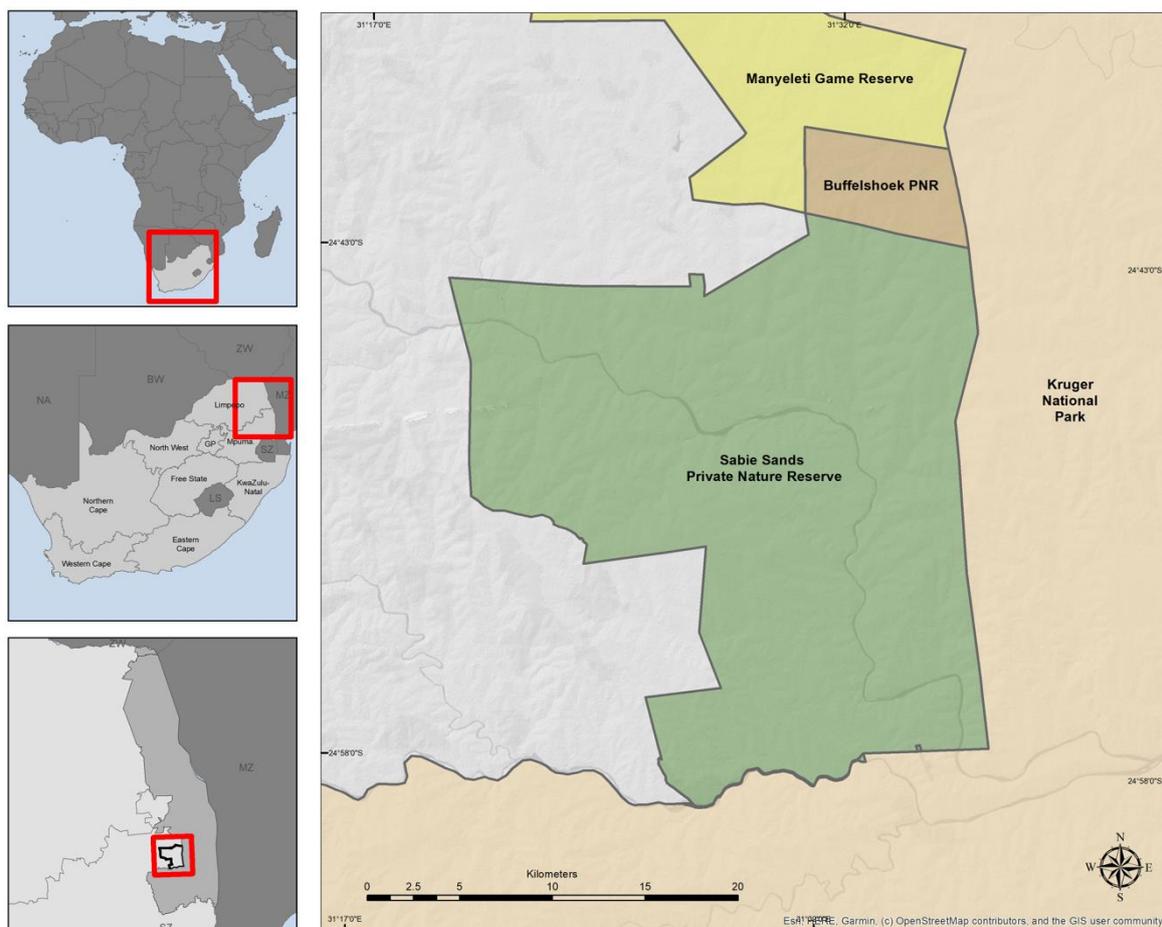


Figure 2. Location of Sabi Sand Nature Reserve (SSNR) Private Nature Reserve

Data gathering – KPI design and development

The performance evaluation is based on selected KPAs and related KPIs for legal compliance and best practice. The design of KPAs and KPIs is commonly used in performance evaluation research (Alberts et al., 2021; Retief, 2006), and in this case serves to structure the evaluation results in line with the conceptual framework in Figure 1. The selected KPAs are: water management, waste management, energy management and infrastructure development and management. These KPAs were identified from the literature as being critical to environmental performance (Alberts et al., 2021; Gossling, 2012; Morrison-Saunders et al., 2019; Roos et al., 2021). The KPIs are designed in relation to the KPAs as an indicative measurement of environmental performance. They aim to provide a key indicator but are not meant to be an exhaustive set of legal and best practice performance criteria nor are they meant to be a legal



audit. It was deemed to be unfeasible and undesirable to attempt to develop a full set of criteria related to every aspect of a lodge’s environmental performance, since many would simply not be empirically measurable. In line with previous performance evaluations (Alberts et al, 2021; Lawrence, 1997; Retief, 2007, 2007b), we have applied the following three KPI design criteria, namely:

- KPIs should be objectively and empirically measurable (albeit on subjective evaluation scale);
- Data for evaluation against the KPIs should be readily available;
- The KPI should be explicitly applicable to a legal or best practice requirement in relation to environmental performance of the lodge.

The 65 environmental performance KPIs were designed based on:

- Relevant South African legislation regulating environmental performance of high-end luxury safari lodges.
- Selected international and South African best practice principles and guidelines relevant to the environmental performance of luxury lodges.
- Specific guidelines and management documents which incorporate legal requirements and best practice and which are applicable to lodges operating within the SSNR.

Evaluation process and analysis

The 12 selected lodges were evaluated against the KPIs by suitably qualified environmental reviewers with in-depth and practical knowledge of the applicable legal and best practice requirements within the luxury safari lodge context. The reviewers awarded an evaluation score per KPI by using symbols as set out in table 1. The KPIs were scored based on the availability of verifiable evidence gathered during a site assessment, involving interviews, document reviews and an inspection of the reserve, as well as infrastructure data that was collected and provided by the SSNR management authority. Scores awarded for each of the KPIs were discussed by the reviewer and a representative of the lodge having responsibility and competency in the specific areas being evaluated., thus addressing potential subjectivity and bias.

Table 1: Evaluation symbols awarded per KPI

Symbol	Explanation
A	Meets legal or best practice requirements.
B	Meets legal or best practice requirements, minor omissions and/or inadequacies.
C	Does not meet all minimum legal or best practice requirements with omissions or inadequacies
D	Does not meet minimum legal or best practice requirements.
NA	Not applicable and irrelevant in the context of the evaluation.

Once all the cases were evaluated, the evaluation scores were consolidated. Four reviewers evaluated the overall KPA performance (based on the KPI scores) per lodge as well as the overall KPI performance across all lodges. This allowed for pattern analysis across the KPIs and lodges which resulted in five possible performance scores being awarded in relation to holistic KPA performance as shown in Table 2.

Table 2: Overall performance grades per KPI across all lodges and per lodge KPA

Performance Score	Explanation
Very good	Specific KPI scored Only A or Mostly A and B
Good	A, mostly B and very limited C or D scores
Average	Balanced scores between A/B and C/D
Poor	Mostly C with limited B and D
Very Poor	Mostly D and C with very limited B and A

In keeping with the aim of the paper, the KPA performance scores for each lodge were then plotted on an adapted environmental performance pathway (Figure 7) which allowed for an analysis of the individual lodges' environmental performance in relation to legal requirements and best practice. This resulted in 48 scatter points (one per each of the twelve lodges for each of the four KPAs). Basic patterns were distinguished based on the legal compliance and best practice performance groupings, allowing for a better understanding of performance against the environmental performance pathway explained in Figure 1.

Results and discussion

The following section discusses the results of the evaluation structured around the four key performance areas namely, water management, waste management, energy management and infrastructure development and management.

KPA1: Water management

The overall results as set out in Figure 3 in relation to water management across the twelve lodges delivered 30 As, 53 Bs, 48 Cs, 136 Ds and 45 N/As. Of the 26 KPIs evaluated, the following performance results were achieved: none of the KPIs delivered very good performance, three of the KPIs delivered good performance, six delivered average performance, seven KPIs delivered poor performance and the remaining ten KPIs delivered very poor performance.

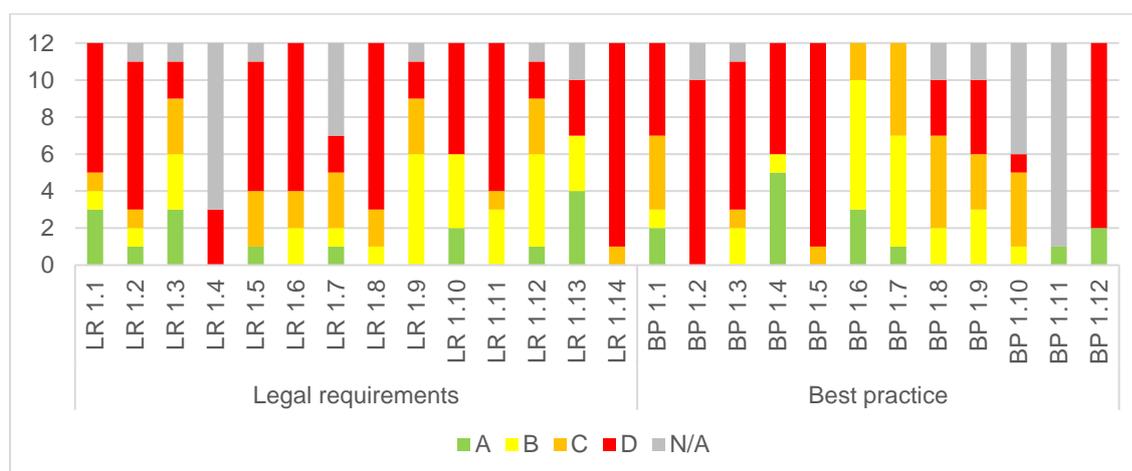


Figure 3. Performance of the twelve luxury lodges for legal requirements (LR 1.1 to 1.14) and best practices (BP 1.1 to 1.12) as it relates to water management (KPA 1)

The following particularly poor performance across KPIs is highlighted and discussed per review area. In regards to water abstraction (LR 1.1; LR1.2, LR 1.4, BP 1.2), the majority of the lodges evaluated scored poorly in relation to legal requirements and best practice applicable to water abstraction. Particular areas of poor performance were the failure to identify all water abstraction points and the subsequent authorisation of abstraction points as required by law. Where water use authorisation was granted for water abstraction, a lack of compliance to the relevant authorisation conditions was evident. Furthermore, lodges were not in a position to demonstrate that they were able to reduce the volume of water abstracted. Therefore, the results suggest a lack of information (location and volume) and legal control over water abstraction by the lodges.

The main areas of concern when considering water storage (LR 1.5, LR 1.6) are the lack of legal authorisation for storage and to what extent the water storage infrastructure such as dams and weirs impacted on water courses. Discharge of polluted water also proved to be

an area of concern (LR 1.8) and more specifically the authorisation of and compliance to requirements of polluted water discharge, was a concern. This aligns with the fact that the non-compliance to the conditions contained within water use authorisations is commonly observed within various economic sectors in the country (CER, 2012). In the majority of cases the lack of basic information regarding water abstraction and storage points were observed for the lodges and follow the current trends witnessed in the lack of information and data related to water use within the tourism sector (Gossling et al., 2012). It should however, be noted that for luxury safari lodges to operate and function as environmentally responsible tourist destinations, adherence to legal restrictions, supported by proper monitoring and assessment is essential (Bokov et al., 2019). When considering the protection of water resources (LR 1.11 and 1.14, BP 1.12), lodges performed poorly in relation to construction and development of infrastructure within regulated distances form water courses. Specifically, water crossings used by vehicles together with off-road driving within the regulated distances was an area of poor performance.

In relation to best practice for water conservation (BP 1.3, BP 1.5, BP 1.9) lodges performed particularly poorly with regard to the harvesting of rain water, the use of non-flushing toilets and the reduction in the number of artificial water reservoirs. Although limited, good performance was noted in relation to sand mining within water courses (LR 1.13) and the identification of all water storage sites and infrastructure (BP 1.6). The overall performance of water-related KPIs are, generally, considered to be poor to very poor, with the majority of lodges not conforming to legal requirements and best practice (Figure 7).

KPA2: Waste management

Figure 4 outlines the overall performance related to the waste management measures (KPA 2, Table 2) of luxury safari lodges. A total of 29 As, 33 Bs, 30 Cs and nine Ds were scored for the ten KPIs (Table 2) over the twelve lodges evaluated. KPIs were not applicable (N/A) in nineteen instances, mainly due to the majority of lodges not incinerating waste (LR 2.5) and not engaging in the on-site storage of pesticides (BP 2.4).

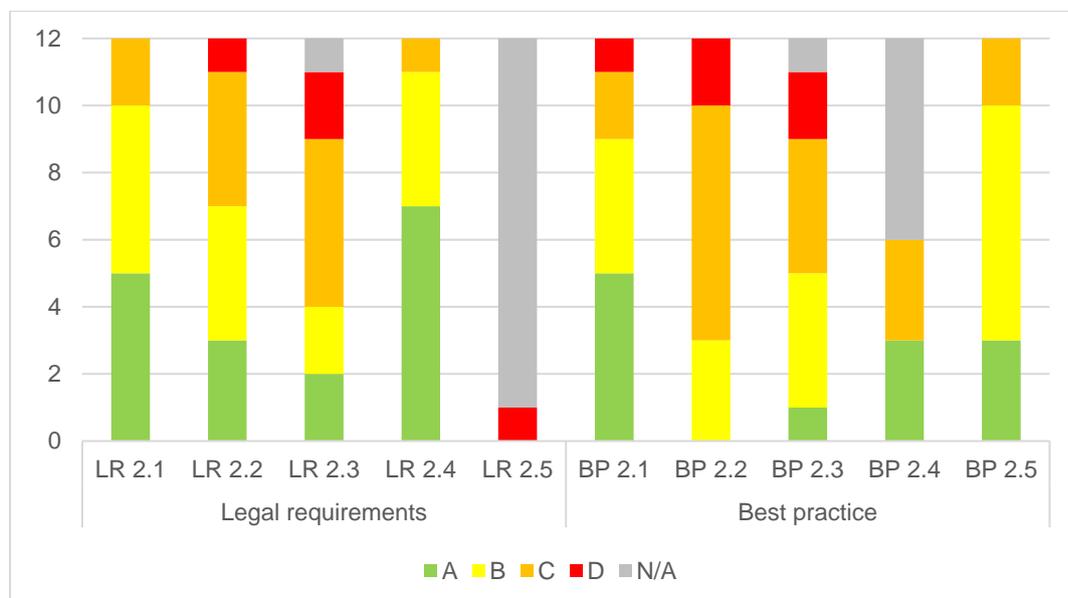


Figure 4. Performance of the twelve luxury lodges for legal requirements (LR 2.1 to 2.5) and best practices (BP 2.1 to 2.5) as it relates to waste management (KPA 2)

An evaluation of the individual performance per waste-related KPI (Figure 4) revealed that one of the KPIs (LR 2.4) delivered very good performance, and three of the KPIs (LR 2.1, BP 2.1

and BP 2.5) delivered good performance, while three of the KPIs (LR 2.2, BP 2.3 and BP 2.4) delivered average performance (Figure 4). Only two of the KPIs (LR 2.3 and BP 2.2) delivered poor performance, while the remaining one KPI (LR 2.5) delivered very poor performance. It should, however, be noted that the very poor performance of LR 2.5 is ascribed to only one lodge that is not incinerating their waste in accordance with legal requirements. The other eleven lodges did not engage in waste incineration. Poor performance in relation to waste management (LR 2.3) was mainly due to wastes not being identified and managed as hazardous waste. Lodges, however, typically generate small quantities of low risk hazardous waste, such as hydrocarbons, light tubes and car batteries, and potentially offensive and infectious wastes such as sanitary waste, and not large quantities of high-risk hazardous wastes. The management of non-recyclable waste (BP 2.2) scored poorly due to lodges not being able to demonstrate consistent separation of waste at source, and not providing evidence of waste being disposed of at authorised landfill sites.

Good performance was recorded in relation to the following review areas as discussed below. Waste reduction initiatives (LR 2.1) where lodges typically implemented initiatives around the re-use of glass water bottles, with the associated phase-out of single use plastics, as well as an increase in use of rechargeable batteries instead of disposable batteries; Good performance was also noted in relation to the management of organic waste (BP 2.1), where many of the lodges engage in the practice of separating organic waste from other waste streams, for composting purposes; and the involvement of communities in waste initiatives (BP 2.5), which include the provision of employment, education, awareness and support through mainly recycling programmes. Finally, very good performance was noted in relation to waste site collection management (LR 2.4), with the majority of lodges being able to demonstrate that waste sites and collection points at lodges are appropriately managed in terms of (i) adequate facilities for the storage and collection of waste; (ii) prevention of pollution, and (iii) protection from the elements (i.e. wind and rain) and (iv) prevention of animal access. The overall performance of waste-related KPIs are, therefore, generally, considered to be average to good, complying to the majority of legal requirements and conforming to best practice (Figure 7).

KPA3: Energy management

When considering the overall performance of the lodges for the six energy management KPIs (Figure 5), nine As, twelve Bs, 28 Cs and sixteen Ds were scored. KPI performance could not be determined (N/A) for seven of the cases evaluated, mainly due to a lack of documentary evidence or the absence of non-managerial staff during interviews to verify training relating to energy reduction measures (BP 3.4).

An evaluation of the individual performance per energy management KPI (Figure 5) revealed that none of the KPIs delivered very good performance. Good performance was recorded in relation to only one KPI, the use of green initiatives, such as the use of LED lights, heat pumps, energy efficient refrigeration and energy starred appliances, as well as the use of gas for cooking, to reduce power usage (BP 3.3). BP 3.2, the monitoring and metering of power usage, fared average. The use of renewable energy sources (BP 3.1), such as solar, wind and other alternative energy sources fared poorly. Only one of the lodges partially conformed to this best practice, while the majority of the lodges were still largely reliant on electricity from coal-powered power stations (with more than 50% of energy from power stations). Poor performance as also recorded for staff training on green initiatives for energy savings (BP 3.4). Only one of the lodges could partially verify conformance to BP 3.4, while six of the lodges did not conform, and five of the lodges could not be verified (N/A). The use of recycled waste and/or alien and invasive plants for energy supply (BP 3.5) could only be demonstrated by three of the twelve lodges and also performed poorly.

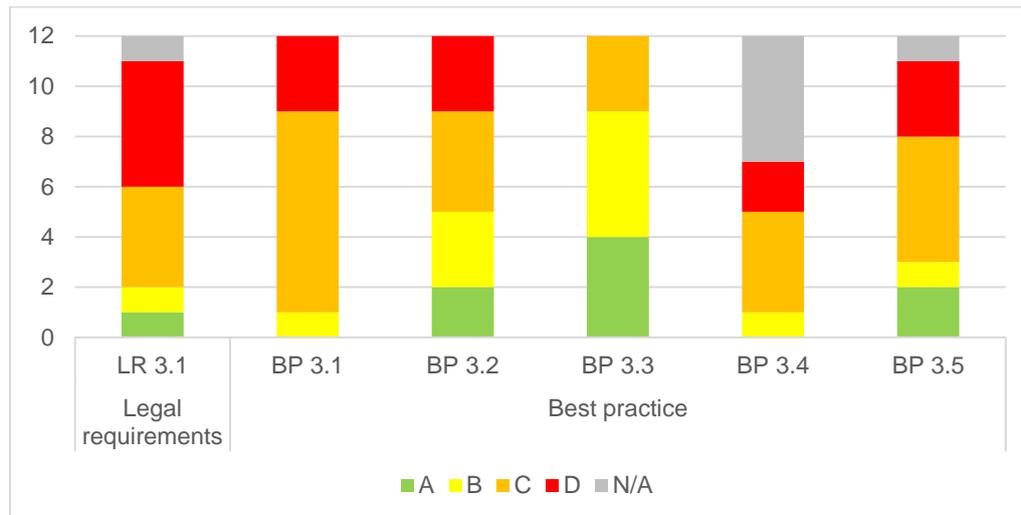


Figure 5. Performance of the twelve luxury lodges for legal requirements (LR 3.1) and best practices (BP 3.1 to 3.5) as it relates to energy management (KPA 3)

LR 3.1, the management of greenhouse gas emissions, performed very poorly, with only two of the lodges complying and partially complying to the legal requirements to monitor and measure greenhouse gases.

The overall performance of energy management KPIs are considered to be poor, with the majority of the lodges evaluated neither complying to legislative requirements, nor best practice. Two of the lodges performed good as far as best practice is concerned, but did not comply to legal requirements. Only one of the lodges could demonstrate compliance to legal requirements, but did not implement any of the best practice initiatives (Figure 7)

KPA4: Infrastructure development and management

Figure 6 outlines the overall performance related to infrastructure development and management (KPA 4, Table 2) of luxury safari lodges. A total of 97 As, 81 Bs, 42 Cs and 29 Ds were scored for the 23 KPIs (Table 2) over the twelve lodges evaluated. KPIs were not applicable (N/A) in 27 instances, mainly due to legal requirements (LR 4.1 to 4.4) not being applicable to many of the lodges.

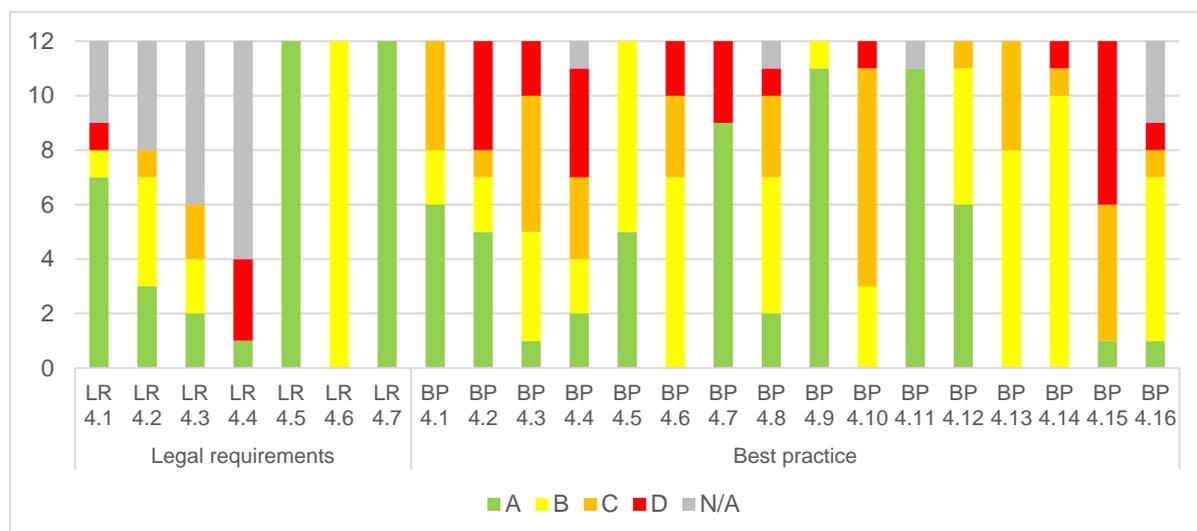


Figure 6. Performance of the twelve luxury lodges for legal requirements (LR 4.1 – 4.7) and best practices (BP 4.1 to 4.16) as it relates to infrastructure development and management (KPA 4).

An evaluation of the individual performance per infrastructure development and management KPI (Figure 6) revealed that five of the KPIs delivered very good performance, eight of the KPIs delivered good performance, while seven KPIs delivered average performance. Two of the KPIs scored poorly and only one of the KPIs scored very poorly. Very poor performance was recorded with regard to the identification of unauthorised developments and the rectification thereof through legal processes (LR 4.4). It should, however, be noted that the evaluation was based on three out of four lodges not complying to this legal requirement. Performance could not be evaluated for eight of the twelve lodges, due to the fact that these lodges had not undertaken any illegal developments and thus the KPI was not applicable. This is a positive result as it supports the very good performance recorded for KPI LR 4.1 in terms of effective environmental screening for new developments as discussed below.

Poor performance was noted in relation to best practice that aims to reduce the number of vehicles using the road networks within in the reserve (BP 4.10); and eco-friendly swimming pools (BP 4.15) that incorporates natural, low-maintenance elements, animal-friendly designs, and the reduction in the use of chemicals. Very good performance was recorded in relation to: Environmental impact assessment screening for any planned developments (LR 4.1), the minimization of the lodge footprints (LR4.5), including number of staff and staff beds per hectare (BP 4.9), the avoidance of fencing and barricades within the reserve (LR 4.7), with all twelve of the lodges fully complying to this requirement; and the optimization, coordination and sharing of staff transport and delivery trips per month (BP 4.11).

Good performance was noted with regard to environmental authorisations being applied for and EIAs being conducted existing infrastructure developments (LR 4.2), and compliance to the conditions of environmental authorisations being monitored (LR 4.3), where applicable. The limiting of commercial bed numbers per hectare was considered as showing good performance (LR 4.6), with all twelve of the lodges partially complying with this requirement. The availability of data (length, number and density) as it relates to water course crossings and road networks (BP 4.1) returned good performance as well as the fact that road networks were being maintained in a good condition (BP 4.5), and that off road driving was being well-managed in relation to new roads alongside the restriction of off road driving after rain events within sensitive habitats (BP 4.7). Good performance was noted in relation to light pollution, (BP 4.12) with downward facing and shaded lights and soft lighting being used where feasible. The overall performance of KPIs related to infrastructure development and management are considered to be good, with all of the lodges evaluated complying with legal requirements for infrastructure development and management. Two of the lodges also demonstrated good conformance to best practice, in addition to meeting legal requirements (Figure 7).

Mapping and discussing environmental performance

In keeping with the aim of this paper, the environmental performance of the selected luxury safari lodges was plotted along an adapted environmental performance pathway (Figure 7). The figure illustrates overall performance (Table 3) in terms of the 4 KPAs namely water management, waste management, energy management and infrastructure development and management, by plotting the individual lodge results for each legal requirement and best practice KPA. The results are then placed within one of 6 performance areas, namely:

- The misstep quadrant – lodges placed within this quadrant do not correspond with the steps of the environmental performance pathway, which dictates that best practice follows once legal requirements have been met. This step is not accommodated within the traditional environmental performance pathway (Willard, 2005). Lodges in this quadrant have poor environmental legal compliance yet perform well in terms of best practice. With regards to water management, three lodges find themselves in this

- quadrant, four lodges for energy management and one lodge regarding waste management.
- Step 1: moving towards legal compliance – lodges scoring within this area, are on step one of the environmental performance pathway. Seven of the lodges fall within this quadrant with regards to water management, five with regards to energy management and one concerning waste management. In terms of infrastructure development and management, none of the lodges fall within this quadrant.
 - Step 2: Compliant with relevant legal requirements: – lodges within this area find themselves within step two of the environmental performance pathway. Two lodges perform within this area regarding water management. Waste management saw two lodges within this quadrant, energy management one lodge.
 - Step 3: Towards Best practice: Lodges scoring within this area are on step 3 of the performance pathway. With regards to infrastructure, two lodges were placed within this area, one lodge in relation to energy and five lodges in relation to waste.
 - Step 4: Towards an integrated legal compliance and best practice strategy(green) – This quadrant represents lodges who are on step four of the environmental performance pathway. Two lodges are represented here regarding infrastructure development, and one for waste management. The poor showing in this quadrant is indicative of the required work to not only comply with legal requirements but to also implement best practice in pursuit of progression along the environmental performance pathway.
 - Step 5: Integrated strategy achieving legal compliance and best practice: The results indicate that no lodges at present find themselves within this area.

The results represented in Figure 7 allows for the consideration and further discussion of legal compliance performance in relation to best practice performance. The results indicate that some lodges do not follow the progression as set out by Willard (2005) in that best practice is implemented before there is compliance to the legal requirements. Anecdotal evidence suggest that this is often the case, and may be attributed to context specific factors such as educated international clientele and markets who are more concerned with best practice performance, rather than country specific legislative compliance. In terms of the differing KPAs the following is noted:

Water management performance was poor in terms of legal requirements and best practice. Poor performance in terms of water management may be attributed to the complex legal framework governing water management and the protection of water resources in South Africa. Furthermore, the SSNR has been in existence since the 1940s, with much of the water resource infrastructure dating back to this time, especially dams. Consequently, transitioning between the changing water related legislation and ensuring compliance has been poor. This is potentially further compounded by the fact that many of the lodges are situated within or close to riparian areas, with activities such as game drives occasionally following water courses. It is generally considered that the legal system regulating the use of water is highly complex (Bronstein, 2002) and the prevalence of non-compliance related to the absence in water authorisations for the abstraction, storage and discharge of water could be attributed to a lack of general understanding of this complex legal system and may therefore further deter lodges to wilfully engage and participate in the process of becoming compliant. Internationally the conservation of water within the tourism sector is of particular concern and can be attributed to the fact that the tourism sector overall has not made water use and conservation a core business priority due to the low costs associated with water consumption compared to other related operational costs (Gossling et al., 2012). This is further compounded by potential lack of awareness, ignorance or naivety, particularly regarding the reality of water stressed

catchments and within the context of increasing pressure placed on the ecological reserve by socio-economic growth. It is recommended that the Department of Water and Sanitation establish extension officers in each catchment to educate, instruct and monitor water users of all sectors. Management Authorities (MA) such as the SSNR MA can also research their catchments, specifically its hydrology relative to the demands placed on it, to determine the upstream threats their members are exposed to as well as downstream water users they have to be considerate of. The results may help motivate members to adopt more stringent water management measures.

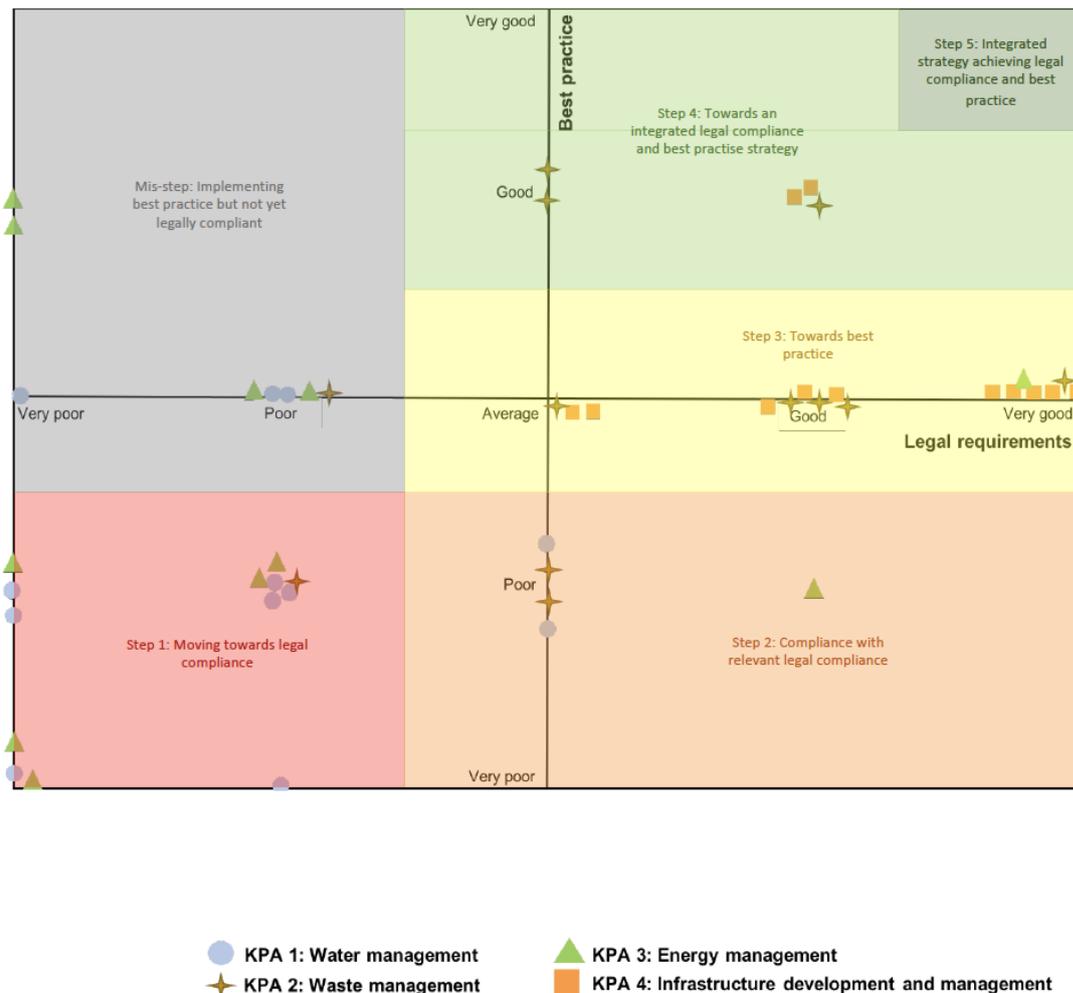


Figure 7: Individual lodge performance per KPA

As stated above, energy efficiency and conservation measures are considered to be a key indicator of sustainable ecotourism for protected areas (Van der Merwe et al., 2017). Energy management requires attention in terms of legal requirements, although certain lodges showing implementation of best practice. This might be attributed to the cost drivers associated with increased energy costs and load shedding. Unlike water which can be readily pumped from a borehole, lodges are forced to seek alternative energy sources in order to maintain guest expectations and ratings. Unfortunately, it is usually carbon-fuel driven generators as opposed to green energy sources. These are clearly economical driven and not sustainability-driven decisions. The implied conclusion is that climate change is not taken seriously or renewable alternatives are not yet economically feasible. Energy conservation measures are also only

likely to be taken more seriously if and once lodges are producing it themselves, using renewable technologies. Furthermore, lodge management are also ill-informed of energy efficient equipment and appliances and have a lack of knowledge how to make informed purchasing decisions when opportunities for equipment replacement present themselves

Waste management performed well, however best practice is now required to ensure that waste management moves from the internal action and growth quadrant towards best in class. Inadequate separation of waste at source, and insufficient documentation to demonstrate the disposal of waste at authorised landfill sites are issues that are typical to the developing country context, as illustrated by Godfrey (2008); De Witt (2015) and Department of Environmental Affairs (DEA) (2018), and this is reflected in the lodges poor performance in regards to waste management. The majority of waste collected within the reserve is facilitated through community-based service providers. Due to a lack of suitable equipment and vehicles, waste separated at source is then lumped together for transport and re-separated at the recycling and disposal site. This may disincentivise the lodges to go to the effort of sorting at source. A lack of waste related documentation is likely to be a result of the informal waste collection and separation initiatives that are supported, perhaps a lack of control at municipal landfills, illegal dumping, etc. Considering the recyclable waste is not separated at source, much of it may not end up being recycled if there are no recyclers or buyers of that particular waste stream whether it be paper, glass, types of plastic, etc.

It is recommended that lodges strive to leverage and build on the good performance regarding community involvement in waste initiatives. Palfrey et al. (2021) specifically highlights the social outcomes of private protected areas, such as local communities benefitting from increased employment, training, and community-wide development, while the creation of job opportunities related to waste management is highlighted by Márquez and Rutkowski (2020) and Taleb and Farooque (2021).

Infrastructure development and management: The best overall KPA performance- with all twelve of the lodges demonstrating legal compliance, and two of the lodges demonstrating combined good compliance with legislation and good implementation of best practice. Best practice can however be improved. While visitors to protected areas are mainly concerned about the aesthetic- and visual impacts of infrastructure in relation to the natural landscape (Morrison-Saunders et al., 2019), the more important environmental legal aspects relate to the authorised nature of infrastructure developments (Sandham et al., 2020). Environmental authorisation processes, supported by environmental impacts assessment (EIA) aim to prevent and mitigate the adverse impacts of developments on the natural environment. Alberts et al. (2021) have argued the importance of effective EIAs for developments in protected areas, highlighting the need to adequately identify and mitigate impacts associated with tourism developments. Managing the impacts related to infrastructure and developments include the implementation of best practice related to minimising the footprint and adverse impacts of buildings and road networks; designing eco-friendly gardens, swimming pools and other amenities; and limiting the movement of vehicles within the protected area. In this case or study area the Management Authority has appointed an environmental compliance support officer whose responsibility it is to undertake a screening assessment of any proposed development to determine the nature of any legal requirements prior to commencement and then advise the Management Authority accordingly.

Furthermore, the good scores in terms of infrastructure development may be attributed to compliance with the internal SSNR rules relating to footprints and densities imposed by the Management Authority. These rules or requirements are made known directly to the members and enforced, compared with water, waste or energy legislation that would normally need to be sought by its members on their own initiative. All development activities within the reserve

are governed by the Constitution of the reserve as well as a Development SOP which requires the ECO to undertake a screening for any development/expansion/maintenance activities to assess the need for authorisation processes. The screening report outcomes dictate whether or not permission is granted by the board/EXCO for the land owner to commence. Additionally, all EIA/WUA undertaken within the reserve undergo internal review to ensure procedural correctness and alignment with inter alia the reserve's EMPr and Constitution.

Conclusion

The aim of this paper was to evaluate the environmental performance of luxury safari lodges along a performance pathway from legal compliance to best practice, by focussing on water, waste, energy and infrastructure development and management. The research results provided a conceptual framework and performance baseline against which lodges can now develop strategies to improve and track their environmental performance. It is evident that environmental performance is not necessarily linear, as suggested by Willard (2005), with the research indicating that in certain instances best practice was implemented prior to legal compliance requirements. In furthering this research, it is recommended that the KPIs be contextualised so as to be applicable to other ecotourism operations such as lodges in government run or state-owned conservation areas.

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