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Measures and practices implemented by hotels to minimise the causes and effects of global warming: the case of Vhembe District

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Abstract

This paper addresses measures and practices taken by hotels in the Vhembe District Municipality of the Limpopo Province in South Africa that are aimed at offsetting the negative impacts of global warming on the environment by the hotel industry. The qualitative and quantitative approach study adopted an open-ended and closed-ended questionnaire, together with voice recorders, for the interviews conducted. The sample was selected using a simple random sampling technique. Content analysis and IBM Statistical Package for Social Sciences (SPSS) Professional edition were used in the data analysis. A trailing pace was identified in terms of effective participation in resisting the advance of global warming. The use of paperless technology and renewable energy sources, energy audits, recycling, waste reduction, water management, energy-saving systems, and staff/guest education on the subject of global warming were identified as the primary activities carried out by the respondents in their efforts to combat global warming. Costs incurred in pursuing innovative means of response and the inadequate extent of knowledge possessed by management were regarded as hindering the effective implementation of actions directed towards combating global warming. In addition to hotels having to invest in management development, it is considered that collaborating with organisations like Green Star South Africa would achieve progress in this respect, as it would save costs and reduce expenses, leading to the effective management of expenditure and fostering environmentally friendly practices. With tourists increasingly becoming acquainted with environmentally friendly practices, they are tending to favour patronising hotels investing in related activities.

Keywords: environmentally friendly, global warming, green economy, greenhouse gases, sustainable practices

Introduction

In response to the widespread debate on the issue of global warming, a considerable amount of research has been conducted into the phenomenon. According to King (2004), the debate has focused on whether global warming is, in fact, occurring. Some international organisations as the Inter-Governmental Panel on Climate Change (IPCC) have declared that the presence of warming of the climate system is undeniable, with most of the observed increase in global average temperature that has occurred since the mid-20th century being likely to have been the result of anthropogenic activities that are steadily increasing the amounts of greenhouse gas (GHG) concentrations in the atmosphere (IPCC, 2007). Carbon dioxide and other GHGs are regarded as being the main causes of global warming. Such gases are released in different ways, with general sources being transportation facilities and the use of non-renewable energy supplies. Since the 1980s, although a significant amount of research has been conducted into how the transportation industry, with reference to aviation services, causes global warming, the hotel industry has

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managed, so far, to escape much scrutiny in terms of its role in causing the phenomenon (Huang, Wang & Wang, 2015).

Despite the above-mentioned lack of scrutiny, certain studies have indeed been conducted into the relationship between tourism and global warming over the last half-century (Njoroge, 2015). From an early focus on attempting to determine the impacts of global warming on tourism, recent studies have redirected their attention towards the effects of tourism on global warming, investigating how the hotel industry has tended to advance the phenomenon of global warming (Ana & Gerard, 2011). The resultant need to research the efforts made by the more environmentally aware hotel industry of the present day, to adopt a friendlier approach towards the environment than in the past, has come to focus on the way in which hotels are striving to reduce the amount of GHGs that they emit (Huang, Wang & Wang, 2015). Despite the efforts made by some portions of the industry, certain hotel groups, especially in the emerging countries, have been somewhat dragging their feet in attempting to reduce their negative impacts on the environment. Such apathy has resulted from expectations that the focus should be on First World countries actively striving to reduce global warming as an outcome of their activities, since they tend to consume 14 times more energy than certain less developed countries (Anon, 2014b). However, the major role played by such emerging countries as India and South Africa in increasing the pace of global warming is clearly evident. In support of this view, Das and Paul (2014) note an expansion in the number of activities, the growing infrastructure, and the effects of a booming population in India which have inevitably resulted in greatly increased carbon dioxide emissions from accommodation fuel consumption within the country.

Literature review

Tang, Shi and Liu (2011) indicate that international organisations like the United Nations are also involved in the effort to curb global warming. Their concern regarding rising global temperatures has made way to the evolution of the theory of low carbon economies (Tang *et al.,* 2011), which has been put into practice as a means of countering global warming. The objectives voiced in the British Energy and Climate Change White Paper of 2009 concurred with those of the low carbon economy theorists. The aim of the White Paper was to reduce the amount of carbon output, power consumption, pollution and emission to acceptably low levels. The United Nations report on the Conference on Climate Change that was held in Copenhagen in the same year proposes that the era of the low carbon economy might be seen as that of the 'fourth industrial revolution' (United Nations, 2009). China, which has made a significant contribution to global warming in the past, is currently striving towards the establishment of a low carbon economy (Tang *et al.* 2011). By 2020, China is likely to have become a prime tourist destination country, being ranked the fourth leading tourist generating area in the world (WTO, 2003). In this regard, despite China's widespread pollution, it is gearing up to develop its tourism industry by means of converting it into a low carbon tourism industry, within a broader low carbon economy. Accordingly, in recognising the objectives set out by the low carbon tourism industry, Tang *et al.* (2011) state that the chief principle directing China's tourism industry is the reduction of the emission of GHG through sustainable use of energy. Such reduction would entail a 20% decrease in the levels of electricity and water consumed by graded hotels. Tang *et al.* (2011) also note that, besides hotels and lodges achieving energy-saving goals and reducing their emissions of GHG, low carbon tourism development is likely to result in reduced operating costs, which is bound to raise the levels of profit gained thereby.

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Theoretically, the low carbon economy theory advocates the reduction of GHG, the protection of the ecological environment, and social development by all graded hotels (Li, Zhang & Lin, 2010). The low carbon economy and tourism industry will be responsible for implementing the strategies suggested by such authors as Kelly *et al.* (2007) in a more advanced and result-oriented way than has been practised in the past, corresponding with the minimisation of fossil fuel usage. The United Nations World Tourism Organisation (UNWTO) conducted a study that revealed emissions of carbon dioxide within the tourism system. In its report, it stated that the transport sector generated 75% of all the carbon dioxide emissions from worldwide tourism with just about 40% arising from air transport alone (UNWTO, 2005). A subsequent report indicated that estimations on carbon dioxide output from the global tourism industry could reach an alarming increase of 152% by 2035 (UNWTO, 2007). On a similar scale, a report by PriceWaterhouse Coopers (PWC) (2012) on Low Carbon Economy Index indicated that a 5.1% annual rate is needed for there to be a significant decrease of GHG emissions by the year 2050 so as to achieve the maximum global warming rate of 2 degrees Celsius. Therefore, it is of essence to participate in activities that reduce the GHG emission level and thus achieve a rate deemed suitable for normal atmospheric warming.

According to Filimonau, Dickson, Robbins and Huijbregts, (2011:1919), there are a number of key approaches that can be applied in assessing GHG emissions. The following international standards are used for accounting and reporting on carbon footprint:

- Greenhouse Gas Protocol Initiative (GHG Protocol)

Greenhouse Gas Protocol Initiative (GHG Protocol) is used in the assessment of carbon footprint. The standard was developed by World Resource Institute (WRI) and World Business Council for Sustainable Development (WBCSD). It is a tool used to account for GHG emitted by organisations such as hotels. However, it is well known in the United States of America where it is being implemented in an effort to provide estimates of the carbon footprint released (Greenhouse Gas Protocol, 2010).

- International Organisation for Standardisation (ISO)

A company or establishment may use the approach to estimate and report on its GHG emission to the respective board. The standards used in the approach are stated by the ISO 14064-65 series of standards (ISO, 2006).

- Inter-governmental Panel on Climate Change (IPCC)

The IPCC formulated regulations to be used on reporting GHG emission. The objective is to have an appraisal on carbon footprint and its impact on a national and corporate level. Secondly, to have realistic approximations on GHG released by organisations (IPCC, 2006).

In relation to the accommodation sector within the tourism industry, Steyn and Spencer (2011) emphasise the need to shift to renewable sources so as to facilitate the combating of global warming. The making of such a shift would be likely to lead to increased awareness and to the creation of a deeper understanding of how best to manage tourism establishments in an environmentally sound way. The enhanced use of bioclimatic designs and appropriate equipment should help to minimise the costs

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involved, with the consumption of energy eventually entailing low carbon output (Steyn & Spencer, 2011).

In addition to the planting of trees to offset carbon output, which is a relatively attainable activity for almost every graded hotel, Steyn and Spencer (2011), in a unique way, stress the importance of tourism edification within the ambit of each hotel or lodge. The responsible use of facilities and products by tourists should also be encouraged by management, which would foster such behaviour by guests during their stay at the establishment in question. Behaviour like this could entail the responsible use of entertainment facilities, and even the relatively minor act of switching off of lights when leaving the room, or the switching off of the air conditioner when it is not in use. By leveraging the tourism experience in this way, the tourist could come to appreciate the positive contribution that they are capable of making at a destination. Steyn and Spencer (2011) further propose adopting an integrated approach to tourism management entailing the familiarisation of tourism establishment managers with policies and regulations relating to global warming. Such a shift in focus would tend to lead to the monitoring and assessment of possible variations brought about by global warming, which could possibly affect the physical aspects of destinations, as well as their infrastructure, especially in terms of the fostering of tourist safety and health at destinations. Furthermore, policies play a crucial role in implementing and improving sustainable business practices. For organisations to play a role in reducing global warming causes, and thus achieving an environmentally friendly way of conducting business, they should have competent managers in place who are able to evaluate and identify the areas that most require change. Skilled personnel of this nature should be capable of improving their organisation's perceptions of how to achieve a clean environment (Roberts & Tribe, 2008). As suggested by Mayaka (2007), an organisation that has policies in place to bring about sustainable business actions should be focused on, but not limited to: recycling endeavours; social responsibility exercises; waste reduction activities; the education of staff and guests; managing of the efficient use of water; the conducting of energy audits; the saving of energy; and sustainable environmental and management planning. The presence of the accommodation sector as a major 'shareholder' in the movement towards minimising the adverse effects resulting from global warming, as well as towards a reduction in the impact of its triggers is noted.

Nevertheless, management practices are likely to determine directly whether an organisation is active in reducing the causes of global warming. Bohdanowicz, Zientara and Novotna (2011) mention the integration of the principles of corporate social responsibility (CSR) with human resource management (HRM) in management activities directed at minimising the adverse effects of global warming. CSR, as defined by Bohdanowicz *et al.* (2011), entails leaving a favourable impact on society and the environment by means of working together with interested individuals or groups (stakeholders). The focus on acting in this way calls for a commitment to ethical, ecological and responsible behaviour by the accommodation establishments concerned.

Bohdanowicz *et al.* (2011) note the significant amount of progress that has already been attained in international hotel chains where the principle of CSR has been accepted as an integral part of the management programme. The researchers in question emphasise the need to effectively manage employees so as to achieve the objectives of CSR towards implementing sustainable practices. Such management is likely to lead to a reduction in the number of global warming causes and adverse

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effects. Educating staff on green management could be achieved relatively easily if it is introduced through CSR activities. The adoption of an approach combining both CSR and HRM principles should serve to identify employees who are environmentally friendly, and who realise that businesses have the responsibility to take action against global warming. Organisations would, accordingly, be able to recruit employees who have a concern for the environment, enabling the former to establish a culture that is ecologically responsible, as well as able to deliver sustainable business practices and measures effectively (Bohdanowicz *et al.,* 2011).

However, due to the increased level of understanding of the adverse environmental impacts that can be caused by tourism facilities, research into, for example, vegetation that is associated with different walking track types has provided insight into how to manage establishments in a more environmentally friendly manner. Such research has led to the evolution of green practices and to the practice of other relevant ways in which to minimise the adverse effects of global warming in the tourism industry (Hill & Pickering, 2006, 2007). As a result, a stream of policies, regulations and environmental protection strategies has been implemented by hotels worldwide (Zeenat & Mariam, 2013). Nonetheless, Kirkpatrick (1990) asserts that green approaches generally began to materialise in the 1990s, due to reports emerging that were focused on the issue of atmospheric warming. Melissen and Roevens (2007) note that the focus on the concept of green hospitality commenced in the 1990s. In the early stages of the adoption of the green approach, notable concerns related to the use of sustainable practices rose, as additional organisations started to comprehend their importance. Another driving factor that led to a change in the contemporaneously adopted practices was the altered attitude of tourists, who tended to become increasingly more educated and discerning, which led to them coming to favour sustainable tourism (Melissen & Roevens, 2007). In addition, Steyn and Spencer (2011) sought an explanation for the change in attitude as emerging from the evolving trends in the nature of tourism, which was shifting away from mass tourism to consideration of the environment and conservation activities in terms of international tourism demand.

According to Steyn and Spencer (2011), the entire range of the tourism industry, stretching from the tourist to the service provider, will, therefore, at some point have to challenge the realities of global warming effects. Such realities as the possible loss of some tourist eco-attractions like the Okavango Delta and the St Lucia wetlands as a result of global warming, will affect destination attractiveness in turn, reducing the number of tourists visiting the destination area. Nonetheless, the tourism industry is clearly subject to the general policies and regulations concerning GHG emissions (Steyn & Spencer, 2011). Concentrating on the accommodation sector, Ali (2012) suggests that hotel managers and owners should understand how their strategies and daily operations relate to environmental care.

Zeenat and Mariam (2013), in focusing on Malaysian hospitality, note that the basic approach to sustainable practices and to combating atmospheric warming entails implementing such measures as the reuse, the reduction in the number of, and the recycling of products. Pizam (2009) augments such suggestions by pinpointing the need to reduce the amount of noise emissions, to procure green merchandise, and to employ paperless technologies and environmentally friendly packaging, In addition, green-aware efforts should be made in the fields of site management, indoor air quality control, transportation, and environmental awareness. The making of sustainable recreation choices and the employment of an advanced transportation

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infrastructure that allows for only a negligible amount of impact on the climate and on land use is also advocated.

The above-mentioned actions not only focus on ecological sustainability, but on the fostering of an environmentally conscious economy too. Furthermore, Karagozoglu (2000) and Leslie (2007) posit that a number of hotels and lodges have already realised the competitive advantages that can be brought about by sustainable environmental performance. As a result, the accommodation establishments in question have implemented the principles of proactive management so as to achieve safe environmental practices while simultaneously profiting therefrom. Despite the making of such positive moves, however, Thornton (2003) indicates that some managers have viewed environmental concerns primarily only in terms of the increased costs that such awareness can bring, rather than in terms of the competitive edge that responding positively to such concerns can bring. In the current study, the management interviewed expressed concerns along these lines in relation to their implementation of sustainable practices. Despite the different opinions noted by Leslie (2007), Pizam (2009), Zeenat and Mariam (2013), among other authors in the field, general agreement was voiced as to which activities could help to save the environment, as well as to reduce the causes of global warming.

Of equal importance to the above, Ceballos-Lascurain's (1993) overview of ecotourism provides a platform for the adoption of green approaches using renewable energy as a means of saving energy and thereby reducing the use of fossil fuels. Additionally, in areas that receive a significant amount of rainfall, the harvesting of rainfall is likely to be advisable. Such harvesting is likely to reduce the amount of municipal water consumed by tourism establishments, thus helping to alleviate their pressure on the natural reservoirs, and thereby facilitating the attainment of balance in their natural water systems (Ceballos-Lascurain, 1993). Costs could, ultimately, also be reduced through the undertaking of such measures. The results obtained in other supporting studies conducted by Kelly, Wolfgang, Peter and Krista (2007) agreed with those secured by Leslie (2007), who suggests the adoption of similar strategies, as well as the making of sustainable recreation choices.

Even so, hotels are one of the most demanding energy consumers among all categories of building stock (Dascalaki & Balaras, 2004). Considering their 24-hour-a-day delivery of services and facilities, coupled with the increased amount of energy that is used by guests during their stay, the energy demand of hotels tends to be exceptionally high. Khemiri and Hassairi (2005) found that much of the energy that is consumed by hotels is wasted, due to its mismanagement. Dascalaki and Balaras (2004) revealed that, at the time of their study, only 10% of hotels had globally implemented sustainable energy use programmes, with the rest neither being sure of their energy consumption patterns, nor of their effects on the environment. Individual assessment of hotels' energy consumption and environmental impacts in relation to a green environment is, therefore, likely to become a necessity in terms of the aim to improve the environment, as well as to reduce the extent of global warming and to minimise operational costs. If suitable measures are taken, it should be possible to attain the required levels of sustainable tourism development.

Additionally, the study by Sloan, Legrand, Tooman and Fendt (2009) on developing energy conservation for the hotel industry reveals that hotel industry operations contribute 5% of the carbon emissions that directly affect the ozone layer. Relatively low levels of energy, water, and non-renewable resources tend to be consumed by hotels that use sustainable measures in relation to those that do not (Sloan *et al.,*

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2009). As a result of sustainable management initiatives, environmental policies have been formulated, and sustainable management practices enhanced. According to Buckley (2012), the adopting of suitable management measures and practices can reduce negative tourism impacts. With such insight, supervision and management practices, the following of guidelines in relation to environmental policy, provides a fit foundation for the successful execution of sustainable measures. Supervision thus becomes a key factor in reducing the negative environmental effects of tourism, and in improving sustainable tourism practices.

In South Africa, the country uses its massive reserves of coal to generate electricity, with about 77% of its energy being provided by such a source, of which approximately 28% is exported to other African regions (South Africa Department of Energy, 2015). The use of non-renewable energy sources by most hotels, especially the bigger the establishment, the more energy that is used in relation to smaller hotels, resulting in the former increasing their carbon footprint. According to Rondganger (2012:1), the Global Environmental Performance Index 2012 pointed South Africa as 'the biggest emitter of GHG in Africa'. Gossling, Peeters, Ceron, Dubois, Patterson and Richardson (2005) found the use of fossil fuels and GHG emissions to be one of the most pressing environmental issues that is currently linked to tourism. Relatedly, Buckley (2012) states that high-star-rated hotels tend to use excessive amounts of energy, which makes it difficult for them to achieve efficient levels of energy consumption. Concurrently, larger quantities of fossil fuels are then used to generate energy than might otherwise be the case. The result is the intensified release of carbon dioxide into the atmosphere, which thereby escalates atmospheric warming. As for South Africa, The National Strategy for Sustainable Development Plan 2011-2014, the Draft National Tourism and Climate Change Response Program and Action Plan, National Minimum Standard for Responsible Tourism and the Draft Environmental Impact Assessment (EIA) Guideline for Renewable Energy Projects are policies and programs aimed at improving South Africa's position in GHG emissions and reducing its rate of non-renewable energy consumption (Sucheran & Bob, 2015:5).

In the hotel sector, the motive to reduce carbon footprint and GHG emissions resulted in the emerging of organisations like Green Building Council of South Africa (GBCSA). GBCSA focuses on green property development in South Africa (Rogerson & Sims, 2012). The organisation has established a rating system known as Green Star South Africa. With such a development, which focuses on a number of elements including; energy and water efficiency, indoor environmental quality and resource conversation, the hotel industry in South Africa is likely to upscale its standards (Rogerson & Sims, 2012). Organisations like GBCSA has adopted its rating system from internationally recognised systems such as United States Leadership in Energy and Environmental Design (LEED) system and Australian Green Star rating system (Rogerson & Sims, 2012). Prior to these developments, the South African hotel industry lacked such support which is necessary for competitive practices on an international level. Nevertheless, not all local hotels are exposed to such systems. However, with other organisations such as Fair Trade Tourism arising to the occasion, establishments in emerging towns will gradually become aware of the developed rating systems. The collective efforts of the existing rating organisations should result in South African hotels improving on green practices and becoming internationally competitive.

However, the current study covers measures and practices that are practically executed by tourism establishments within the Vhembe District Municipality (VDM).

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The area has not been fully exposed to the recent developed rating systems such as the Green Star South Africa. The objectives of this paper are focused on determining

factors that are considered to be of importance when deploying sustainable practices, including: evaluating management practices; identifying programmes participated in by hotels for the raising of public awareness about global warming; recognising any policies implemented by the hotels in order to mitigate global warming effects; and determining the activities engaged in by hotels to reduce the causes of global warming.

Methodology

The study was conducted in terms of the Q^2 approach. The qualitative aspect was focused on interpreting and understanding the participants' responses. The quantitative part of the study consisted of assimilating the quantified data. The investigation was carried out in the VDM of Limpopo province. The district municipality in question consists of four local municipalities namely: Makhado; Musina; Mutale; and Thulamela as illustrated in figure 1.

The target population was made up of 50 graded hotels and lodges in the VDM. Due to the homogeneous nature of the target population, it was possible to use a relatively small sample size. The investigation was undertaken in the form of a cross-sectional study, with 35 sample units, consisting of 3- to 5-star-rated hotels, being selected in terms of the sample frame. Such hotels were selected on the basis of the assumption that hotels of this nature are relatively well placed to address environmental issues, meaning that they were likely to give meaningful responses to the questionnaire. The simple random technique was used to obtain a fair representation of the population.

Figure 1: Vhembe District Municipality Map

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Data sources

The data were sourced from the management of each establishment. In all cases, appointments were made with the front office manager for the administration of the questionnaire and for the conducting of the interviews. Each organisation provided an individual from management (or a representative who was not necessarily from management) who completed the questionnaire and participated in the interview.

The conduct of the research in question was based on the ethical conducting of scientific investigations into human subjects, and in accordance with the University of Venda's ethical policies. An official letter was obtained from the respective University of Venda office so as to assure the respondents of the confidential nature of the study. No means of deceitful measure was used to gain a respondent's favour, with only willing and fully informed respondents being questioned and interviewed. The principle of confidentiality was exercised at all meetings, and thereafter in respect of the data obtained (Wiid & Diggines, 2013).

Instruments

Questionnaires and interviews were used to gather the required data from the sample surveyed. The interviews were recorded and analysed together with the responses that were received to the questionnaire. Interviewing was used to gain an in-depth understanding of the challenges that management faced in implementing environmentally friendly behaviour.

The questionnaire consisted of four sections, comprising a total of 23 questions, of which only 9 were unstructured.

- The questions in Section (A), which were aimed at obtaining general information pertaining to the clients, enquired into the establishment's description details. The intention was to identify the establishment's category (in terms of the number of stars allocated to it), the number of rooms, the target market, and the geographical area from which most of the customers originated.
- Section B focused on obtaining information relating to global warming. The organisation's understanding of the nature of global warming, and of the impact of global warming on tourism, as well as which activities were conducted by the organisation to minimise the extent of global warming and, thereby, to reduce the number of its causes, were ascertained.
- Section C reviewed the extent of the organisation's concern for the environment. It served to reveal the nature of management's planning towards a better environment, its non-renewable energy consumption, and how efficient it was being in terms of non-renewable energy management.
- The questionnaire was headed by an official cover letter from the Dean's office at the University of Venda. In addition to requesting permission to conduct research at the establishments surveyed, the letter provided the details of the researcher and of the head of department in question for purposes of referral.

Three graded hotels were pretested with the questionnaire, so as to identify any issues that might arise during the administration of the questionnaire. Clarity on the terminologies and concepts that were used therein was attained to validate the appropriateness of the instrument for the study.

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Data analysis

The data collected were analysed by means of ratifying and editing the responses to each questionnaire, after which they were coded and captured. The IBM Statistical Package for Social Sciences (SPSS) Professional edition was used for analysing the collected data. The content analysis that was used for analysing the unstructured questions in a qualitative manner was employed to provide a descriptive account of the data collected.

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Results

Description of the units

Of the participating establishments, 24 had a 3-star rating, with 6 establishments having a 4-star rating. The number of rooms varied per establishment in the following way: 5 had between 1 and 5 rooms; 10 had between 6 and 10 rooms; 7 had between 11 and 15 rooms; 1 had between 16 and 20 rooms; and 7 establishments had more than 20 rooms.

Understanding of the impacts of global warming on tourism

So as to find out whether the management surveyed understood the impacts of global warming on tourism, a question was asked to determine the respondents' level of understanding regarding the extent and effectiveness of the measures and practices that they would use in their efforts to reduce the quickening pace of global warming. Of the participants, 21 noted their awareness of the nature of global warming, as well as of its causes and effects. In contrast, 9 participants stated that they were unaware of the nature of global warming, and of its causes and effects. Of the 21 respondents, 12 understood the impact of global warming on tourism, whereas 3 acknowledged that, though they were aware of the global warming phenomenon, they did not understand how it could impact on tourism. Uncertainty regarding the impacts of global warming on tourism was expressed by 6 of the participants.

Table 1: Responses obtained to question on the understanding of the respondents regarding the impacts of global warming on tourism

Activities in which engaged	Description of the activities
Promotion of paperless technology	Switching to electronic means of communication, bookkeeping, database creation and related functions, thereby reducing the amount of stationery required, resulting in a decrease in the danger of deforestation.
Waste reduction	Conscious striving to be effective and efficient in all areas in which engaged, so as to reduce the amount of energy wasted.
Water efficiency	The reduction of levels of water consumption by means of switching to rainwater harvesting, and

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	to the reuse of water for secondary purposes.
Energy efficiency	The reduction of energy consumption and waste, along with the use of solar panels to heat geysers, and the monitoring of the use of air conditioners.
Recycling	The recycling of products so as to reduce the amount of waste and to increase the extent of the reuse of products, thus reducing the amount of pressure exerted on the natural resources required for the smooth running of operations.

As illustrated in Table 1, the study participants shared how they played a role in actively reducing the quickening pace of global warming through their adoption of environmentally friendly practices. Of the respondents, 10 were engaged in activities that were specifically aligned with initiating or improving the degree of environmental friendliness and responsible behaviour of their operations, with the intention of ultimately slowing down the rate of global warming. Inactivity in regard to reducing the pace of global warming was expressed by 2 participants who had no activities so aligned. Another 8 of the participants, due to their uncertainty about their activities, were not classified as either active or inactive in so far as reducing the pace of global warming went. The remaining 10 participants did not respond to this section of the questionnaire, due to 9 participants being unaware of what global warming entailed. The 10 participants who were engaged in activities aligned with addressing environmental issues so as to reduce the pace of global warming then identified which activities they practised.

Environmental concerns

The managerial attitudes that were held towards the environment by the participants in the current study could mostly be seen in their planning, practices and policies. This section presents the findings that were obtained from 30 participants with regard to their concerns regarding the factors mentioned. The focus in this part of the research was to evaluate management's practices by means of identifying whether they had policies in place that were geared towards establishing and maintaining a friendly environment, whether they supported and participated in any community engagements addressed at increasing awareness regarding environmental issues, and whether their actions in this direction generated staff support of such an approach.

In terms of a 5-point Likert-type scale ranged from 'strongly agree' to 'strongly disagree', the responses received indicated the strong agreement of 12 participants with the fact that their mission was geared towards the fostering of an eco-friendly environment. The number in question included the establishments that had included consideration of environmental issues in their strategic plans. Of the participants, 9 agreed that their mission statement was in line with the fostering of environmentally friendly practices. In contrast, the other 9 establishments noted their neutrality in relation to concerns for the environment being non-aligned with their mission statement. The percentage of establishments engaging in community activities to improve environmental awareness amounted to 46.7%, whereas 53.3% of the establishments did not engage in such activities. Of the establishments, 4 strongly agreed with the fact that they were participating in community engagements, while 10 agreed on this point. Neutrality was expressed in this regard by 4 establishments, whereas 12 others disagreed with participating in community engagements. However, no clarification was obtained regarding in which programmes participation took place,

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apart from those contributing to CSR. In terms of staff support, 7 establishments strongly agreed with motivating their staff to become more environmentally aware, with 22 agreeing on their participation in such efforts, while 1 participant denied a role in motivating their staff to achieve environmental awareness. Participation in the activities suggested by other authors in regard to the fighting of global warming was considered. The nature of questioning of the respondents in this regard was based on insights obtained from the literature review. Consequently, the rate at which the study participants applied such techniques or participated in such activities in their efforts to reduce the causes and adverse effects of global warming was surveyed. A Likert-type scale relating to the frequency of application was used to obtain the required responses in this respect, with the ranking ranging from 'all the time' to 'not at all'. The respondents who indicated that they were 'not sure' on this aspect were either unaware of their business activities, or unable to make a sound decision regarding their frequency with such activity. However, the following practices were mentioned.

Use of solar panels: As an alternative to conventional energy sources, the use of solar heating tends to reduce non-renewable energy demand, thereby minimising the amount of fossil fuels processed, and the levels of carbon footprints released. Of the establishments surveyed, 50% (i.e. 15) mentioned using solar energy all the time as their main source of energy. The frequent use of solar panels as an alternative source of energy was noted by 12 establishments. In total, therefore, 90% of the participants used solar panels as a source of energy.

Use of energy-saving bulbs: Of the establishments surveyed, 22 reported using energy-saving bulbs at all times. The other 8 reported using them frequently as an alternative to their use of more conventional light bulbs. Of the establishments using energy-saving bulbs, at least 10 were directly reducing their previously high levels of carbon footprint by means of reducing the causes of global warming. Such a finding was made on the basis that 10 establishments firmly stated their active involvement in combating global warming.

Use of environmental friendly packaging: The use of such packaging is of importance, as it reduces the extent of negative impacts that might otherwise have been inflicted on the environment. Pizam (2009) emphasises the need not only to practise sustainable activities, but also to adopt such measures as environmentally friendly packaging. Of the establishments surveyed, 15 reported using such packaging at all times, whereas 8 frequently used it as a viable option to more conventional packaging. The remaining 7 establishments were not sure whether they used environmentally friendly packaging in their operations. Once more, of the 15 establishments that were actively using responsible packaging at all times, 10 of the participants were doing so with the aim of reducing the hastening pace of global warming.

Waste reduction and recycling: Considering the three activities, namely reduction, reuse, and recycling, used by the establishments practising sustainable activities, a question was posed to the respondents on how frequently they are involved in such activities. The question asked focused on the reduction and recycling of waste, which would eventually lead to a reduction in the amount of material used in hotel operations. The activities concerned mainly relate to the enforcement of sustainable practices within establishments. Of the establishments surveyed, 14 were found to reduce and recycle their wastage at all times, whereas 5 frequently involved themselves in such activities, with 1 not practising the activities at all. However, 10 of

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the respondents were not sure whether their establishments practised such energy-saving measures.

Recycling of water: Such recycling had recently been adopted by establishments wishing to stay abreast of environmental issues. Thornton (2003) and Mayaka (2007), however, emphasise the need for establishments fighting to reduce the pace of global warming to adopt sustainable water-efficient practices. South Africa's plight as a water-scarce country is bound to be exacerbated by global warming. Immediate action in this respect is, therefore, required to prevent dire shortages of this commodity (Anon, 2014b). However, of the tourism establishments in the VDM, only 3 recycle water at all times, whereas 1 frequently recycles water, with 10 not recycling water at all. Uncertainty was expressed by 16 of the respondents who were unsure of whether or not they recycled water.

Staff education: As a tool used for improving employee capabilities, staff education also serves to increase the value of the information that is dispensed to guests. As such, it is, therefore, an important activity in which management needs to engage if there is a commitment to environmental sustainability within the establishment (Bohdanowicz *et al*., 2011; Mayaka, 2007). Therefore, the issue of how often establishments tend to educate their staff about environmental issues was investigated, in response to which 17 of the establishments were found always to educate their staff in this regard, with 13 frequently educating their staff on the matter. Furthermore, the respondents mentioned important factors that required consideration in terms of striving to achieve environmentally friendly and responsible business practices ultimately leading to a reduction in the causes of global warming. The incurrence of costs was a factor mentioned by 14 of the establishments as a determining factor in implementing certain environmental friendly practices. Government support through municipal collaboration, subsidies for operating costs, and the provision of technical knowledge in relation to the improving of environmentally responsible practices was another factor indicated by 10 of the establishments surveyed. Of the hotels concerned, 7 mentioned purchasing green material as being the first step to be taken in achieving environmentally friendly practices. The procurement of green products should be a measure that is considered by establishments that intend to be regarded as environmentally friendly. Affiliating with organisations that advocate the adoption of such responsible environmental practices as Fair Trade Tourism (FTT) was mentioned as being an important consideration in becoming an environmentally responsible business. Such a development would be likely to lead to the establishment being endorsed by the organisation, thus motivating it to improve and uphold its environmentally friendly practices. Lastly, in response to a question asked to establish whether management had policies in place to support their activities in securing environmental improvements, the policies identified in Table 2 below were noted.

Table 2: Responses obtained to the question regarding whether management had policies in place to support their activities directed towards securing environmental improvements

Policy	Description of activities engaged in in terms of policy
Procurement of green products	Guidance on the kind of products to be purchased for business activities – green in some cases, though not in all.
Sorting of garbage for recycling	Separating of bottles, plastic items and paper from other materials for recycling purposes. Such separation led to reduced levels of wastage and visually observable pollution resulting from litter, while simultaneously serving to decrease the amount of pressure exerted in terms of resources required.

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Conducting of energy audits	So as to avoid energy wastage, audits were being conducted in the establishments in question to identify areas of wastage, as well as in efforts to manage energy consumption efficiently. Valuable insight was gained in this way into areas requiring improvement.
Annual planting of trees	In terms of this act of corporate citizenry, establishments were making a positive contribution to their surrounding community by means of conducting a tree planting exercise at least once a year.

Conclusion

As can be seen in terms of the above-mentioned study, to reduce the pace at which global warming is taking place calls for immediate action from organisations, associations and communities which should combine their efforts in fighting global warming by minimising its causes and by practising environmentally friendly activities, so as to reduce its adverse effects. Ranging from those relating to the relatively easy activity of planting trees to those relating to the complex activities of bioclimatic designs, the data collected in the current study reveal that, if establishments take part in concerted efforts to minimise the adverse effects of global warming they will, at least in part, contribute to the reduction of global warming. In general, over the years tourists have become more discerning and eager to associate themselves with establishments taking an active stance against global warming. Therefore, not only will the establishments in question help to achieve a green environment for all, but they will also be likely to gain an improved image as a result of the tourists' shift in perception.

Several associations and non-profit organisations, many of which are based in Europe, have been formed, especially in recent decades, by members of society who wish to reduce the causes of global warming. However, in South Africa, a number of social organisations are only now starting to commit themselves to actively reducing the amount of global warming by means of applying the means that are available to them. Whereas some are involved in conducting public awareness programmes, others are going to the extent of lambasting the suppliers of non-renewable energy, urging their shutdown. In contrast to such an approach, businesses have also come together to form such non-profit organisations as FTT in an effort to work towards the common objective of practising sustainable activities, with the aim of reducing the causes of global warming. Even such worldwide such as the World Tourism Organization (WTO) have policies in place to support efforts to reduce the pace of global warming. The extensive amount of knowledge possessed by the members of such organisations in regard to events taking place in relation to climate change is empowering them to play an effective role in reducing the causes and adverse effects of global warming. Typically, such mindful potential guests would tend to prefer to be associated with tourism establishments that share the same environmental interests. Therefore, prospective guests might choose to frequent businesses that are focused on engaging in pursuits that are environmentally friendly, and which are likely to endow the concern with an enhanced image.

An objective of the current study was to determine whether any activities were practised by accommodation establishments in the VDM in an effort to reduce the causes of global warming. The research undertaken in this respect identified a number of activities that accommodation establishments can practise in their efforts to combat global warming. Some of the practices were externally focused,

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incorporating such activities as community engagements aimed at increasing levels of public environmental awareness, whereas others were internally focused, including the integration of CSR with HRM efforts.

Another objective of the present study was to evaluate the management practices undertaken and to establish their attitudes towards environmental issues. The absence of prioritisation of environmental concerns in business planning might mean a dearth of environmentally friendly activities in such management's undertakings, which could hasten the pace of global warming. Proactive concern with the environment is revealed in business activities, policies, planning and programmes, as well as in the organisations with which the business is affiliated. Therefore, having a management in place with a sound understanding of global warming issues and a perceptive and caring approach towards the environment is likely to shape the business's activities in the direction of sustainability, and towards contributing to a reduction in the causes of global warming.

In line with the outcomes of this study, it can be concluded that tourism accommodation establishments in Vhembe are still lagging behind in their opposition to global warming. A significant percentage of such establishments is still unaware of what threat global warming holds for tourism as an industry. Only a few have effectively sought to make their concerns environmentally friendly, with the intention of reducing the causes of global warming. Several factors can, accordingly, be identified as reasons for their below-average participation in the fight against global warming.

Many establishments still lack information on what global warming is, and how it affects the tourism industry, which makes them impervious to the means that can be used to reduce the causes of global warming. Even those managers who are informed on the issue of global warming might, nevertheless, be relatively ignorant on how to set about environmentally appropriate business management planning, This could explain their reluctance to embark on measures that are aimed at countering global warming in respect of their establishments.

Poor management, therefore, can be seen as accounting for much of the reluctance that can be seen to conduct business along ecologically sensitive lines. The relative ignorance of management in this respect can be blamed for the comparative lack of guiding principles that have been put in place to support sustainable practices, and the mismanagement of appliances that either use non-renewable energy sources, and/or that are inefficient in terms of water and energy consumption. Therefore, future actions are required to turn around business activities of accommodation establishments, so that they might be rendered effective in reducing the effects of global warming.

Further research is, therefore, still necessary into managerial competencies, so as to facilitate the understanding of the conceptual and leadership competencies that managers still need to acquire. Additional studies could also extend to exploring the link between managerial competencies and the educational system that is responsible for the certification of such skilled personnel. The insights to be gained from such research could help to improve managerial competencies, thereby leading to the effective management of such other aspects of the tourism business as the environmental issues impinging thereon.

In terms of the above view, it is imperative for tourism accommodation establishments to participate in, and to practise, activities that minimise the impact of

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global warming. Environmentally friendly practices are becoming regarded as a point of parity on an international level in the accommodation sector. Establishments not practising environmentally friendly activities will, eventually, find themselves unmarketable to conservation-minded tourists. Therefore, for local establishments to be regarded as being internationally competitive, they need to have sound practices and measures in place to reduce the adverse effects of global warming. The establishments involved will, thus, come to be on par with other hotels in the industry that have already initiated similar improvements in terms of the practising of responsible sustainable management. The establishment of such parity will serve to improve their image, while simultaneously making the VDM a favourable tourism destination.

Study limitations and recommendations for further research

The current research findings should be understood within the perspective of the study's limitations, which are based on a number of factors. The sample frame was created in January 2014, and therefore does not include changes that have occurred since then. As the research was limited to hotels in the VDM, its findings cannot, therefore, be generalised to South Africa as a whole. Accessing some establishments was a problem, despite repeat visits, due to the language barriers concerned. This led to a number of establishments not responding to the survey. Consequently, future research should cover a wider geographical area and make use of updated sample frames. To ascertain a higher response rate than was obtained in the present study, cordial relations need to be established with the possible respondents prior to the survey. The researcher should be accompanied by a translator who is capable of overcoming any language barriers encountered. The study should also be practical and financially executable. Furthermore, an in-depth analysis of energy efficiency among the establishments surveyed, and an investigation of the possibility of switching to solar energy should be included in the research, as it is a key consideration in terms of climate change issues. The results of the study should go a long way towards facilitating the implementation of practices that can serve to reduce the amount of GHG emissions, thereby effectively decreasing the currently experienced pace of climate change.

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