Sustainability practices of Transkei guesthouses

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Abstract

This research was undertaken to establish the extent of awareness and implementation of green water management practices in guesthouses in the former Transkei area of the Eastern Cape, South Africa. The research focused on tourism guesthouses, since water is one of the major cost drivers in the guesthouses. Relevant stakeholders like inter-alia, the OR Tambo District Municipality the local water authority, and the Department of Tourism Mthatha were included through public domain document reviews to highlight their roles in water management for the hospitality business. Data was collected through the use of one-on-one qualitative interviews. It was found that the majority of the purposefully selected guesthouses did not practice green water management principles as pertaining to treating water as a business resource. The findings showed that the majority of guesthouses continued to depend on an unreliable municipal water supply although it affected the quality of their customer experience, which has long-term negative implications for the business sustainability. The findings indicated that guesthouses also did little to reduce their water usage in amenities like toilets, baths, and showers which is problematic given the water shortages faced in South Africa recently. Furthermore, although some guesthouses had water storage tanks, rainwater was not used as an environmentally friendly alternative water source. Instead, such tanks were replenished with municipal water when it was available, which comes at a price. The few guesthouses that were found to follow green water management practices as part of their overall business strategy, were found to have achieved savings as a result of reduced municipal charges, and water availability was guaranteed for guests. The findings indicated that guesthouses accept as true that typically guests assume that water consumed during their visit was commensurate with the guesthouse tariff that they had paid i.e. guests waste water as they believe they have paid for it. This research makes managerial recommendations to guesthouse owners as to the value of water management practices as part of a sound business management strategy and sustainability initiatives.

Keywords: Transkei, tourism, water, sustainability, business, South Africa.

Introduction

Business does not operate in isolation; it is part of the community it serves and the world at large. Poor management of resources such as potable water which is a diminishing resource, hampers the smooth operation of business, as water as a resource is not always readily available. Weybrecht (2010) stated that as the world's population grows daily, poor management of available resources has an impact on the health of the planet, society, and the global economy. King and Lessidrenska (2009) note that the rate at which the world population is expanding and consuming resources, people are heading towards depletion of available resources like water unless people learn to practice sustainable resource management. According to Morelli (2011:2), sustainability refers to, "how man perceives and

connects with the ecological concept of interdependence as an objective those who manage environment". Morelli (2011:2) broadens this meaning and refers to environmental balance for business as "a three-legged table which consists of the environment, the economy, and society", or "as having a two-pronged relationship between human beings and the ecosystem". He further emphasises that this balance should ensure provision of clean air, clean water, and, clean and productive land, as the basis of every successful socio-economic system. Gleick and Iwra, (2014) however highlight a consistent gap between the demand for potable water and the supply of such water, especially in the developing countries like South Africa. Lee and Brahmasrene (2016) commented that as more tourism and business institutions are built, more damage is being done to the environment as such activities use up precious natural resources, which are likely to be completely depleted and never replaced. They also emphasise major tourism policy enhancement must be undertaken to ensure that natural resources such as water are sustained for the economic viability of communities. This research sought to establish the level of proactivity of guesthouses in Mthatha towards water conservation and sustainability for competitive advantage, through formalised or documented policies and strategies. Louw and Venter (2010:24) described the strategic architecture of a business as "the ability to [devise strategies] that stretch the available resources, competencies, and capabilities". This is important since…….

Businesses need to adopt certain strategies that flow from usage of available resources, into distinctive capabilities, competitive advantages, and superior returns. In this instance, adopting a green practice at a Transkei guesthouse could be a strategy to ensure competitiveness and continuity. The National Environmental Management Act (RSA, 1998:11-12) stated that in order for businesses to be sustainable, a policy, programme, project, product, process, service, or activity should exist to plan the business in terms of sustainability objectives applied throughout its business life cycle.

There is very little in existing academic literature which is specific to understanding the use of water in Transkei tourism guesthouses and its applicability in strategic planning for business competitive advantage. To address this gap this study sought to determine the level of knowledge, attitudes, and current practices in water resource management at selected city of Mthatha, Transkei guesthouses. The research question posed in this exploratory study was: To what extent do Mthatha guesthouses practice strategic business management activities with regard to water usage?

This research contributes to the body of knowledge theory on business strategy as regards Transkei tourism guesthouse management of water as a resource, and also practically in presenting a framework for guest house water management practice empirically explored with qualitative interviews. This paper consists of the introduction, background to the research, a review of relevant literature including proposal of a conceptual framework for strategic water management by business, the methodology, findings and discussion, and conclusions.

Background to the research

Colvin, Muruven, Lindley, Gordon, and Schachtschneider (2016) posited that South Africans are of the view that water is an abundant resource when in fact South Africa's rainfall is approximately half the world's country average. Many South Africans look at the rivers that flood annually and assume that there will always be bountiful supplies of water. However, rising population numbers and recent low rainfall in some areas exacerbate these beliefs. Neighbouring states like Namibia that has a large proportion of desert area, and receives half of South Africa's average rainfall, are better off because they have a better water ratio efficiency (less people using the available water). Colvin et al. (2016) consequently concluded that South Africa is therefore a water scarce country. The Transkei, historically known as the Transkei Wild Coast, is geographically located within the Eastern Cape Province. The region's tourism activities are largely undeveloped depending predominantly on attracting tourists

through the rural, untouched landscape with many pristine beaches that support the demand for guesthouses. The area is used by both international tourists coming from outside of South Africa and domestic tourists who are resident in South Africa (Ntonzima & Binza, 2011).

At Mthatha, the geographic focus of this research, the major source of water is Mthatha dam, which is situated in the upper stream area of the Mthatha geographic catchment area. According to the Department of Water Affairs and Forestry (DWAF) (DWAF, 2008) 'State of the Rivers' report, Mthatha dam provides drinking water for all residents and is used for hydroelectricity generation, industrial and domestic water supplies. So important is water management that DWAF further highlights that water offers an opportunity for biome conservation, leisure water-based recreation, and tourism activities which will be lost to Transkei as a result of the poor quality of water in this area (DWAF, 2008).

Acheampong's (2011) research on Transkei tourism development advocated that tourism's successful development depended on active planning and support at a municipality level to produce sustainable changes in the manner in which tourism ventures such as tourist accommodation use available resources such as water. According to the South African Department of Tourism's strategic review plan (Department of Tourism, 2016) South Africa has an appealing natural environment and climate conditions that are attractive to tourists. Yet tourism and tourism's role in building sustainable local economic development in the Transkei, specifically the town of Mthatha has been largely under researched (Ntonzima, Binza & Ferriera, 2014:3). Tourism accommodation facilities tend to act in a singular way, not considering the needs of the community with regard to the management of accommodation input resources, such as water, so research is needed (Ntonzima et al., 2014).

The Eastern Cape Tourism and Parks Agency (ECPTA) Annual report (ECPTA, 2016:17) under whose auspices Mthatha tourism falls, underpins sustainable use of local resources specifically mentioning that of water management, in the region's tourism development 2015/2016 to 2019/2020 strategic plans (Department of Tourism, 2015). The report highlights the authority's intention to set outcomes for local development tied to protecting and enhancing "environmental assets and natural resources", continuing that this would be done through promoting tourism products and services, along with "environmental education and awareness programmes for sustainable natural resource use" (ECPTA, 2016:17). The report further links the success of attaining these two objectives as integral to "unlocking opportunities for economic development by entrepreneurs, concessionaires, eco-tourism, and cultural tourism [thus developing] recreational and tourism infrastructure" (ECPTA, 2016:17).

With regard to water conservation strategies for tourism development, the state of the Mthatha river report (DWAF, 2008:12) indicated that although Mthatha has a reasonable amount of rainfall in the catchment area, Mthatha is frequently marred by extreme weather conditions such as heavy thunderstorms (leading to flooding in some areas), tornados, and extreme temperatures ranging from 3 to 40 degrees Celsius. The OR Tambo District Municipality (ORTDM) locations are affected by these weather conditions. The ORTDM Integrated Development Plan (IDP) for the period 2012 to 2017 (ORTDM, 2017) further attributed the scarcity of water in the municipality to the dilapidated water management infrastructure resulting in huge backlogs on water system repairs and maintenance, pollution of naturally occurring water, and the extension of the water system to private houses and businesses. Water wastage is not only limited to pollution and loss of water resources, but is a direct financial loss. For example, if an average monthly water bill is South African Rand (R) 1 000 per guesthouse, a loss of 50 per cent of metred water will result in an average direct loss of R500 per guesthouse. When that figure is extrapolated to the total population of guesthouses it might add up to hundreds of thousands of rand, perhaps millions, per annum. Asanda (2018) reported that there have been massive water losses, worth R554 million in potential revenue, in the Eastern Cape, within which falls ORTDM, which further stated that water losses almost doubled from R12 million to R22 million between 2016 and 2017. This lost 'water' money could

have been used fruitfully to enhance business sustainability, thus improving the livelihoods of members of society.

Weybrecht (2010:22) encouraged business to consider reduction of input water related costs, but warned that the initial costs of restructuring business into a green guest house business by managing water, may be high; however, in the long run huge savings and business sustainability can be achieved. The Tourism Grading Council of South Africa (TGCSA) (TGCSA, 2013:2) distinguishes a guesthouse as: "An existing home, a renovated home or a building that has been specifically designed as a residential dwelling to provide overnight accommodation, must have more than three rooms and public areas for the exclusive use of its guests. Bathroom facilities must be en-suite. If not, exclusive use of bathroom facilities per room is ensured". As can be seen from the TGCSA definition, water (bathrooms, food preparation) is essential to gaining grading stars and for guest satisfaction in grading. In guesthouses, water usage and electricity are major cost drivers in day-to-day overheads, and may result in loss of a business's competitive edge to those who manage these overheads better. This is because those who manage water well, not only save on consumption bills, but guarantee the availability of water as a resource. It is argued that conserving water reduces overhead costs, absorbs future water price increases, and yields tax benefits as direct financial implications for a guesthouse owner (Texas Water Development Board, 2007).

Literature review

Green practices at guesthouses are not only based on products, but also on water management knowledge, which ultimately cascades down to how resources are used daily and integrated. The Swedish International Development Cooperation Agency (SIDA) report (2004) highlights the dual benefits of water resources both quantitatively as a billion-dollar income base (for example the value of water is demonstrated by the prized contract earned by Lesotho through the sale of bulk water to South Africa, and through the generation of hydroelectricity. Mashinini (2010) noted that the Lesotho Highlands water project has improved the livelihoods of Lesotho's Basotho people), as well as qualitatively as access to water as a means of improving the quality of life of people. Weybrecht (2010), water was previously seen as being freely available, but is now seen to be a commodity which is traded at a price. This brings with it a need for awareness by users of water such as guesthouses, to realise and manage the costs to their businesses of obtaining clean water.

Lamb, Hair, McDaniel, Boshoff, Terblanche, Elliot and Klopper (2010) emphasised that competitive advantage gained from tacit experience and knowledge is one of the best as it is intangible, unique, and not easily copied by competitors. Therefore, guesthouses that practice green activities are likely to enjoy uniqueness and a much longer business cycle before they reach maturity and decline stages (Kuratko, Morris & Covin, 2011:8).

This research conservatively presents from a review of literature on water management, Figure 1 as a composite model (Mbenenge, 2018) that conceptualises water management practices as equal to the sum of the water system's architecture, water conservation, and water harvesting activities undertaken. This model presents an audit type process undertaken by reviewing stakeholders' behavioural patterns (in this case Transkei guesthouses) regarding the management of water:

> • Architecture: According to Ragheb, Elshimy, and Ragheb (2016), in order for a
> structure to be green, the architecture and design of a building or infrastructure
> should encompass features, which by design save water;

> • Water conservation: Das, Bera, and Moulick (2015) highlighted that scarcity of
> water necessitates efficiencies and designs that ensure that the available water
> is good quality and recycled to eliminate both wastage and pollution. For

example, a tourism guesthouse using recycled water to wash cars and flush toilets, low flow shower heads, and using ultra low flushing toilets;

• Water harvesting: Dladla, Everson, Everson, Modi, Fanadzo, Naiken, Auerbach, Moodley and Mtshali (2011) posited that the activity of collecting rainwater to sustain livelihoods is relatively low in South Africa, while the increase in population and unemployment increase pressure on agriculture to provide food. Therefore, water harvesting should play a pivotal role to ensure that water is always available when needed.
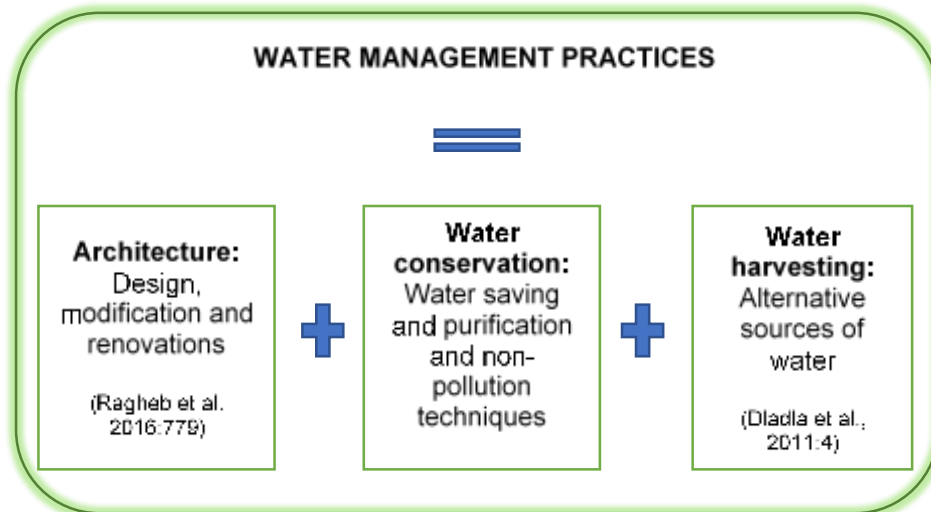

Figure 1. Water architectural design, conservation and harvesting
Source: Mbenenge (2018)

Next, themes to consider in questioning participants (Mthatha guesthouse owners) were identified sections. These themes describe ways in which Mthatha guesthouse owners could manage the actual cost of their water consumption. Weybrecht (2010) advises that whenever new water management structures are to be built or old ones renovated, water management by design applicable for guesthouse businesses could include: *Improved gutter systems*: When it rains, water is collected by means of the gutter; *Underground and surface water storage tanks*: These save space and can easily collect storm water by means of the gravity fall when it rains; *Smaller toilet cisterns*: On average, each toilet flush takes approximately 15 litres, so the smaller the cistern, the better. Furthermore, gravity can be used such that the pipe infrastructure has a good fall to ease movement without excessive water. A split cistern switch, for urine and solid waste respectively, is preferred; *Timed showers*: These have an automatic time that switches off the shower after so many minutes; *Water saving utensils*: These include environmentally friendly washing machines and pressure cleaners, among others.

Mthatha is hampered by a relatively inconsistent water supply from the local municipality. The following were considered in water harvesting to be considered by guesthouses (Weybrecht, 2010): *Boreholes*: These derive their water from the underground water base. They are capital intensive, but are a good source for cleaning, washing etcetera, as the water's purity cannot be guaranteed due to heavy metal contamination that is in the earth's crust; *Rainwater*: Much of the rainwater is washed away to the ocean if not collected. Guesthouses must collect as much rainwater as possible. Knowledge of rain patterns observed from having access to reliable historic records of water precipitation in an area (from a public source like a municipality or privately kept by measuring rainfall daily at a site) are also essential so that

stored water is managed efficiently; *Recycled water*: Rinsing water can be used to wash cars, mop floors, water the gardens, or even be used for flushing toilets; *Tank water storage*: Large 5 000-litre storage tanks are ideal for bulk water storage. When these are automated with pumps, there is usually no visible difference between municipal water and rainwater; *Water purification*: Reverse osmosis is becoming common in households, it removes water sediments, sludge, and chemicals as it purifies the water. It is ideal for purifying the rainwater and municipal water for purposes of drinking and cooking; *Environmentally friendly detergents*: Biodegradable soaps that do not contain harmful chemicals are ideal so that water can be easily recycled; *Maintenance*: Drips from leaking taps and pipes can be costly when left unattended for a long time. Pressure checks or abnormal metre reading can be red flags of water leakages; *Watering of gardens*: This should be done at night when it is cooler in order to prevent excessive evaporation due to the heat; *Washing of cars*: Buckets instead of hoses should be used with recycled or borehole water. Ideally, cars should be washed on the lawn so that the grass is simultaneously watered; *Showers and baths*: Just enough water should be run for a bath, and less time should be taken for a shower; digital shower heads should be used. The preliminary cold water before a hot shower should be collected and used to water plants and perform other domestic chores; *Washing of clothes*: Energy efficient machines should be used. Rinsing water should be recycled; *Cooking*: Vegetables and fruit should not be washed under running water, but in a small amount of water in a basin, which can then be used for watering plants.

There is no-one-size-fits-all and green water management models vary peculiar to the needs and operational capabilities of each guesthouse. However, every guesthouse can make an effort to implement some level of water management system depending upon its available limited budget. Ideally, a green water management practice framework is that which will encompass water management architecture, \water harvesting, and water conservation as demonstrated in Figure 1. Water management should subscribe to the principles of reduce (number of litres used), recycle and reuse (use water again for the second and further cycles) as prescribed by Weybrecht (2010).

Methodology

This research adopted exploratory, qualitative, descriptive research, as very little is known about Transkei tourism, particularly Mthatha guesthouses' water management practices. Mouton (2015) described an exploratory study as an empirical method, which asks what research case is considered, and seeks to identify the key factors of the problem. An inductive and interpretivist approach was used to gather and interpret data about water management as a business competitive advantage. Four methods of data collection were employed and this provided a triangulation of findings from various primary and secondary data sources. Babbie and Mouton (2012) highlight the value of triangulation over the use of a single method which often only allows for the limited perspective of one data source to be captured. Triangulation gives several views of the same problem and in doing so delivers richer findings. The four methods follow:

- Purposively selected guesthouse owners were participants who after ethical consent and approval, gave their important insights to the research problem (Saunders, Lewis & Thornhill, 2012). Data collected from these participants was the first point of data triangulation;
- Water quality can detrimentally affect both the guesthouse staff and their customers if not of a quality for human consumption, as suggested by the World Health Organisation (WHO) (WHO, 2017). This could result in a worst-case scenario of customers becoming ill from municipal water and the guesthouse being sued or losing future customers, as past customers' report on their bad experiences on tourism advisory sites such as TripAdvisor™. To this end, a sample of municipal water was analysed for this research by Reid Line CC Laboratories. The scientific analysis of the

water allowed triangulation of participants' thoughts on municipal water quality against actual water quality;

- Babbie and Mouton (2012) highlight the practice of simple observation as a third qualitative data collection method. In this instance the researcher opted for simple observation, requesting of the guesthouse owners that the researcher independently and critically evaluated the operational water practices at each guesthouse. The researcher has been trained in water management and owns a Mthatha guest house himself so felt competent to observe water management practice. This procedure is in line with Weybrecht's (2010) advise to use a monitoring process to evaluate environmental management systems. This third method provided a means of corroborating interview data gathered from guesthouse owners. The researcher is trained in green water management practices, and as such was competent to judge the value being added by guesthouse water management systems;
- Finally, the research data collection relevant to water management in Mthatha and Transkei incorporating secondary data analysis from reports of the ORTDM (2017), IDP reports and, SIDA (2004), which were available in the public domain of the internet presented in the background and literature review of this study.

Sampling procedure

Babbie and Mouton (2012) support purposive sampling in instances where there is a limited population knowledgeable on the research context and problem. In this research, participants from tourism guest houses who should embrace the role of water management in business, were interviewed. The paucity of existing academic literature on Transkei tourism, let alone Transkei guesthouses, indicates that this research and its findings have a role to play in tourism business resource strategy development. This view is supported by Jakpar, Johari, Myint, and Rani (2011), and Getz and Timur (2012) who noted that residents of a destination must be considered stakeholders who can give important input when developing strategy. Sebele (2010:131) went further indicating that for tourism activities to make a vital difference to the economic stability of a community, such as the Mthatha resident community (where there is currently high unemployment), community opinions must be sought. A list of TGCSA graded guesthouses was obtained from the Eastern Cape Department of Tourism, Mthatha district. All guesthouses (57) on the list were emailed to ask to participate in the study but only 10 responded. Interviews were held with these 10 guesthouse senior managers or owners. This sample size represented approximately 17 per cent of the total population of 57 graded guesthouses registered in Mthatha.

Target Sample	Level in Organisation	No of bedrooms	No of Bathrooms	Star grading
Cluster 1: City Centre				
Participant 1	Maintenance manager	48	51	3 Star
Participant 4	Senior manager	13	14	3 Star
Participant 8	Middle level manager	9	12	4 Star
Participant 9	Owner	9	9	2 Star
Cluster 2: Fort Gale / Myezo				
Participant 2	Supervisor	14	16	4 Star
Participant 5	Senior manager	10	11	3 Star
Participant 6	Senior manager	17	20	3 Star
Participant 7	Middle level manage	13	15	3 Star
Cluster 3: Southridge Park				
Participant 3	Supervisor	12	12	3 Star
Participant 10	Middle level manager	15	16	3 Star

Table 1. Details of participants interviewed

Face-to-face, semi-structured interviews were carried out with each participant after ethical aspects were considered and participants consented to be involved. They were free to withdraw from the study at any time and were not in any way incentivised to participate. Each

section was probed by asking the participant "yes" or "no", or "agree" or "disagree" type questions, the participants were then further probed as to the reasons for their answers. For instance in section1 of the schedule a participant would be asked – Do you think you should undertake modification of guesthouse amenities to save water or rather rely on municipal water? These sub questions gave a viewpoint as to why, when and to what extent guesthouses applied water management practices in terms of gaining a business competitive advantage. A cellular phone was used to audio record the interviews. The qualitative questionnaire schedule was divided into six sections. Part A Section 1 captured the business management role of the participant and the structure of the guest house (see Table 1). The remainder of the sections (part B sections 1-5) in the schedule were as follows to elicit guesthouse owners' knowledge on specific parts of the water architectural design, conservation and harvesting model (Figure 1):

- **Section 1** - Reliance on municipal water and modification of guesthouse amenities to save water. Business argument for this section: is that moving to self-sustainability in a business removes the risk of water not being available or poor-quality water being supplied by the municipality. This in turn affects the quality of the service given to customers, which in turn may lead to a decline in customers. The use of alternative sources of water like bore holes and rainwater also reduces the municipal bills, ensures continuous availability of a water resource, creates customer confidence, and increases profitability. Louw and Venter (2012) emphasised the danger of substitution, a situation in which the municipality may itself due to business adopting green practices, thus the municipality may have excess water and not be able to earn as much revenue as they used to do. Rossouw and van Vuuren (2010:82) also posited that in business, a balance should be struck between profit and social responsibility. Therefore, businesses exploiting alternative sources of water and implementing water saving techniques is the right thing to do as they are heavy users, and it would be socially responsible to do so.

- **Section 2** – Water harvesting activities at your guesthouse: Awareness of use and value of water harvesting. Boreholes are an important source of alternative water. Do you have a borehole/ consider having one and why? Recycled water can be used to wash cars, mop floors and any other job that does not require drinkable water. Business argument for this section: Weybrecht, (2010) supports the use of alternative sources of water, which include boreholes. Das et al. (2015) highlighted the importance of making adjustments to facilities by means of water efficient designs. Boreholes are an example of modification or addition to existing infrastructure for alternative sources of water. Recycling forms part of the theory for sustainability as noted by Chandler. Chandler, Amatori and Hikono (1997), and Jones and Zeitlin (2008). Recycling and harvesting water mean that cost advantages are gained for a business;

- **Section 3** – Water conservation and non-pollution techniques. Water purification - Do you have reverse osmosis or any other purification system for drinking water? you use biodegradable soaps or detergents? Are garden watered during the cool hours? Is recycled water used for washing cars? Business argument for this section: Milla and Huang (2007:49) acknowledge that there is a strong link between solid waste and water and that action needs to be taken in order to ensure that water is not contaminated. Weybrecht (2010:333) also supported the use of biodegradable detergents and is against dumping of pollutants. Chandler et al. (1997:5), and, Jones and Zeitlin (2008:4) support the actions like recycling, whereby previously used water gets reused. Recycling water means that cost advantages are gained;

- **Section 4** – Maintenance. Is there a dedicated person responsible for maintenance, or a plumber appointed on ad hoc basis? Business argument for this section: Maintenance by onsite repairperson and those appointed on ad hoc basis form part of the efficiency processes proposed by Weybrecht (2010) and King and Lessidrenska

(2009) wherein amenities are repaired and attended to before losses are incurred. Maintenance leads to lower business overheads in terms of water used.

- **Section 5** - Behaviour – attitudes and knowledge of strategic water practices. Guesthouse owner promotion to guests of water conservation as a competitive advantage for instance - Notices on strategic water practices are accessible in all rooms. Business argument for this section: Attitudes of guests and guesthouse owners should be aligned to those of attaining environmental sustainability. Written messages to probe action are effective (Weybrecht, 2010) as written information is a constant reminder to guests and staff of the role of water in management strategy. Feedback from guests and staff is also important as it probes corrective action where necessary. According to Robbins, Judge, Odendaal and Roodt (2016) these management messages should be expressed in language understandable by guests and staff to promote mindfulness of the water strategy.

According to Babbie and Mouton (2012), in order for qualitative research to be trustworthy (i.e. objective and valid), the criteria of credibility, transferability, dependability, and confirmability need to be met. The notions of trustworthiness are discussed in relation to the research: **Credibility**: A procedure of triangulation was applied in this research, by not only collecting data from the interviews, but also what is in existence. The information gathered in interviews was collaborated by physically inspecting the amenities in the guesthouses (Babbie & Mouton, 2012). The procedure of triangulation was further fortified by referential adequacy, wherein not only the interview notes were transcribed into questionnaires but also audio taped to ensure the validity of the findings; **Transferability**: This procedure outlined that qualitative research does not imply that knowledge gained is necessarily relevant to all contexts, or the same context in a different time frame.

Babbie and Mouton (2012) therefore suggest data be collected, with detailed reporting that should be enough to allow a degree of transferability to another similar context. In order to overcome the challenges of transferability, the questionnaires were aligned with answering the research question in this specific geographic context; **Dependability**: It is assumed that the accuracy of the data and its findings should be such that if the research were to be re-performed, the results would be similar. During interviews, detailed explanations, by means of examples and details, were provided to the participants such that if the interviews were to be re-conducted, similar responses and results could be expected (Babbie & Mouton, 2012); **Confirmability**: Babbie and Mouton (2012) warn against biases of terms and items when conducting interviews; for example, the statement "don't you agree", as a biased question. The survey questionnaire's sections were crafted to allow open-ended answers wherein participants were allowed to express what they thought about water strategy practices.

Findings and discussion

Interviews were analysed using content analysis, and interpreted against the background of existing literature in this knowledge domain.

Most of the guesthouses were graded at a three star level, except for one that was graded a two star and two that were four star. All the guesthouses proved to have been in operation for some time, as the newest was six years in operation and the oldest, 15 years. Coincidentally the 15-year-old guesthouse was the one that had highest number of bedrooms and bathrooms, which totalled 48 and 51 respectively.

Section 1: Reliance on municipal water and modification of guesthouse amenities to save water. Out of a total of 10 guesthouses, the majority did not consider the municipal water supply as reliable (seven), and observation confirmed with the interviews that most did not save water on shower usages (seven), and did not utilise rain water sourced through the gutter

system (eight). Nine respondents had water saving toilets/cisterns, seven had water efficient washing machines, and eight perceived the municipal water quality as good to use when they can get it.

Section 2: Water harvesting at guesthouses. None of the 10 guesthouses harvested water through boreholes or re-used water. None of the practices and amenities suggested earlier in this paper were identified when the premises were inspected, thus corroborating this information. Although respondents showed interest in installing the amenities and practicing water harvesting and recycling, there seemed to be no sense of urgency in doing so in the short-term.

Section 3: Water conservation and non-pollution techniques. The guesthouses did not apply water conservation techniques as they did not have water purification facilities; nor did they water their gardens during the cool hours, or wash cars using recycled water. There was a misunderstood concept highlighted in the interviews regarding biodegradable soaps; the participants were unsure whether the soaps they used were biodegradable. Some believed that the latest soaps were environmentally friendly by default.

Section 4: Maintenance. All guesthouses had access to maintenance staff to attend to water leaks, burst pipes, and other water challenges; however, only the large guesthouse (with 48 bedrooms) had a permanent staff member. The remaining nine had a backup plan wherein they could summon the services of plumber on an ad hoc basis when challenges occurred. Such an arrangement was a reactive, rather than a preventative measure, wherein leaks are identified are rectified in good time, as posited by King and Lessidrenska (2009).

Section 5: Behaviour – attitudes and knowledge of strategic water practices. Although all participants agreed that water management practices save costs and water, only three engaged with staff about water management as an agenda item in their regular staff meetings. Only one guesthouse (the 48-bedroom guesthouse) had pre-printed notices in bathrooms to inform guests of water saving techniques. The same guesthouse believed that guests were slowly becoming aware of water management practices while the remaining nine respondents believed that it was a good thing to inform guests of such practices, as part of their business management philosophy, even though they had not yet engaged in such.

The availability of a municipal water supply was considered unstable and unreliable by participants' interviewed, researcher observations, and in documentary evidence derived in earlier sections from municipal documents in the public domain. Furthermore, although the majority of respondents considered use of municipal water for drinking as safe, laboratory tests proved the contrary, as the tap water had impurities, sediments, heavy metals, and in many instances did not meet the target WHO standards. The majority of guesthouses did not implement water management practices.

Quality of municipal water

Eight of the participants perceived the municipal water quality as being of good quality. Their measure of quality was based on the assertion that there has never been an outbreak of disease, which would occur because of poor quality municipal water. Only two guesthouses, of the total sample of 10, were sceptical about the quality of municipal water. In order to mitigate the risk of guests drinking the perceived unclean water, these two provided bottled water for their guests to drink. Bottled water comes at an extra input cost to the business, but helps ensure guest loyalty and return visits, which in turn helps the business to remain viable. Bottled water is however, an added cost that could affect the profitability of the guesthouse and could be avoided with the installation of filters to purify municipal water, instead of buying smaller, more expensive quantities of drinking water.

Furthermore, Meybeck, Kuusisto, Mäkelä, and Mälkki (1996:02) warn that although water quality can be compromised by pollution. The varying views obtained from the participants

about the quality of municipal water was checked by the researcher sending a ORTDM tap water sample from one of the eight (who gave guests tap water to drink and used tap water in cooking) guest houses' municipal connected taps to Reid-Line Scientific Services laboratory (2018) for analysis. The results are presented in Table 2.

Determinants constituents	ORTDM Result	QC Standard Goals	Variance between ORTDM and QC Standard Goals	Target per Certificate	Variance above Target	Percentage Variance above Target
i) General						
Total Suspended Solids	5,92	0	5,92	Must be absent	5,92	100%
Turbidity	4,55	0,5	4,05	Target <0,15	4,4	97%
Colour (Pt/Co Units)	17	30	-13	Target <15	3	18%
Odour (TON) (Instrumentation)	4,8	5	-0,2	Target<4	0,8	17%
Aluminium (Micrograms per litre)	217	150	67	Target<50	168	77%
Iron (Micrograms per litre)	48	200	-152	Target<20	29	60%
Total Heavy Metal content (micrograms per litre)(Sb+As+Cd+Cr+Co+Pb+Hg+Sc)	8	20	-12	Target=0	8	100%
Silica (Total) (as Si O2)(Micro grams per litre	107	not specified	N/a	Target <20	88	82%
Silica (colloidal) (As Si)	58	0	58	Preferably eliminate	58	100%
Free & Saline Ammonia (as N) Micrograms per litre	210	200	10	Target <20	191	91%

Determinants constituents	ORTDM Result	QC Standard Goals	Variance between ORTDM and QC Standard Goals	Target per Certificate	Variance above Target	Percentage Variance above Target
ii) Biological Activity						
Total Heterophic Plate Count (THPC) (Colonies per ml)	284	100	184	Should not exceed 100	184	65%
Total Coliforms (Coliforms per millilitre)	5	0	5	Must be Absent =0	5	100%
Moulds & Yeast (Positive /Negative Tests)	Positive	Negative	n/a	Must be Negative		
iii) Water Treatment Critical Data						

Determinants constituents	ORTDM Result	QC Standard Goals	Variance between ORTDM and QC Standard Goals	Target per Certificate	Variance above Target	Percentage Variance above Target
Total Suspended Solids (TSS) (Micrograms per litre)	592	0	592	Must be absent	592	100%
Total Active Chlorine (Micrograms per litre)	26	<200		Eliminate	26	100%
Disinfectant by – products (Total) (Micrograms per litre)	192	<150		Eliminate	192	100%
Turbidity (NTU)	4,55	<.15		Reduce to <0.15	4,41	97%
NTU after 0.2 lab filtration test	0,16	Show influence of suspended oxidisable content and DOC on colour	n/a	Show influence of suspended oxidisable content and DOC on colour		
Colour (Pt/ Co Units)	17	<15		Target <15	3	18%
Colour after 0.2 lab filtration test	15	Show influence of suspended oxidisable content and DOC on colour	n/a	Show influence of suspended oxidisable content and DOC on colour		
Total Organic Carbon (TOC)	12,3	Eliminate suspended carbon	n/a	Eliminate suspended carbon	12,3	
Dissolved Organic Carbon (DOC)	8,14			Target <5.0	3,24	40%
Langelier Saturation Index (LSIn@22 degrees Celsius)	0	Use high quality corrosion resistant equipment	n/a	Use high quality corrosion resistant equipment		
Oxidation Demand (Milligrams - H2O2)	8,4		n/a	Target <5.0	3,5	42%

Table 2. Summary of ORTDM water analysis
Source: Adapted from Reid Line CC Laboratories (2018)

General testing feedback (Table 2): According to Martin and Griswold (2009:1), the presence of heavy metals and other contaminants in drinking water can have a negative impact on the health of those who drink it. They listed health challenges like kidney failure, shortness of breath, lung failure, and other diseases, which occur as a result of the intake of levels beyond the permissible amount. Of the 28 elements tested, 10 were unacceptable in this category, as seen in the column 'variance above target' in Table 4.1. While the target was that there should be no total suspended solids in water, 5.92 units were identified. A total of 4.55 turbidity was also identified resulting in an excess of 4.4 from the target of 0.15 (a 97 per cent variance from

the required goal). Furthermore, even though colour and odour exceeded the target by a smaller margin of 17 per cent and 18 per cent respectively, the discrepancy is still a reason for concern. The presence of heavy metals like aluminium exceeded the target of less than 50 by 168, totalling 217 (a variance of 77 per cent). In contrast, although 48 micrograms per litre of iron was within the acceptable QC standard of less than 200 micrograms per litre, the outcome was still higher than the target of less than 20 micrograms per litre (a 60 per cent variance). The total heavy metal content also showed eight micrograms per litre while the target was zero. Free and saline ammonia had 210 micrograms per litre, only 10 units above the world standard, but 191 units above the target of less than 20 units (a 91 per cent deviation).

Biological activity (Table 2): Hurst, Christian, and Schuler (2010) advised that while yeast, moulds, and fungi form part of the good bacteria used in foods fermentation to change colour and flavour, and to produce citric and lactic acids and many other enzymes, they warn that some yeast infections, though less common than other bacteria, can be harmful to humans. They also introduced plate counting as a simple method of counting the bacteria without using a microscope. Procedurally, this method has been used by the Reid-Line laboratory to count the colonies present in the sample provided to them by the researcher. At least three of seven elements were highlighted as out of the norm items within the biological activities, as seen in the column 'variance above target'. A total of 284 heterotrophic plate count colonies per millilitre were recorded, 184 above the maximum of 100 (65 per cent variance above the target). The total coliforms per 100 millilitres were five times more than the total permissible unit of zero. The positive/negative test for presence of mould and yeasts yielded a positive result when in fact only a negative result is allowed.

Water treatment critical data (Table 2): The DWAF report on treatment of water (DWAF, 2002) advises that the removal of suspended and colloidal material from water is important, as the water then looks clean and clear (turbidity). The report further warns that while chlorine can be used as a disinfectant, the use of quantities beyond those required can be harmful to humans (DWAF, 2002). Of 17 items tested, 11 tested positive indicating problems, as seen in the column 'variance above target' in Table 2. Total suspended solids measured 5.92 micrograms per litre; these ought to be absent. Furthermore, the total chlorine measured 26 micrograms per litre; despite being within the equal to or less than 200 range, these were 26 times more than the required target of zero.

Similarly, disinfectant by-products measured 192 micrograms per litre against the target of zero. A turbidity score of 4.55 against the target of less than 0.15 showed a variance of 97 per cent percent beyond the target. While the Nephelometric Turbidity Units filtration test and colour after 0,2 filtration scored .016 and 15 respectively, neither showed any of the required influence of oxidisable content and dissolved organic carbon on turbidity. Colour almost matched the target of less than 15 on the Platinum-Cobalt (Pt/Co) scale, with a score of 17, it was only three units above the limit. The total organic carbon and dissolved organic carbon were 12.3 and 8.14, against targets of total elimination and less than 5.0 respectively. A Langelier saturation index of -1.002 was registered, which at this level it was recommended that high quality corrosion resistant equipment is supposed to be used. Oxidation demand of 8.4 milligrams per litre was registered against the target of less than five milligrams per litre.

The gross variances and out of the norm water sample test results discussed above confirmed that even though participants had confidence in the purity of municipal water, scientifically the water was proven to be impure and not good for drinking purposes. Supplying guests with impure water for drinking, might result in hospitalisation or even death, and could be a time bomb for law suits against guesthouses or the municipality. Should this occur, affected guesthouses costs could run to millions of Rand in litigation claims, resulting at worst in business liquidation, and at best in loss of guest credibility and trust.

Recommendations

The perceptions of guesthouse owners towards water management as a business tool for competitive advantage can be influenced by the actions of the Department of Tourism. As such, the following actions should be implemented by Department of Tourism in alignment with the TGCSA:

- ***Alter star grading criteria***

Sustainability, practices related to resources such as water are not included in the criteria of granting stars, especially considering that guesthouses are use large quantities of water. With current grading criteria, it is probable that a guesthouse can be granted the stars, yet do not practice natural resource management. The findings suggested that the grading criteria be revisited and amended to include resource management practices.

- ***Report on sustainability***

According to Louw and Venter (2010:337), businesses are beginning to report on sustainability. With such reporting, businesses keep track of their performance, relating it to actions taken to promote input resource sustainability, such as water management. Tourism could introduce annual reporting for guesthouses, so that it is always possible for the guesthouse to assess how its resource management practice affects its business viability. A later research article by Louw and Venter (2012) suggested that sustainability strategies be included on an ongoing basis in business strategic planning, as only in instances whereby sustainability is planned is reporting thereof possible. Furthermore, in order for sustainability to be effective it should form part of the balanced score card model (Kaplan & Norton, 1996), as suggested by Louw and Venter (2012:21) who posited that the balanced score card is a useful tool to measure, monitor, and challenge a business to achieve integrated strategic business goals

As regards the perceptions of the guest house participants of water quality compared to the sample taken and analysed the following recommendation s are made to the ORTDM municipality:

- ***Formulate a committee to oversee water pollution***

A committee dedicated to the monitoring and evaluation of sewer leaks should be appointed so that sewer leaks and over flows are identified and repaired within a short space of time. According to Robbins et al. (2016), performance evaluation is done to pin point the skills gaps, implement remedial action, and reward or punish for success or failure respectively. The introduction of a committee would ensure that the committee performs the functions highlighted by Robbins et al. (2016).

- ***Integrate water services and refuse collection***

Weybrecht, (2010) warns against 'silo thinking', where issues that are related are considered in isolation, yet when looked at together, there are opportunities to achieve great results. Refuse collection is not a function of ORTDM whereas water services is the responsibility of the ORTDM. Non-collection of refuse has an inverse relationship with clean water supply, as if refuse is left unattended, it contaminates water sources. A workable strategy by the municipality to co-ordinate waste removal to stop water pollution should be drafted and implemented. SIDA (2004:27) also proposed a simultaneous approach to water and solid waste disposal, which is supported by these findings.

As regards the business argument for water management as a business strategy the following observations and recommendations are made: For many years, the focus of business has been orientated towards profit, with little or no attention given to ensuring that the very resources that make it successful now (such as water) may face depletion, even exhaustion, unless steps are taken to guarantee the sustainability of the business into the foreseeable future. According King and Lessindrenska (2009:185), pursuits of profit alone do not address

the creation of opportunity for business longevity. Furthermore, investment in sustainable business practices gives the business a competitive advantage over those who do not. Investment in environmental management infrastructure, such as water storage tanks, and the modification and redesign of the water infrastructure, may appear to be financially cumbersome but research has proven that once alternative sources of water are implemented, there is a direct monetary benefit as less municipal water is used, resulting in lower bills (Correia et al., 2007).

In situations of extended water outages, guests will simply cancel their bookings in guesthouses that do not have water and book with guesthouses that do have water. In addition, when making their next booking, guesthouses that adequately manage their water during a municipal outage, would be on the customer priority list. King and Lessidrenska (2009) warn that as individuals become aware of green practices, they will make informed choices of where to spend or invest their money avoiding activities or products where the environment is harmed or polluted.

Limitations of this study included that: Firstly, the study concentrated on selected guesthouses in the Mthatha district. This suggests that the study findings may not necessarily be applicable for all guesthouses in other areas of the Transkei; however, elements of its recommendations may be universally useful for tourism guesthouses to consider; secondly environmental practices in business have a wide scope, which covering a variety of cost saving alternatives. This research was specific to water management practices as they pertained to creating competitive business advantages; however, there are many other types of business practices that could be considered such as solar energy, wind turbines, and other green practices, which are not covered in this research. Specific dedicated research would be necessary to deal with such important environmental management topics.

Further research is recommended as regards the findings of the largest guesthouse which had a number of water management practices to sustain their business, compared to others raising the question - Is there any relationship between the size of the guesthouse and business management environmental sustainability strategies?

Conclusions

According to Maslow (1943), in the hierarchy of human needs, water forms part of the basic physiological human needs, which include food, water and shelter. This denotes that people cannot survive without water. Maslow (1943:370) further referred to the deprivation of the need satisfaction as a societal "sickness" and the "satisfaction" thereof as a "good society". Gleick and Iwra, (2014:83) now highlight a consistent gap between the demand for potable water and the supply of such water in developing countries. Attaining a degree of sustainability in management practice helps ensure long-term business viability and survival, environmentally, socially, and economically (Doane & McGillivray, 2010). Kates, Thomas, Parris, and Leiserowitz (2005) view practising sustainability as a social movement in which a group of people share a common ideology as regards practical ways to ensure potable water for a community   working to achieve certain general goals like regular assurance to communities of the quality of their drinking water, and, training for people on how to capture, store and recycle water. Based on this definition, it can be concluded that in answering the research question - to what extent do Mthatha guesthouses practice strategic business management activities with regard to water usage? - there should be more than individual effort by each guesthouse, but a focused group or societal activity that incorporates both the business and the community(s) in which its business strategies are applied. It is therefore imperative that guesthouse managers understand the processes and practices of sustainability by attaching importance to their business strategy as regards critically important resources such as water.

While this research focused on guesthouse water management practices, the influence of humankind on the natural environment is continuously having negative impacts which, if not attended to, will result in catastrophic consequences for society. In the short-term, conducting any business successfully and simultaneously managing the water supply can be seen as a competitive business advantage, in the long term this can also have positive implications for society at large. It is hoped that this research will positively influence the livelihoods of all tourism stakeholders, not only the guesthouses of Mthatha and other bulk water users, where the findings will be used as a reference point to foster change and implement better business management practices.

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