

Guest Houses, Drought and Water Management Strategies in the Cape Winelands, South Africa

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Abstract

Tourism is a dynamic system essentially connected to all aspects of human and natural environments. Among these tourism systems and products, providers of tourist accommodation stand out. Within this context, water provision is crucial for tourist accommodation. Unfortunately, climate variability, and therefore, water availability, can and does impact tourism systems and tourism products, perhaps disproportionately so. In South Africa generally, and in an established tourism destination region such as the Cape Winelands in particular, guest houses are key role-players in the tourist industry. Nonetheless, from 2015 to 2018, this destination region experienced a crippling long-lasting drought, leading to fears of an imminent “Day Zero” – a point at which taps run dry. This would have been calamitous for tourism. To avert this, various water management strategies were implemented by Stellenbosch guest houses – the focal point of the Cape Winelands tourism region – to cope with and adapt to the drought. This study sought to examine the water management strategies manifested in the study region. It is concluded that various strategies were followed, and some appear to be permanent, rather than once-off responses. While these strategies might lead to more responsible water management strategies in tourist accommodation going forward, it appears that adopting sustainable water use practices was only done under duress and serious resistance from some guests resulted. It may be that water supply augmentation is the only way to preserve the tourism industry.

Keywords: Stellenbosch, South Africa, Guest Houses, Water Management

Introduction

Global tourism currently faces many challenges, with the COVID-19 pandemic taking centre stage (Gössling, Scott & Hall, 2021). A vast literature has developed concerning this crisis’s impact on tourism (see Rogerson & Rogerson, 2021a for a state-of-the-art review). In many ways, the COVID-19 pandemic is interpreted as a “Black Swan” event (Spies & Jones, 2020). A Black Swan is a metaphor for an event that comes as a surprise, has a major effect, and is often inappropriately rationalised after the fact, with the benefit of hindsight (Taleb, 2007). Sept 11 is a good example of a Black Swan event. While such crisis events are not regular, other anticipated challenges present themselves. In this regard, climate change and its impact on tourism is one such anticipated event. Yet climate change is seldom included in tourism planning and industry practices in any significant manner (Gössling, Hall, Peeters & Scott, 2010; Gren & Huijbens, 2019). This exclusion might make climate change ‘the elephant in the room’. In South Africa, climate change is anticipated to hold dire consequences for all levels of society and the economy, not least tourism (Fitchett & Hoogendoorn, 2018; Hoogendoorn & Fitchett, 2018; Pandy & Rogerson, 2020). Tourism plays a crucial role in the economy of

the Western Cape, being a popular tourist destination for both domestic and international tourists (Western Cape Tourism, 2020; Rogerson & Visser, 2020). At the same time, the Western Cape is experiencing rapid urbanisation (Visser & Horn, 2021). Growth of the tourism sector, alongside rapid urbanisation and arising incomes has results in increased pressure on water resources (Wisner & Pelling, 2009). For the tourist industry, water stress associated with climate change may even be a “Black Elephant”, that is, a cross between a black swan and an elephant: an unlikely, unexpected event with enormous ramifications and, at the same time, a looming disaster visible to all, yet one that everyone prefers to ignore (Spies & Jones, 2020). Dealing with climate change may be purposefully avoided as existing power relationships in the economic, political, and socio-cultural realms (various role-players) will be destabilised (Gren & Huijbens, 2019). Under such conditions, a foreseen event (by experts) but thought of as highly unlikely, is the severe drought that befell the Western Cape between 2015 and 2018. One popular tourist area is the Stellenbosch Winelands as tourists enjoy the wine farms, historical buildings, cafes, and upmarket accommodation (Ferreira, 2020; Ferreira & Müller, 2013). Stellenbosch has over 200 guest houses (Visser & Eastes, 2020). Due to an exceptional drought event, accommodation and business owners had to find innovative ways of reducing their water consumption (Figure 1). It is for this reason that this investigation focuses on the Stellenbosch area.

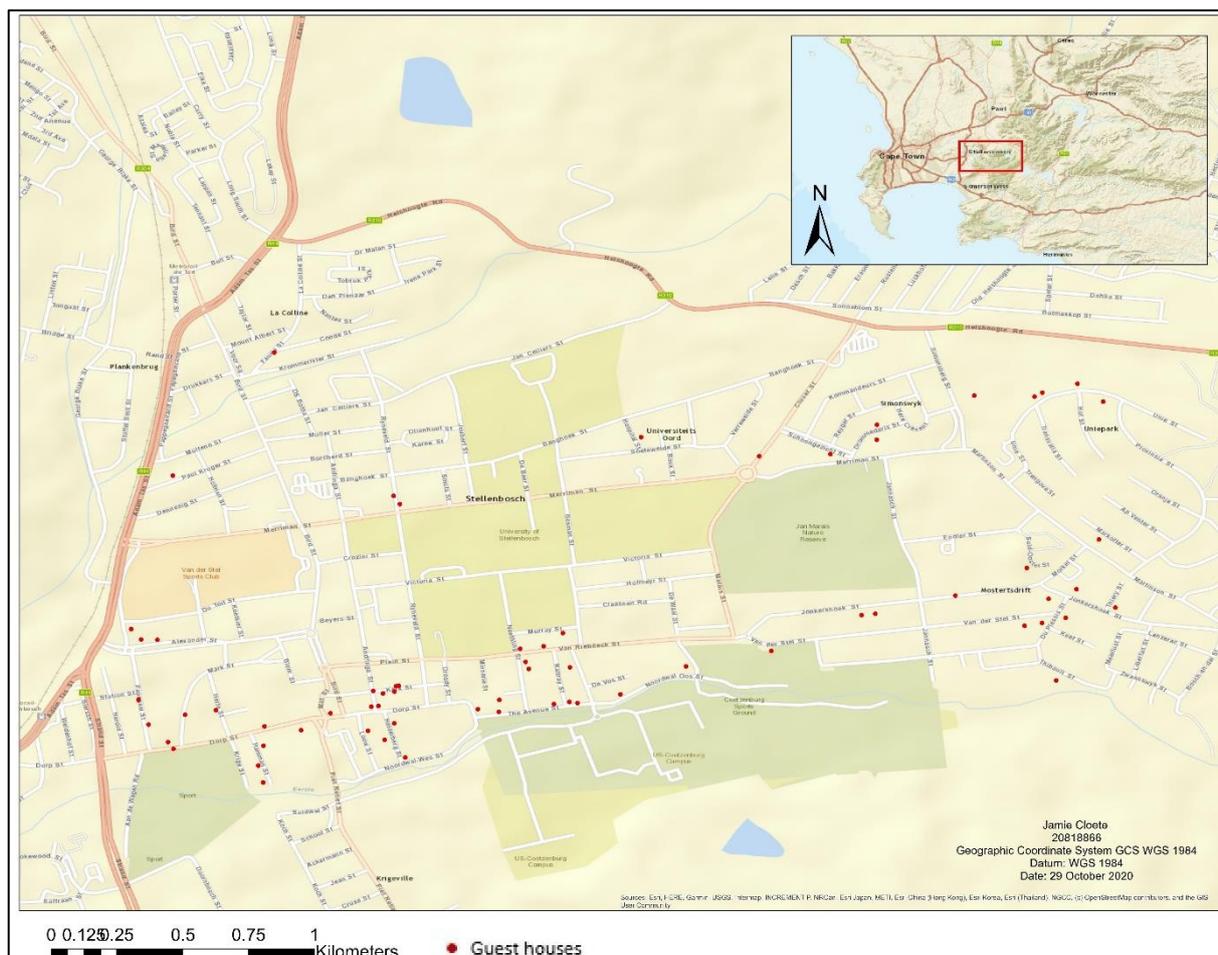


Figure 1: Locations of guest houses in central Stellenbosch

The Western Cape faced a severe drought between 2015 and 2017 due to several factors such as increasingly unpredictable rainfall, high run-off, high evaporation rates and anthropogenic

factors (Botai, Botai, De Wit, Ncongwane & Adeola, 2017). This led to fear that “Day Zero” – the day the region’s taps would run dry – would be realised (Nhamo & Agyepong, 2019). Drought itself is no surprise in South Africa, a country that is semi-arid and water-scarce, a situation made worse over time as the economy and population grew (Rawlins, 2019). Despite this, little research has been conducted on this issue from a tourist perspective, other than a focus on water management strategies in South African hotels (Rogerson & Sims, 2012). There has been nearly no research on water management in guest houses (an exception is that by Hoogendoorn, Grant & Fitchett, 2015) – a popular accommodation choice amongst tourists (Visser & Eastes, 2020). In this investigation, consideration is given to the 77 guest houses (ranging from 2 to 16 bedrooms) in the central part of Stellenbosch. Qualitative research methods – interviews (a mix of face-to-face, telephone and email communication) with the management of guest houses, using the same semi-structured interview schedule – aimed to determine which water management strategies were deployed. To achieve this goal, a brief review of tourism and climate change, drought and tourism is provided. Thereafter, the main water management interventions are analysed and, finally, conclusions are drawn.

Climate change, drought, and tourist accommodation

Climate change has been a known phenomenon for decades (Gren & Huijbens, 2019). The aim to reach net-zero carbon emissions by 2050 is starting to seem far-fetched as the World Meteorological Organisation observed that, in 2019, increased carbon emission has led to a global temperature increase of 1.1 °C (World Meteorological Organization, 2020). South Africa is a drought-prone country and climate change has and will further impact water scarcity in the future. South Africa is becoming drier and warmer (Dube, Nhamo & Chikodzi, 2021; Hulme, Doherty, Ngara, New & Lister, 2001; Midgley, Rutherford & Bond, 2008; Steyn, 2012). Among the most affected regions is the Western Cape, which experienced the effect of climate change when it recorded its lowest rainfall and dam levels between 2015 and early 2018. The Western Cape Department of Environmental Affairs and Development Planning mentioned that climate change will affect the Western Cape Province through higher-than-average temperatures, increased heat waves, higher minimum temperatures, fewer cold days, increased sea levels and the increased frequency and intensity of extreme weather events, such as floods (Western Cape Government, 2018).

Adaptation strategies are regarded as the mechanism to manage risks, adjust economic activity to reduce vulnerability and improve business certainty (Jopp, De Lacey & Mair, 2010; Steyn, 2012). Adaptation can be explained as learning to adjust and to live side-by-side with a changing climate (Nhamo & Agyepong, 2019: 1). During the COP 17 Conference on Climate Change held in South Africa in 2011, it was noted that the role of governments was important in reducing the impact of climate change. Governments were requested to sign a binding agreement leading to the reduction of CO² emissions but, unfortunately, a few governments did not sign this, let alone adopt it (Steyn, 2012). Adaptation strategies are generally developed to benefit local communities through targeted responses to local climate change and are best implemented at provincial or local authority level (Scott, Amelung, Becken, Ceron, Du Bois & Gössling, 2008; Steyn, 2012). Government authorities are to encourage climate change responses to protect the environment.

For the province, the Western Cape Government responds to climate change by playing its part in the global effort to reduce greenhouse emissions. The Climate Change Response Strategy aims to reduce greenhouse gases and help citizens to adapt to the changing climate both socially and economically. The Climate Change Response Strategy focuses on energy efficiency, renewable energy, the built environment, sustainable transport, water security and

efficiency, biodiversity, coastal and estuary management, food security and health (Western Cape Government, 2018).

During the extreme Western Cape drought, there were many disputes as to the cause. Some argued that the drought was caused by poor planning and the mismanagement of the Western Cape Water Supply System (WCWSS), while others argued that it simply was the climate (Wolski, 2018). Vogel and Olivier (2019), however, contest that the main cause of drought is related to growing settlements, rapid urbanisation, and inadequate infrastructure. Regardless, drought is, and will increasingly be, the new normal (Botai et al., 2017; Mukheibir, 2008; Scholes, Scholes & Lucas, 2015).

The intersection between drought and the South African tourism system is a largely neglected area of investigation. As recently recorded in state-of-the-art reviews (Rogerson & Visser, 2020; Rogerson & Rogerson, 2021b), a significant body of scholarship and policy research focused on the South African tourism system has come to press in the recent past. It suggests that the importance of tourism to the South African economy cannot be underestimated, yet water management strategies in the tourism system is not a key focus in local tourism discourse. The availability of clean water is a major concern, and the lack thereof poses a threat to tourism systems.

In the South African hotel industry, green initiatives are driven by the vision of top management and by individual hotel managers (Rogerson & Sims, 2012). Since 1996, the promotion of responsible tourism has been an integral part of the South African tourism policy (Rogerson & Sims, 2012). The Department of Environmental Affairs and Tourism produced a succession of policy documents that emphasised the commitment to responsible tourism practices. The 2011 National Tourism Sector Strategy (NTSS) gave considerable weight to encouraging the greening of South Africa's national tourism system to maintain international competitiveness (Rogerson & Sims, 2012). Despite the national policies in South Africa to commit to responsible tourism, no official programme exists to regulate green hotel building (Rogerson & Sims, 2012). The onus of verifying environmental or greening practices for tourism has fallen on independent third-party and hotel enterprises (Rogerson & Sims, 2012). Nevertheless, Cilliers (2019) argues that the status quo of planning practices in South Africa has witnessed that Green Agendas are gaining importance in Africa, however much slower than international trends. Despite green infrastructure being recognised as a solution to many problems in the urban environment, this recognition is not as important in South Africa. Many stakeholders view green infrastructure as a visual element that is not important economically. In the rural context, budgets go towards basic services, which leaves no resources for green infrastructure (Cilliers, 2019). South Africa therefore struggles to define green infrastructure and therefore does not value or see the benefits of green planning and management (Cilliers, 2019). For South Africa to have a change in perspective, the benefits and values of green infrastructure to communities and stakeholders need to be identified.

Tourist accommodation generally requires significant water resources, spanning various levels of cleaning, food preparation and gardens (Kasim, Gursoy, Okmus & Wong, 2014). Bruns-Smith, Choy, Chong and Verma (2015) documented the best sustainability practices in the United States resort industry and investigated the relationship between environmental sustainability initiatives, guest participation and customer satisfaction. They found that the majority of hotels install low-flow showerheads to save water and costs. In the South African context, Rogerson and Sims (2012) investigated greening initiatives in the Gauteng hotel industry and found that the water management strategies used were mostly the installation of water-saving showerheads and greywater systems (Rogerson & Sims, 2012). Awareness programmes were also introduced to educate hotel staff about energy reduction, water-saving and other greening measures (Rogerson & Sims, 2012). Yet, despite the

prevalence of sustainability programmes, the traditional drivers of accommodation satisfaction (i.e., room and food quality and facilities) still overpowered the effects of green operations (Bruns-Smith et al., 2015). Kasim et al. (2014) agree with this in that they found guest behaviour to be one of the main reasons for high water consumption, which they call the “pleasure approach”. This means that guests tend to shower or bath for longer, using more water than they normally would at home. Research has shown that guest houses and hotels can benefit and profit through finding new ways of reducing their water consumption. However, some accommodations do not see this opportunity and instead only adopt green practices because of the environmental policies and laws in place that put pressure on managers to adopt water management strategies (Revilla, Dodd & Hoover, 2001).

Water demand side management requires the monitoring of water-consuming practices in hotels and then finding ways in which to reduce consumption levels (Styles, Schoenberger & Galvez-Martos, 2015). A few ideas of best practices to reduce consumption is to monitor kitchen water use, to examine the amount of water used in pools and to recycle shower and bath water (Styles et al., 2015). The willingness and ability to take on environmental awareness and initiatives are important to obtain a high degree of sustainability in the tourism sector. Studies have varied opinions on businesses practices (Erdogan & Baris, 2007). Some studies show that the shift towards reducing consumption has been rather slow because of the growth of accommodation rooms and more technical appliances being used (Riewoldt, 2006). Environmental initiatives are important, but the comfort and safety of guests are given priority (Rogerson & Sims, 2012). Therefore, not seeing environmental issues as important, ways to increase profits are preferred (Cunningham, 2005). Other studies show that hotels recognise the need to reduce consumption and to protect the environment (Chen, Legrand & Sloan, 2005; Knowles, Macmillan, Palmer, Grabowski & Hashimoto, 1999). These hotels are motivated by their dependence on attractive and safe environments as well as gaining the benefit of saving costs and sustaining a competitive advantage.

A study related to this investigation aimed to understand guest houses’ approaches towards greening (sustainable development) (Hoogendoorn et al., 2015) . They found that the majority of guest houses made use of indirect efforts to reduce their environmental impact and consumption. Direct methods refer to changes that have an immediate reduction in the amount of water consumed. Indirect methods refer to changes that would reduce the future need for water and electricity (Hoogendoorn et al., 2015). The motivation to reduce water consumption was driven by the desire to reduce its cost. There was a limited number of respondents that applied greening methods for environmental concerns. Another interesting factor is the number of capital-intensive changes a guest house can implement. For example, guest houses in Gauteng were able to install solar electricity, solar geysers and greywater flushing systems, as compared to those in KwaZulu-Natal who were only able to make small changes such as turning off unnecessary appliances or planting indigenous plants. This relates to the point on the possibility and costs of water-saving practices that can be applied. Therefore, to establish guest house water management and water-saving innovation, the researcher needs to understand the water management strategies in the study area owing to a drought crisis, rather than voluntary water management strategies.

Results

The investigation was framed by a dramatic drop in rainfall in the Western Cape region for four consecutive years (2015 – 2018), leading to very significant decreases in dam levels supplying water to the Greater Cape Town Metropolitan area, which included Stellenbosch (Figure 2). This culminated in water authorities’ conclusion that the larger Cape Town region would run out of water, leading to the so-called “Day Zero” event that was expected in the late

summer of 2018. The outcome was extraordinary water restrictions, leading to the ruling of 50 litres per household per day. The widely reported Day Zero did not however impact international tourist arrivals to the Western Cape (Figure 3) in a significant manner.

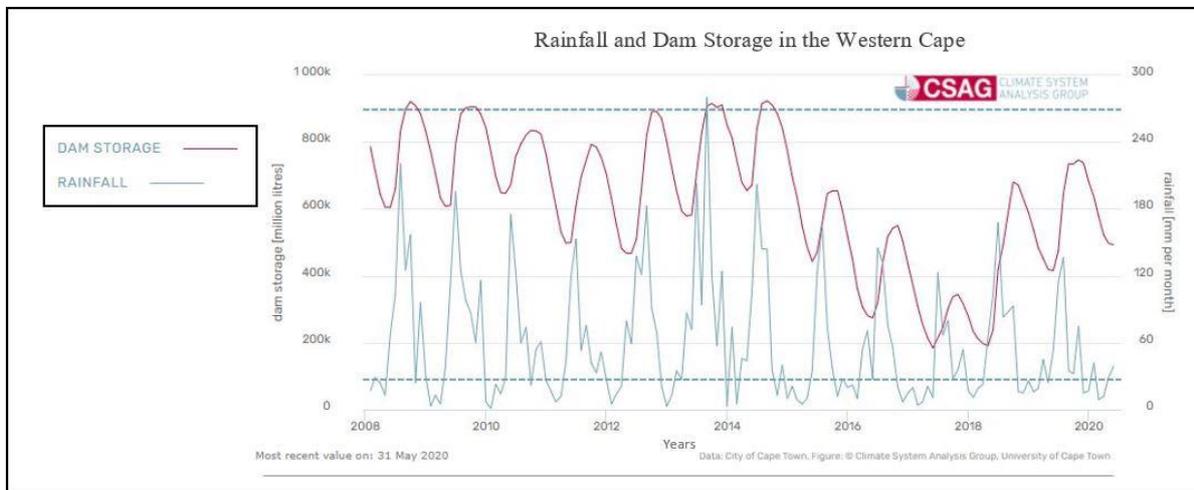


Figure 2: Rainfall and dam storage in the Western Cape. Better, if below-average, rainfall was recorded in 2019 and 2020 (CSAG 2020)

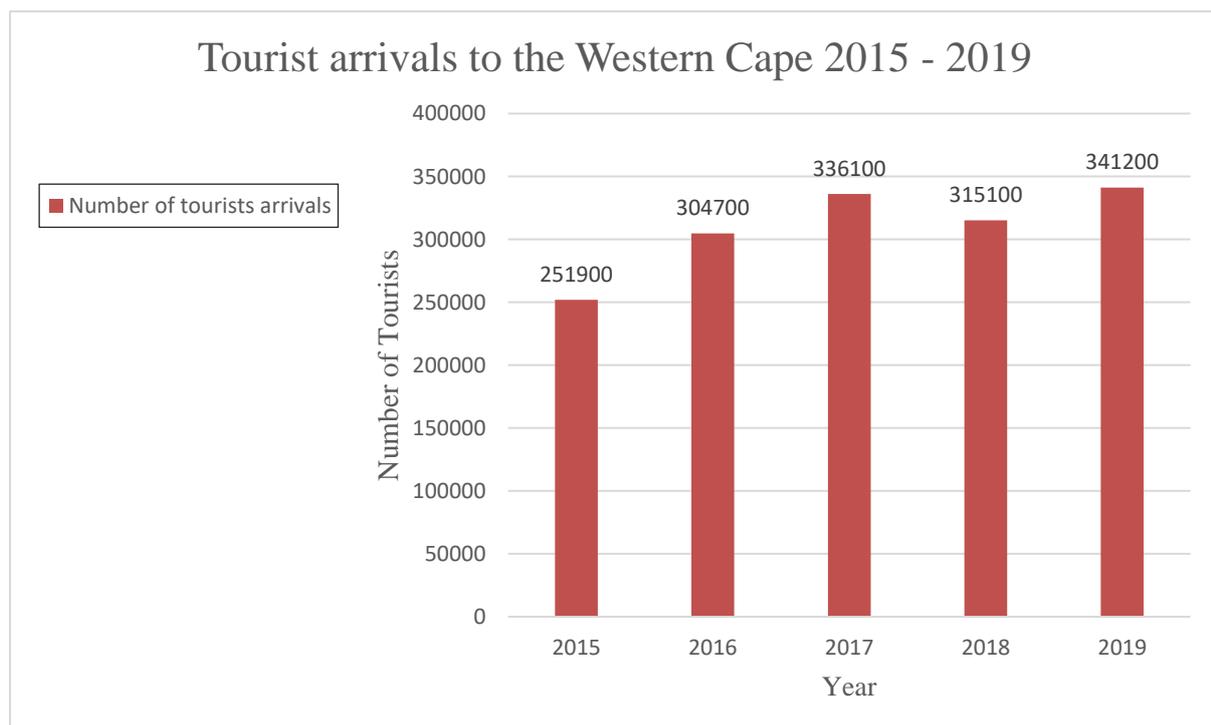


Figure 3: Tourist arrivals in the Western Cape 2015 – 2019 (SA Tourism, 2019)

For guest houses, not having enough water held the possibility of far-reaching implications. Guest house owners were cognisant of the severity of the drought and were not surprised by the water restrictions but were shocked at the notion of “Day Zero”. The common consensus was that adaptive strategies were needed for business survival, but ran the risk of their guest houses’ grading. The impact of the drought was linked to service levels, as opposed to the actual need for water to maintain their businesses. A respondent noted, for example, that their main concern was their swimming pool, stating that:

“Being a 4-star guest house, we had to have a swimming pool according to the regulations of 4-star accommodations. We actually wrote to the mayor and said they can’t expect us to stop using the pool, because it was part of regulations, and we have a lot of visitors that come from overseas that want to enjoy the summer here in Cape Town. Guests pay to use the swimming pool.”

This was common to other respondents on a range of fronts. Respondents were guided by infographics issued by the Stellenbosch Municipality (Figure 4). These guidelines had in their view, however, a bearing on private households, not hotels and guest houses *per se*. This complicated the interpretation thereof for their businesses. It also underlined the fact that water restrictions were focused on the average requirements of local residents and not tourists, a matter that was never clearly resolved.

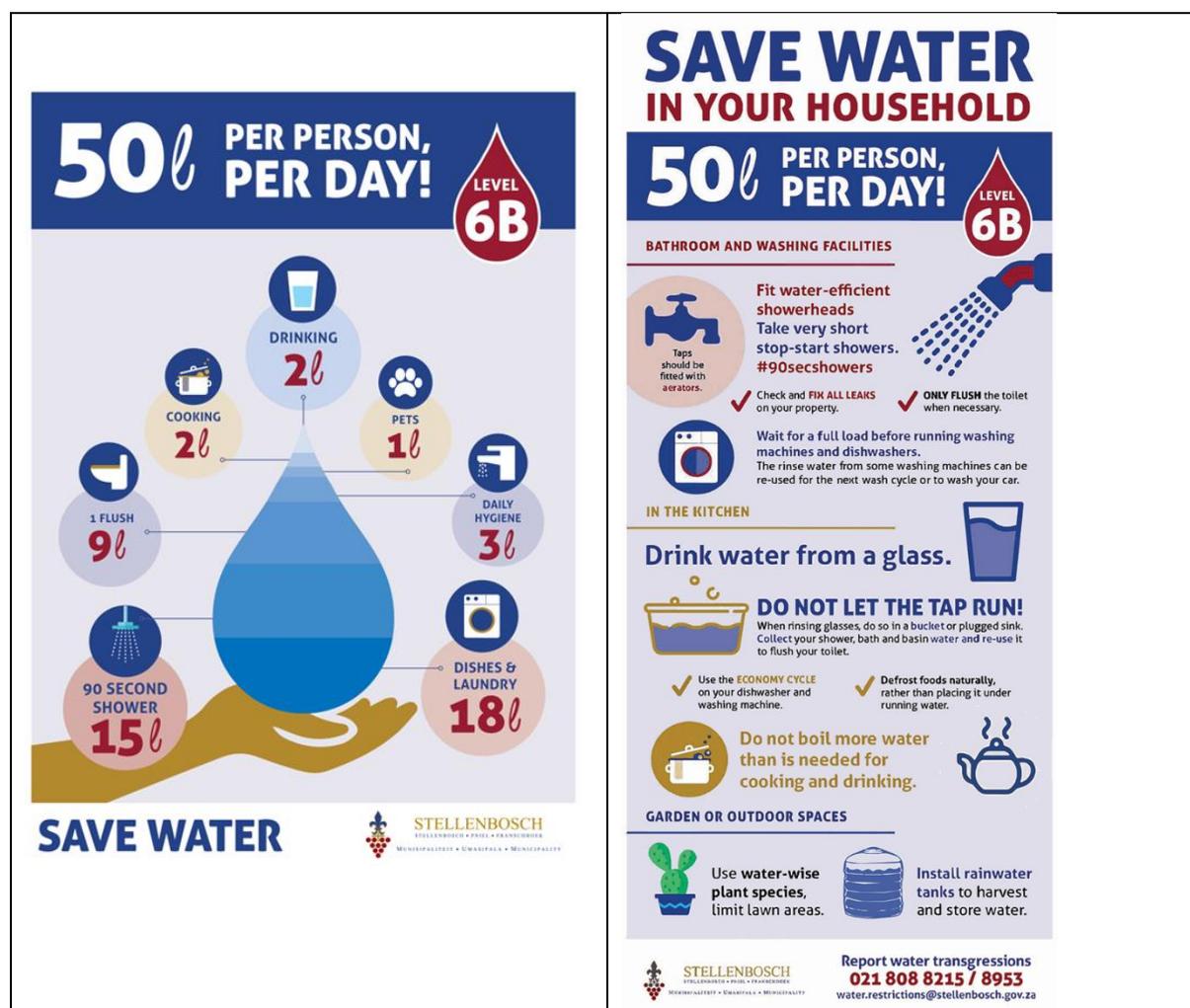


Figure 4: Left: Infographic by Stellenbosch Municipality for water use Right: Water-saving strategies suggested by the Stellenbosch Municipality (Stellenbosch Municipality, 2015)

Water supply management

Notably, some guest houses in the historic core of Stellenbosch were unconcerned with elevated water pricing or water restrictions, as they had access to a borehole system on their properties or made use of the “leiwater” (the 18th century channelled irrigation water) system in central Stellenbosch. However, many guest houses do not have access to the “leiwater” system as they are located beyond the system’s grid. Access to this source of water would have been very beneficial during the drought and could have provided a small competitive advantage



to those guest houses that did. A small minority of guest houses aimed to increase their water supply. In some cases, boreholes were sunk, which in the Stellenbosch context generally yields poor water quality only useable for applications such as gardens and swimming pools, if untreated. Overall, borehole the water quality is unsuitable for human use beyond toilet flushing and holds very expensive retrofitting implications. A few installed rainwater tanks. One guest house had a 3-meter underground storage tank, as well as two 5000 litre water collection tanks. However, given the small stand size of the guest houses in central Stellenbosch, physical space for the installation of such tanks is very limited – there is simply not enough physical space to introduce collection tanks of sufficient size to make any significant contribution to the water supply. Notably, whether collecting rainwater, using boreholes or “leiwater”, or a combination thereof, the filtering of this source of water to make it potable was deemed prohibitively expensive. In the end, all the alternative water sources were also negatively impacted by extended periods of drought. The main water supply thus, remained the regional water supply system. In that regard, for municipalities, water pressure management, so that water flows out of taps slowly is an essential first step, followed by leak prevention/repair and state-of-the-art metering. Another key mechanism is water economics: changing the pricing structure of a unit of water. So, the local municipality increased water tariffs to incentivise low water use. Guest house owners, overall, were gravely concerned about the price of water as bills could rise from R2 000 per month to almost R10 000 for the same amount of water. Thus, financial pressure was a great driver of water conservation.

Water demand management

As the drought progressed, new water demand measures were implemented. After the announcement of a potential Day Zero, most guest house owners scrambled to find ways to reduce water consumption. To keep the swimming pool filled without going against the water regulations, some used PVC pipes to allow rainwater to fill the pool, although this has limited utility as the tourist high season in the region is summer, which is the dry season. Another guest house bought water from surrounding farms to be used for the pool and other purposes. Some collected the water that dripped from the air conditioners to water plants. All participants interviewed said that they had informed their guests about the water restrictions and the drought and asked that guests be responsible with their water usage. One participant however noted that they did not implement any water-saving methods as they generally do not use much water: between 6-10 litres per guest in winter and 15-19 litres per guest in summer. They did admit to using a water-reading app, H2OnGuard, that provides real-time water-use monitoring. They used this to communicate guests’ water use to them and to notify management about leaks. Almost all (93%) of the guest houses said they had placed notices on the walls indicating how water could be saved (Table 1). The notices contained information similar to those in Figure 4. Thus, responsibility for lower water use was shifted to the guest. This is reflected in the reuse of water too. The guests were often requested to collect water from a bucket in the shower to fill toilet cisterns. Other interventions related to the re-use of water from the laundry for cleaning floors. Only one example was found where the guest house owner replaced plants in the garden with drought-resistant plants, and in fact, made it part of a marketing strategy for the guest house.

Table 1: A selection of water-saving interventions of guest houses in Stellenbosch (Source: Authors Survey, 2020)

Water-saving interventions	Percentage of guest houses who adopted this.
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Water saving notices	93
Removal of bath plugs/shower only	37
Washed linen/towels only when necessary	33
Bucket in the shower to collect water	30
Sunk a borehole	23
Recycling/Re-using water from the laundry	17
Collected rainwater	17
Low-flow showerheads installed	3

Many guest houses elected to not wash linen or towels unnecessarily. One guest house did the laundry every second day, while another did it when requested by guests. This was, for the most part, not practical as a water-saving strategy as Visser and Eastes (2020) have shown that, generally, guests at Stellenbosch usually only stay one or two nights. Consequently, such a mitigation action had little effect. Another guest house owner said that the laundry was sent away to be washed elsewhere, shifting the point of demand to another point of use – water was still being used from the same larger water supply system. The use of rainwater tanks also had some interesting outcomes. One participant felt the use of unfiltered rainwater turned their linen and towels grey. From an operational point of view, some participants observed that the washing of dishes would be done once a day using a dishwasher machine. It was also common that greywater from washing machines and rainwater was used for cleaning floor surfaces inside and outside the guest house, along with watering plants.

As part of the requests in the “Guest Notices” guests were asked to shower not bath. Some enforced this by removing the bathtub plugs. One guest house converted all baths to showers. The guests were also asked to shower for two minutes or less. The guests were requested to collect shower water in a bucket to fill the toilet cistern. This practice became quite common among Capetonians, although foreign visitors must have found this rather peculiar and inconvenient. Interestingly, only a small minority of owners installed low-flow showerheads despite the low cost. Another small minority installed water-saving tap filters in hand basins, along with dual flush toilets. One participant placed a brick in the toilet cistern (this is not recommended as the brick disintegrates and clogs the system). Other, though costly, interventions were to supply guests with bottled water for preparing hot beverages, washing hands and brushing teeth to reduce the use of tap water; some advised guests to make use of supplied hand sanitiser instead of hand soap and hand wash.

Other observations

Some owners were of the view that local government should have implemented water restrictions earlier. This was, however, an odd opinion, as restrictions were in place for more than two years at the time of investigation and yet guest house adaptations were slow and rather limited. Several responses amounted to blame-shifting instead of behavioural change by the guest houses. Overall, guest house owners initially avoided responsibility for water use mitigation by implementing operational changes. Typical of most of South Africa, they wanted increased water supply from regional water authorities rather than implement water demand side management on their side. Their views did, however, change as the drought worsened, “Day Zero” loomed and it was realised that blame-shifting was counterproductive as water demand side management was the last resort to keep their businesses running. Heightened awareness of the environment only came when the outlook for the drought worsened, then, “*the environment is an ongoing concern, and we feel its everyone’s responsibility to look after it, not only when there is immediate danger but rather to keep up conservation,*” as one participant remarked. The majority of those interviewed noted that they had continued with the water-saving interventions (in 2020), even after the drought had ended. These responses were

however more material than a real shift in some form of environmental awareness. As one participant said, they wanted to reduce their costs of water. Some did make permanent changes, noting that their borehole system was now fitted with a costly purification system to render the water potable. Others indicated that during standard repair and maintenance cycles, incremental water-saving devices would be introduced over time. A recent follow-up transect visit of the guest houses revealed a seemingly more permanent, near-universal adaptation of gardens. It is noticeable that water-wise plants are to be seen in abundance, in other cases grass covers were replaced with mulch, gravel, stones, brick paving, and even artificial grass (which will have the unintended effect of increasing run-off, reducing groundwater reserves in the long term).

Those that did not continue with water-saving interventions explained that guests expect a luxury experience. There was a varied response from guests to the drought and water restrictions. As one respondent noted: *“Guests were not impressed with the restrictions in place ... Not all guests were happy about the new measures set in place and we had numerous bad reviews for the measures we set in place.”* Supporting this view, one argued that *“guests paid to receive luxury and so they could not force their guests to save water, else they would lose business.”* Some indicated that a few guests cancelled their reservations when they heard about the drought. Another observed that *“the drought and water restrictions caused broken customer relationships.”* He referred to incidents *“when guests used a lot of water, the manager would need to communicate with the guest that a fine would be payable if the water usage continued to be high.”* Other incidences include a couple from Cape Town who did not follow the water restrictions. The owner asked them to take a shorter shower, which they refused and subsequently gave the guest house a bad review. The owner further adds: *“This was shocking because they are from Cape Town; they are supposed to know about the drought, but they were a young couple and they probably think they won’t make a difference if they shower long, they do not realise that all of us in the Western Cape had the duty to save water.”* Nevertheless, most said that their guests were understanding and supportive during the drought. One of the guest house managed to remain one of the busiest guest houses in Stellenbosch. Apparently, international guests were more understanding because their countries are moving towards a “green revolution”.

Conclusion

The measures implemented by the guest houses can be divided into direct and indirect methods. The majority of the measures were direct methods such as boreholes, re-using water from laundry machines, collecting rainwater and shower water, installing low-flow showerheads, washing dishes and laundry only when necessary and showering instead of bathing. These interventions are ways in which to reduce the amount of water used. Indirect methods include the use of hand sanitiser instead of using soap and water, as well as the planting of water-saving plants that do not need much water. These immediate interventions need to be read against a broader canvas on ongoing challenges.

Drought is a naturally occurring phenomenon that varies in impact and magnitude. However, there is consensus that droughts will become more frequent in the study area, if not necessarily more severe. If not managed correctly, a drought can significantly impact a variety of sectors of society – not least the tourist accommodation sector. The Western Cape drought meant that the lack of availability and access to water was a threat to the tourism system during this period. Municipalities, businesses, and individuals had to implement strict water-saving measures to avert “Day Zero”. Stellenbosch, being a popular tourist centre, has many guest houses, but water demand side management was, for the most part, a responsibility shifted to the guest house guest, rather than the guest house owners deploying technologies to “automatically” reduce water demand. There was a reluctance (which might change in the

future) for capital investment in reduced water use, with the “Day Zero” crisis for the most part seen as temporary, when in fact, it will become the new norm for the Western Cape. Unless the water supply of this region increases with desalination, which will not be without substantial monetary and energy cost, it is incumbent upon the guest house sector to re-invent its relationship with water use. Real change using available technologies is required. Additionally, South Africa as a whole needs to engage with greater policy and theoretical debates around use and access to water.

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