

Environmental Impact of Hotels: Water and Waste

by Joshua Smith

The development of hotels within a tourism destination can positively impact the quality of life in both direct benefits such as job creation and additional leisure space for residents as well as indirect benefits such as increasing revenue at local establishments.ⁱ However, this same action can also negatively impact the environment unless strategies are employed to ensure sustainability. Hotels create 1.9 billion pounds of waste and use 219 billion gallons of water each year,ⁱⁱ usage that can ultimately stop or dramatically change a destination which will be explored. Thankfully, “Water conservation and waste reduction management have widely been utilized as important green management strategies in the global hotel industry”ⁱⁱⁱ according to Han, H., Lee, J., Trang, H., and Kim, W., (2018).

CAPE TOWN’S WATER CRISIS

In early 2018, the South African government issued a statement regarding water conservation in the Western Cape province due to low reservoir levels and months before the rainy season was to begin. On January 1st, the city of Cape Town announced an official limit on water usage, capping each resident to 50 liters per day.^{iv} While intended for residents, tourists were also impacted in various ways by their use of hotels while in the destination.

Each Cape Town hotel created individual water conservation guidelines and programs as there was no formalized mandate from the government for this tourism sector. For instance, according to Antakyali, D., Krampe, J., Steinmetz, H. (2008), laundry services have been found to account for 30% to 47% of a hotel’s total water use^v which prompted many Cape Town hotels to severely limit the washing of linens to once per stay. Additionally, swimming pools have some of the highest water consumption levels,^{vi} thus prompting many hotels to switch to sea-water pools or add a new technology called Waterguard, essentially a liquid blanket to reduce evaporation^{vii}.

A study by Gossling, S. et al. (2012), showed there is actually a tendency for higher-standard accommodations to consume significantly higher water volumes.^{viii} Luxury boutique property Kensington Place asked guests to limit showers to 90 seconds, use hand sanitizer instead of washing their hands, brush their teeth using a glass of water and refrain from flushing the toilet after urinating.^{ix} Most hotels also installed aerators to faucets and promoted other water conservation techniques, while one hotel, Vineyard Hotel and Spa, initiated an embarrassing tactic for those who wish to take a bath, in which they needed to bring a rubber ducky to the front desk in exchange for a bathtub plug.^x While not a hard limit for tourist, these tactics greatly helped.

Because of such large media attention on the Cape Town's water situation, a result of the government issuing a 'D-Day' of when the water would be turned off, this greatly impacted tourism to not only Cape Town, but the entire country. Unfortunately, as Mihalic (2000) described, "A negative exaggeration in the environmental image will result in lost opportunities for a tourist destination in terms of lower prices and/or a lower number of visitors,"^{xi} regardless of the reality.

Wesgro, Cape Town's tourism department, found that hotel bookings in January and February of 2018 were between 10% and 15% down when compared to the same period in 2017.^{xii} This supports a study conducted by Han et al. (2016) whereby "An individual frequently evades a situation where the level of concern regarding a specific behavior is high. Eco-conscious tourists often decrease possible uncertainty by not engaging in the specific environmentally unfriendly consumption behaviors when they are concerned about the harmful consequences resulted from such behaviors."^{xiii}

While perception significantly impacts decisions, even if the reality does not align, the decline of tourism to South Africa negatively impacted the environment because of the decreased economic impact of such international spend. Cape Town has over 1.2 million visitors annually of

whom spend approximately R40 billion (~\$2.8 billion USD) and support 300,000 jobs according to Sisa Ntshona, Chief Executive Office of South African Tourism. “This spending helps significantly to fund the ongoing water saving projects being implemented; decreasing this input will create further challenges and financial strain.”^{xiv}

The South African government, along with other foreign investment, launched three desalination plants to convert seawater into potable water which will produce an additional eight million liters of water per day,^{xv} of which is partially funded by the taxes brought in by tourism. Additionally, some hotels have voluntarily gone off the public water grid, thereby creating a positive environmental impact from the tourism industry.

Cape Town seems to have avoided ‘D-Day’ with two significant landmarks announced in September 2018 with dams 74% full and twice the amount from the year prior^{xvi}, thanks to a rainy season in Western Cape, including a storm that resulted in Cape Town ironically flooding.^{xvii} This natural occurrence, combined with efforts of hotels, including Tsogo Sun Hotels, one of the largest domestic brands in South Africa who reported a reduction of nearly three hundred thousands liters per day at its Cape Town properties,^{xviii} has led to a significant positive forecast for the city.

Cape Town is not the only tourism destination that needs to focus on water conservation as “Sao Paulo was down to less than 20 days of water supply,” Betsy Otto, director of the global water program at the World Resources Institute said referencing Brazil’s 2015 challenge.^{xix} However, the tourism sector, specifically hotels in Cape Town and Western Cape have proven that hotels, can create positive environmental benefit to the destination.

BORACAY, PHILIPPINES’ WASTE MANAGEMENT CHALLENGE

On April 26, 2018, Boracay, a four square-mile island of the Philippines closed its doors to tourists, in an attempt to make drastic changes to the island which was deemed a “cesspool” by

the Philippines President Rodrigo Duterte.^{xx} Over the last twenty years, Boracay has increasingly been competing with other mass market beach destinations in Asia such as Bali, Indonesia and Phuket, Thailand, however without little oversight and many hotels violating zoning and environment regulations. With a population of forty thousand residents on Boracay and nearly half of these residents working at the 500+ hotels, tourism produces 56 billion pesos (~\$1.07 billion USD) annually, a significant economic impact.^{xxi}

Over-tourism has also challenged the destination with more than 2 million visitors in 2017.^{xxii} According to Gabarda-Mallorqui, A., Garcia, X., and Ribas, A. (2017), “Coastal resorts, which fit into what has been described as a static “Fordist-like” production framework, tend to form dense urban blocks dotted with high-rise hotels. This mass sun-and-sand model is often accused of being one of the main contributors to the environmental stresses experienced by coastal regions.”^{xxiii}

Specifically, in Boracay, 195 businesses and four thousand residential customers were found to not be connected to the island’s sewer lines, pumping raw sewage into the surrounding turquoise waters.^{xxiv} However, conflicting reports from resort owners stated in a New York Times article that “the government promised a system that would treat waste and runoff, and pump it far out to sea. What they got instead, they say, was an inadequate treatment system, with many properties illegally tapped into it, that dumps wastewater just off the island’s eastern shore, at Bulabog Beach, an area famed for its wind and kite surfing.”^{xxv}

Unfortunately, governmental corruption might have played a factor in the demise of the destination as Maria Ela Atienza, Professor of Political Science at the University of the Philippines Diliman said, “There were cases of corruption at resorts who were able to get building permits even though they were violating standards, so what is really needed are accountability mechanisms

to stop this from happening” in a Time Magazine article in May 2017.^{xxvi} While a Senate probe into the legality of President Duterte’s closing Boracay was initiated, this did not help the residents who were only given 3-week notice of a full closure of the island to tourists.^{xxvii}

This current problem may have also been a result of the government’s actions as was identified by Alday Alampay, R. in 2005 stating “The Philippines seems to be moving away from a direct ownership model toward a facilitating or mentoring relationship with local communities. Both the Philippines and Thailand have made moves to strengthen their tourist products at the local level by devolving many tourism development functions to the local communities.”^{xxviii} While timing and proper planning may have been poor, the World Economic Forum’s Travel and Tourism Competitive Report in 2017 rated the Philippines as 19th worst country out of 136 countries for environmental sustainability,^{xxix} so drastic actions needed to occur.

The island of Boracay shut down as reported with major clean-up of its beaches and focus on general infrastructure, officially re-opening on October 26, 2018. The Department of Environment and National Resources (DENR) is now looking for ways to persuade over fifteen thousand workers to move off Boracay after determining the island can only accommodate 54,945 people a day.^{xxx} While Bao (1987) defined tourism environment carry capacity (TECC) as “the maximum number of tourists that a scenic area can accommodate without compromising the tourist satisfaction and the environmental quality of the area,”^{xxxi} the aspect of tourist satisfaction has yet to be proven with only a few months of the island being open.

The Philippine government will now issue access cards for Boracay tourists with a maximum of 19,215 tourists on the island at any given time, a staggering number when there were only 18,255 tourists on average each day in the past.^{xxxii} For the government to ask residents to move in order to allow for more tourism in peak travel months is a complete infringement on their

quality of life and well past the stage of antagonism on Doxey's Irridex of Resident Reactions,^{xxxiii} however there seems to be little media attention on this topic, possibly a result of the government providing necessary compensation for such a tactic. As McKercher (1993), explained "This sense of resentment can be exacerbated when tourism interests alienate once publicly available resources for exclusive use by the tourism industry,"^{xxxiv} in this case regarding land and their home life.

The Department of Tourism has allowed 316 accommodations establishments that have complied with the requirements and expects those that are still closed to be fully operational in April 2019.^{xxxv} [REDACTED] for the Philippine Department of Tourism explains, "We're excited to finally be open. It's going to happen in phases to make sure we can meet demand and ensure it happens right."^{xxxvi}

New regulations are also in place such as beach parties being banned as well as smoking and drinking. The shoreline is free of vendors, masseuses, fire dancers and watersports, while the scores of moored boats on the beach, a fixture in former years, must anchor elsewhere.^{xxxvii} Due to the media coverage on the closure of Boracay, it will be interesting to see how tourism is impacted after the destination has made significant efforts to clean up the environment.

While the focus is on environmental sustainability, "Researchers agree that proper waste reduction management in hotel leads to not only environmental protection but also economic benefits" (Han et al., 2018). This is likely a reason why the Philippine government is now turning to Manila Bay, which some say is the dirtiest body of water in the country.^{xxxviii} While Boracay has not received any notable label yet, and as Mihalic (2000) shared, "While there are many (too many) environmental practice models and logos in the tourism and travel industry there is a need for a more systematic approach in order to enable better communication of environmental

performance to visitors and other audiences,” any effort toward a better environment should be recognized.

While these may be only the first few examples of governments taking drastic measures to ensure sustainability of their growing economy of tourism, it’s clear something had to be done. It is unfortunate there are immediate effects that are imposing or even detrimental to local residents and tourists, whether it be closing a destination or severely limiting natural resources, everyone, including those just visiting need to understand the environmental impact they have on our planet.

ⁱ Kim, K., Uysal, M., Sirgy, M. (2013). How does tourism in a community impact the quality of life of community residents. *Tourism Management*, 36; pp. 527-540.

ⁱⁱ McCormick, L. (June 2012). The Environmental Impact of Hotels: The Future is Green. *Verdemode*. Retrieved from <https://www.verdemode.com/2012/06/environmental-impact-hotels-future-green-infographic>

ⁱⁱⁱ Han, H., Lee, J., Trang, H. & Kim, W. (2018). Water conservation and waste reduction management for increasing guest loyalty and green hotel practices. *International Journal of Hospitality Management*, 75: pp. 58-66.

^{iv} Flynn, J. (2018). How Cape Town Defeated Day Zero – for Now. *Global Health Now*. Retrieved from <https://pulitzercenter.org/reporting/how-cape-town-defeated-day-zero-now>

^v Antakyali, D., Krampe, J. & Steinmetz, H. (2008). Practical application of wastewater reuse in tourist resorts. *Water Science Technology*, 57 (12), pp. 2051-2057.

^{vi} Gossling, S. (2015). New performance indicators for water management in tourism. *Tourism Management*, 46, pp. 233-244.

^{vii} Staff. (20 March 2018). A liquid blanket; by Waterguard. *Cape Business News*. Retrieved from <https://www.cbn.co.za/news/videos/water-g>

^{viii} Gossling, S., Peeters, P., Hall, C., Ceron, J., Dubois, G., Lehmann, L., and Scott, D. (2012). Tourism and water use: Supply, demand and security. An international review. *Tourism Management*, 33, pp. 1-15.

^{ix} Coffey, H. (2 Feb. 2018). Cape Town Drought: From not flushing the toilet to not washing your hands, here’s what you’ll experience at a luxury hotel. *Independent*. Retrieved from <https://www.independent.co.uk/travel/news-and-advice/cape-town-drought-water-shortage-luxury-five-star-hotels-day-zero-laundry-showers-toilet-flush-pool-a8191966.html>

^x Sachs, A. (26 Feb. 2018). What do tourists need to know about the Cape Town drought? *The Washington Post*. Retrieved from https://www.washingtonpost.com/lifestyle/travel/what-do-tourists-need-to-know-about-the-cape-town-drought/2018/02/25/46c178dc-1670-11e8-8b08-027a6ccb38eb_story.html?utm_term=.550f3fd2d222

^{xi} Mihalic, T. (2000). Environmental management of a tourist destination. A factor of tourism competitiveness. *Tourism Management*, 21, pp. 65-78.

^{xii} Rangongo, T. (9 July 2018). The drought seemed to hit Cape Town tourism hard – but a new report says hotels did okay. *Business Insider South Africa*. Retrieved from <https://www.businessinsider.co.za/the-impact-of-the-cape-town-drought-on-tourism-was-rather-tiny-2018-7>

^{xiii} Han, H., Lee, M., Hwang, J. (2016). Cruise travelers’ environmentally responsible decision-making: an integrative framework of goal-directed behavior and norm activation process. *International Journal of Hospitality Management*, 53, pp. 94-105.

^{xiv} South African Tourism. (Feb. 2018). South Africa Remains Open to Travellers Despite Local Water Shortage. *Press Release from South African Tourism*. Retrieved from <https://cdn.waterwesterncape.com/attachments/cjfmwvz300o0m9p0qmqx82ma-statement.pdf>

^{xv} Sicetsha, A. (7 Aug 2018). Newly launched Cape Town desalination plants will pump 8m litres per day. *The South African*. Retrieved from <https://www.thesouthafrican.com/cape-town-desalination-plants>

^{xvi} Chambers, D. (25 Sept. 2018). Cape Town’s glass half full as dams reach 74%. *Times Live*. Retrieved from <https://www.timeslive.co.za/news/south-africa/2018-09-25-cape-towns-glass-half-full-as-dams-reach-74>

^{xvii} Pace, A. (1 July 2018). Rain Causes Flooding in Cape Town. *Cape Town ETC*. Retrieved from <https://www.capetownetc.com/news/rain-causes-flooding-in-cape-town>

^{xviii} Nkanjeni, U., (25 Oct 2017). Cape Water Crisis: Top hotels refute ‘fill up the tub’ allegations. *Traveler24*. Retrieved from <https://www.traveler24.com/Explore/Green/cape-water-crisis-top-hotels-refute-fill-up-the-tub-allegations-20171025>

^{xix} Welch, C. (5 March 2018). Why Cape Town is Running Out of Water, and Who’s Next. *National Geographic*. Retrieved from <https://news.nationalgeographic.com/2018/02/cape-town-running-out-of-water-drought-taps-shutoff-other-cities>

^{xx} Smith, N. (5 April 2018). How Boracay went from paradise to cesspool – and what lessons can be learned. *The Telegraph*. Retrieved from <https://www.telegraph.co.uk/news/2018/04/05/boracay-went-paradise-cesspool-lessons-can-learned>

^{xxi} France-Press, A. (4 April 2018). ‘Cesspool’: Philippines president closes billion-dollar holiday island over raw sewage. *The Guardian*. Retrieved from <https://www.theguardian.com/world/2018/apr/05/philippines-boracay-holiday-island-sewage-closed-duterte>

^{xxii} Aklan News. (3 Jan 2018). Boracay reaches 2-M tourist arrivals in 2017. *Boracay Informer*. Retrieved from <http://www.boracayinformer.com/boracay-aklan-news/boracay-reaches-2-m-tourist-arrivals-2017>

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- ^{xxxiii} Gabarda-Mallorqui, A., Garcia, X., and Ribas, A. (2017). Mass tourism and water efficiency in the hotel industry: A case study. *International Journal of Hospitality Management*, 61, pp. 92-93.
- ^{xxxiv} Admin. (6 April 2018). Philippines to close Boracay resort to tourists for six months. *Island Times*. Retrieved from <http://islandtimes.us/philippines-to-close-boracay-resort-to-tourists-for-six-months>
- ^{xxxv} Villamor, F. (4 April 2018). Idyllic Philippine Resort Island of Boracay Is Closed to Tourists. *The New York Times*. Retrieved from <https://www.nytimes.com/2018/04/04/world/asia/boracay-philippines-tourists-closed.html>
- ^{xxxvi} Haynes, S. (16 May 2018). Boracay Islanders Feel the Pinch After the Philippines Shuts Down a Top Tourist Destination. *Time Magazine*. Retrieved from <http://time.com/5262455/boracay-island-philippines-tourists-closure-duterte>
- ^{xxxvii} Staff. (28 April 2018). De Lima joins call for Senate probe into Boracay closure. *Rappler*. Retrieved from <https://www.rappler.com/nation/201284-de-lima-joins-call-senate-probe-boracay-closure>
- ^{xxxviii} Alday Alampay, R. (Jan 2005). The Challenge of Sustainable Tourism Development in the Philippines, pp. 1-21. *Sustainable Tourism. Challenges for the Philippines*. Philippine-APEC Study Center Network and the Philippine Institute for Development Studies.
- ^{xxxix} Crotti R. (Ed) (2017). The Travel & Tourism Competitiveness Report 2017. *World Economic Forum*. Retrieved from http://www3.weforum.org/docs/WEF_TTCR_2017_web_0401.pdf
- ^{xxx} Rivas, R. (16 Oct 2018). They outnumber tourists! Over 15,000 workers to be booted out of Boracay. *Rappler*. Retrieved from <https://www.rappler.com/business/211810-boracay-workers-tourists-carrying-capacity>
- ^{xxxi} Bao, J. (1987). A study on carrying capacity of tourism environment in the summer palace. *China Environmental Science*, 7, pp. 32-36 (in Chinese).
- ^{xxxii} Martin, M. (19 Sept. 2018) Future visitors to Boracay must pre-apply for official access cards. *Philippines Lifestyle News*. Retrieved from <http://philippineslifestyle.com/boracay-visitors-official-access-cards>
- ^{xxxiii} Doxey, G. (1975). A Causation Theory of Visitor-Resident Irritants: Methodology and Research Inferences. The Impact of Tourism. In the Sixth Annual Conference Proceedings, pp.195-198. San Diego: The Travel Research Association.
- ^{xxxiv} MrKercher, B. (1993). Some Fundamental Truths About Tourism: Understanding Tourism's Social and Environmental Impacts. *Journal of Sustainable Tourism*, 1:1, pp. 6-16.
- ^{xxxv} Staff. (11 Feb 2019). Hotels, tour hubs open in Boracay. *Manila Times*. Retrieved from <https://www.manilatimes.net/hotels-tour-hubs-open-in-boracay/510013>
- ^{xxxvi} [REDACTED] (27 Jan. 2019). Personal Interview.
- ^{xxxvii} Morales, N. (26 Oct. 2018). 'No more cesspool': Philippines welcomes tourists to Boracay after makeover. *Reuters*. Retrieved from <https://www.reuters.com/article/us-philippines-environment-boracay/no-more-cesspool-philippines-welcomes-tourists-to-boracay-after-makeover-idUSKCN1N00RG>
- ^{xxxviii} Dancel, R. (20 Dec 2018). After Boracay, Philippines targets Manila Bay's 'magnified cesspool' for next cleanup. *The Straits Times*. Retrieved from <https://www.straitstimes.com/asia/se-asia/after-boracay-philippines-targets-manila-bays-magnified-cesspool-for-next-clean-up>