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Using a human rights approach to improve hotels' water use and sustainability

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ABSTRACT

This article explores the intersect between the human right to water, the United Nations Guiding Principles on Business and Human Rights, and the reality of hotels water use. Our qualitative study was based on semi-structured interviews, participant observation, and focus groups with hoteliers, government agencies and community stakeholders in Yogyakarta, Indonesia. It examines the challenges faced by hoteliers to respect the human right to water and why hotels do not voluntarily adopt the Guiding Principles. The impeding factors identified include a lack of awareness, a lack of substantive voluntary schemes, the water tariff, the absence of data management; return on investment, profit and public image prioritized over environmental considerations; and inadequate regulations and their enforcement. Our study also indicates the potential of combining a human right to water impact assessment within the existing EIA to reform hotels water management and improve their water stewardship. In doing so, hotel water management would move beyond the domain of the hotel to consider their impact on the local community. This, the first study to take a human rights-based approach to the study of hotel's water use, also identifies the further research required on this topic: legal enforcement and community participation.

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Introduction

Fresh water, a vital component of natural environments, is crucial for human societies and the tourism industry alike. However, tourism's spatial and temporal concentration of water usage can also result in severe water depletion and conflict between tourist facilities and local inhabitants (Hadjikakou et al., 2012). Studies show that the uncontrolled development of tourism can affect the quantity and quality of water in a tourist destination, such as water pollution (Stonich, 1998; Wright, 2015), depleting water availability (LaVanchy et al., 2017), to conflicts in access to water (Strauß, 2011). In addition, the growth of global tourism and its various activities, which demands ever increasing amounts of water, coincides with changes in the global climate system which are leading to a decline in water resources in many tourist destinations (ITP, 2018a).

While there has been a plethora of studies to seek explanations for and potential solutions to water concerns within the tourism industry (Antonova et al., 2021; Cole et al., 2020), analyses from a human rights to water perspective remains under-researched. Whereas recently Loehr

et al. (2021) incorporate the human rights to water into the tourism discourse in relation to achieving inclusive access to water, sanitation and hygiene, Cole's (2014) work in this journal remains the only scholarly work that explicitly accentuates the human rights to water. Cole suggested the tourism industry should take a human rights approach to unravel water issues related to the industry in Bali. Further, Cole urged the tourism industry to engage more proactively in preventing human rights abuses by conducting human rights impact assessments (Cole, 2014).

In this article, we take up the suggestion and explore the human rights to water (HRW) and the UN Guiding Principles on Business and Human Rights (GPs) as they relate specifically to the hotel industry in Yogyakarta, Indonesia as a case study. This will not only enhance the knowledge of tourism and human rights (to water), but also to bridge the governance gap between the tourism sector and water concerns in relation to a particular sector of the tourism industry, i.e. hotels, given their reliance on considerable water availability to provide their services (Kasim et al., 2014; Gössling, 2015). At the same time, hotels are constantly challenged to reform their water management systems and increasingly pressed to adopt a human rights approach in addressing water concerns (Cole, 2014; ITP, 2018a; Noble, 2012).

Established in 2011, the GPs are a non-binding international legal instrument (soft law) that comes from a long process initiated by the United Nations (UN) in 2005. The GPs' aim is to provide the first global standard for preventing and addressing risks of adverse impacts on human rights associated with business activities, as well as the internationally accepted framework for improving standards and practices in the field of business and human rights (Office of the High Commissioner of Human Rights, n.d.). To date, the GPs are considered a driver in progressing the business and human rights agenda, primarily by bringing together the state's duties and business responsibilities in the same guidelines (Deva, 2020; Pitts, 2016; Santoro, 2015).

Among the many tourism organizations and businesses, there are a few that have engaged with the GPs, such as: the Roundtable Human Rights in Tourism (RHRT), the International Tourism Partnership (ITP) and KUONI (ITP, 2014; Baumgartner et al., 2013; KUONI, 2012; KUONI, 2014). Focusing on the hotel industry, ITP's *Know How Guide: Human Rights & the Hotel Industry* describes the basic application of the GPs for hotels, noting several key human rights issues, including the HRW (ITP, 2014). The umbrella organizations are clear that hotels are not immune to human rights concerns in their practices and need to take reasonable measures to ensure they are not complicit in human rights abuses. Furthermore, as can be found in the Business and Human Rights Resource Centre website, several hotel chains include a commitment to Human Rights in their policy statements (<https://www.business-humanrights.org/en/companies/>). However, the majority are narrow in scope (pertaining to children, human trafficking and employees). This is the first study to explore how the GPs operate in a hotel business context and is focused on the HRW.

Our paper has a two-fold rationale, one empirical and the other conceptual. The empirical rational concerns the disruption to local communities water supplies linked to substantial hotel development in Yogyakarta, Indonesia (Yusuf & Purwandani, 2020). While conceptually, we reflect on a broader understanding of the prospects for hotels to respect the HRW. Hence, we ask, to what extent do hotels in Yogyakarta adopt and implement policies and legal requirements related to the right to water and the GPs? In doing so, we gain an insight into hotels' perspectives on compliance and the efforts they are making to respect the HRW. This study identifies that it is overly simplistic to expect hotels to respect the HRW voluntarily. Such identification implicates the polycentricity of the business and human rights approach that requires strong checks and balances between the adequacy of state law, corporate codes of conduct, as well as civil society capacity to meaningfully participate in relation to water governance.

The article is organized as follows: The next section briefly reviews existing literature on hotels and water and outlines key elements of hotels and the human right to water. Section three discusses the research setting and methodology. We then present the empirical findings and

discussion. The concluding section presents a critical reflection on the challenges and remedies for hotels to respect the HRW as well as the opportunities for further studies.

Literature review

Hotels and water

The overuse of water by the hotel industry is not something new in the literature. Water depletion, water pollution, and competition for water (water equity) are some of the negative impacts that tourism brings (Stonich, 1998; Cole, 2012; Noble, 2012; Becken, 2014). This is primarily caused by shortcomings of infrastructure and water governance such as planning, coordination, cooperation and inadequate law provision and enforcement (Gössling, 2001; Strauß, 2011; Cole, 2012; Noble, 2012; Bengé & Neef, 2018; Cole et al., 2020). It is reasonable therefore to assert that hotels' careless use of water infringes the right to water for local communities.

Numerous studies have shown that, amongst tourism amenities, hotels are the main consumers of water in tourist destinations (Gössling, 2001; Hamele & Eckardt, 2006; Li, 2018; Mohan et al., 2021). People use more water when they stay at hotels than they do at home, and many facilities provided by hotels are water-dependent e.g. swimming pools, spas, water features etc. (Charalambous et al., 2012; Gössling, 2015; Kasim et al., 2014; Styles et al., 2015). Set within the problematics of space (arid areas), time (seasonal water shortfalls) and climate change, several studies suggest that hotel water use is one of the contributing factors increasing the risk of water shortages and the disparity between tourism and domestic water use (Gössling et al., 2012; Becken, 2014; Styles et al., 2015; Cole, 2017; ITP, 2018a). Even in the low season tourist's water demand can be excessive, because as Deyà Tortella and Tirado (2011) found high end tourists, that visit Mallorca were especially high water users.

Added to fears of shortages for the industry to function, and cost savings where the water tariff has increased, a body of literature has explored the ways hotels can curtail their water consumption. This literature provides, strategies and instruments for sustainable water management including: adopting business environmental and social responsibility policies (Kasim, 2006); applying water permit-trading schemes (Cashman & Moore, 2012); applying strict performance indicators (Gössling, 2015); raising water tariffs (Razumova et al., 2016); estimating environmental carrying capacity and applying sustainable water management policies (Tekken & Kropp, 2015); applying sustainable water management through innovation (Kasim et al., 2014); promoting the importance and benefit of water resource management certification (Chan, 2009; Gabarda-Mallorquí et al., 2017); and, the need for increased awareness raising (Charara et al., 2011).

Meanwhile, in China, many hotels have applied quota management to their water use resulting in a significant contribution to the efficient use of water, and that the total quantity of water consumption is effectively controlled (Cole et al., 2020). However, water management and conservation programs concerning tourist accommodation are still less well understood compared with energy conservation and management (Warren & Becken, 2017). Furthermore, the application of water management innovation, reduction and efficiency are limited to large hotels, while smaller hotels are often left behind due to lack of information, awareness, and/or a lack of capital from marginal business returns (Cole & Browne, 2015; Kasim et al., 2017; Cole et al., 2020).

Hotels and water impact assessment

Minimal attention has been paid to the impact of hotels water use both cumulatively and at the community level despite a growing literature on environmental impacts of tourism (Hewedi & ElMasry 2019; Cavallin Toscani et al., 2022; Collins & Cooper, 2017). Filimonau et al. (2021) suggests this gap exists due to poor data access and limited data quality. As a result, hotels environmental impact assessments are overly generic. Instead of conducting holistic, multi-impact

evaluations, generic Environmental Impact Assessments concentrate on a single or a small number of environmental impacts and exclude broader water use impacts. Santana et al. (2019) study on life cycle assessment of water reuse in the city of Lloret de Mar is the latest attempt in understanding different impacts of hotels water management scenarios. The result show that water reuse is preferable compared to desalination due to decreased potable water usage, less flow through the sewer system, reduced operational costs of tertiary treatment, and lower carbon footprint.

Meanwhile, in their latest guidelines in promoting water stewardship amongst hotels, the International Tourism Partnership (ITP) suggest that hotels assess their water use impact and dependencies and share that information with local stakeholders (ITP, 2018b). In addition, ITP advises hotels on setting targets and creating an action plan, managing water sustainably, working with water suppliers, building resilience to extreme events and water shortages, and collaborating on sustainable water management. Supplemented with best practice examples, as well as useful reference tools, guidance and initiatives for each step, the ITP guide is an important development in the realm of hotel water responsibility.

Hotels and the human rights to water

In this section, using a business and human rights (BHR) approach enshrined in the GPs, we review key components for hotels to respect the HRW.

The GPs consist of three main pillars, known as the Protect, Respect and Remedy framework, are State duty to protect (principles 1–10), business responsibility to respect (principles 11–24), and communities' access to remedy (principles 25–31). The first pillar asserts that the duty to protect and fulfil human rights falls on the shoulders of the State which includes protection against third parties, such as businesses. This duty requires the State to set out its expectations clearly for all businesses operating within its jurisdiction to respect human rights in their operations. The second pillar of the GPs is about corporate responsibility to respect human rights. It strongly emphasizes that corporations need to avoid infringing on the human rights of others and requires corporations to conduct human rights due diligence processes. In the third pillar, the GPs provide guidelines for remedies, including formal judicial, administrative and non-judicial processes, alongside corporate grievance mechanisms (United Nations, 2011). As illustrated in [Figure 1](#) the key parties have differentiated but complementary responsibilities to uphold human rights.

We follow the UN definition to the human right to water as having access to sufficient, safe, accessible and affordable water (United Nations General Assembly, 2010). Under the GPs pillar two, businesses have a responsibility to respect the HRW irrespective of size, sector, operational context, ownership and structure or geographical area (principles 11 and 14). Furthermore, in the GPs (principles 15–21), due diligence is especially required wherever water is scarce or of poor quality, or where business activity affects the water supply of vulnerable or marginalized communities. This means businesses must consider their impact on other water users, including their right to water (IHRB, 2011).

Several soft law instruments related to industry water use already exist such as International Water Stewardship Standard and CEO Water Mandate (Tignino, 2017). These instruments are based on the principles of stewardship, i.e., water is perceived as part of the ecosystem, to be used judiciously in collaboration with all stakeholders. There are similarities and differences between stewardship and the BHRs approach (as summarized in [Supplementary file 1](#)). A critical difference is that stewardship is predicated on businesses understanding their own water usage and the potential to reduce their own risk of water-related hazards. The GPs, on the other hand, focus on proactively addressing risks to human rights rather than risks to the company, even

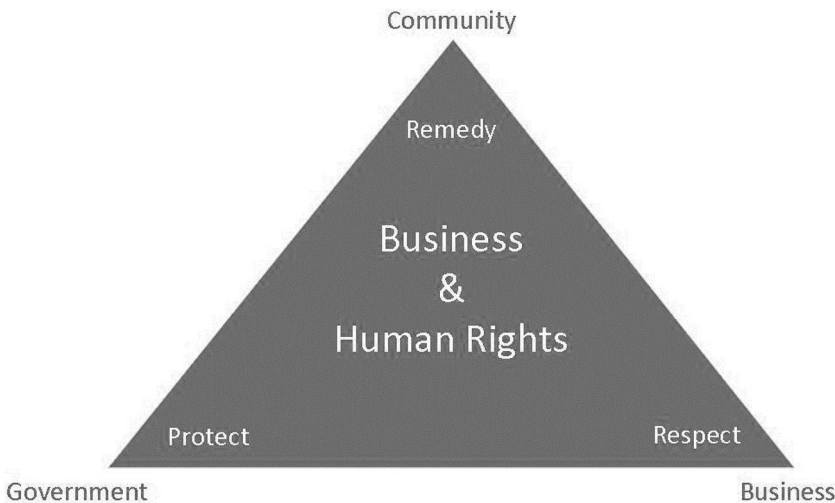


Figure 1. The United Nations Protect, Respect, Remedy Framework.

though the latter is increasingly influenced by the former. The potentially affected individual, the rights-holder, is central to BHR processes (Mai-Lan et al., 2012), rather than the business.

Both water stewardship and the GPs encourage community participation and continuous engagement with stakeholders and both place high value on data transparency. Water stewardship principles encourage corporations to engage continuously in dialogue with a multiplicity of stakeholders, including the community (Tignino, 2017). As the IHRB stress, participation and empowerment are crucial elements in decision-making processes relating to business water use (IHRB, 2011) and are thus central to the GPs.

Water transparency is described as the act of reporting current information on a company's water management, which is a critical component of providing meaningful water information to local communities (Tignino, 2017). This is in parallel with the BHR principle of accountability and transparency which highlights the need for honest reports on water management from businesses. In essence, this principle means that businesses must improve their integrity in their relationships with all stakeholders (IHRB, 2011). Nowadays, having environmental (including water) reports is considered critical by investors since it can be used as a predictor of market value (Ionescu et al., 2019; O'Neill, 2015). For hotels and resorts, this includes reporting on total water consumption and consumption per room.

In terms of hotels and water stewardship, the Intercontinental Hotel Group (IHG) exemplifies a comprehensive water risk assessment. From 2018 IHG have been using a Water Risk Assessment Framework for all their company's hotels. As a result, their hotels are able to manage and mitigate water risk by measuring and monitoring water usage, improving their water performance and resilience against local water challenges, and engaging staff, guests and external stakeholders in water stewardship (United Nations Global Compact, n.d.). Several hotel chains such as Soneva, Radisson and Hilton refer to water stewardship efforts and disclose their water use data. While, Hilton's documentation refers to human rights due diligence, there is scant evidence of hotels who have conducted Human Rights Impact Assessments (Sandang, 2015). Eight hotels in India, for example, were included in KUONI's human rights impact assessment, and they agreed to sign a code of practice and sustainability certifications. Whilst lack of access to clean water for domestic use was identified as high risk impact, the code and certification emphasized adequate working conditions (KUONI, 2014).

In the light of the BHR framework, we can see that respecting and protecting the HRW is part of a hotel businesses obligations. Furthermore, there are parallels between the BHR and the stewardship approach to sustainable water management. Both pave the way to a better

understanding the responsibility of hotel towards the HRW. In the following section, we describe the study site and methods.

Study site and methods

We conducted the research in Yogyakarta, Indonesia's second (to Bali) most important tourism destination (Lonely Planet, 2019). The city and wider region are recognized for their cultural heritage, offering many historical sites, museums and monuments including two UNESCO world heritage sites: The Prambanan Temple and Ratu Boko Palace. Yogyakarta is renowned for classical Javanese fine arts such as batik, and performance arts including ballet, drama, music, poetry and puppet shows (HVS, 2015; Novira et al., 2012). Moreover, lying between Mount Merapi in the north and the Indonesian ocean in the south, Yogyakarta is blessed with a multitude of natural as well as cultural riches.

Since the 1970s Yogyakarta has been prioritized as a national tourist destination (Dahles, 2002). Development ran a pace in the 1990s but this has expanded exponentially since it was established as part of the "New Bali" project in 2019. The tourism development acceleration scheme is focused on infrastructure development, spatial connectivity, and tourism governance and management (Ahsinin et al., 2020). The Indonesian government has invested over US\$550 billion on infrastructure development in the "New Bali" project from 2019 to 2020, including in Yogyakarta (Kencana, 2020). These include the construction of the New Yogyakarta International Airport; the construction of new toll roads, as well as the repair and expansion of rail transportation (Ahsinin et al., 2020).

In 2019, Yogyakarta received over 6.5 million tourists and over US\$42 million in revenue from tourism (BPS Yogyakarta, 2020). Approximately 90% of Yogyakarta's tourist are domestic travelers and 70% of these come from Jakarta, while the rest come from its surrounding cities (HVS, 2015). Yusuf and Purwandani (2020) suggest that since 2015 the number of tourists has exceeded the city's population, which in 2018 was 3,587,921, a danger signal of over-tourism.

The rapid tourism development has been complimented with the proliferation of hotels, with 647 new hotels between 2013 and 2019 throughout the Yogyakarta region (BPS Yogyakarta, 2020). Hotels taxation is in the top five contributors for tax revenues (BAPPEDA Yogyakarta, 2022), and as Rahadi and Hasmarini (2018) suggest, the increasing number of hotels has a positive and significant impact on the job market.

The increasing number of hotels and guests has intensified freshwater demand and challenges the equitable distribution of water. In Yogyakarta, water concerns and disputes linked with tourism including warnings of a water shortage began to emerge in public discourse in 2014 (Batubara, 2014; Muryanto, 2014). In addition to tourist demand, the population is increasing, currently 3.3 million people, and estimated to reach 3.7 million in 2035 (Admin, 2017). The Municipal Waterworks has not yet been able to accommodate the rising water needs of the community, let alone large-scale demands such as hotels and condotels so they extract groundwater independently, leading to a decline in groundwater levels of between 10 and 50 cm/year (Batubara, 2014). As a consequence Yogyakarta could face a serious water crisis in the near future (Admin, 2017).

The research was conducted in the two administrative districts of Yogyakarta province where hotel development is concentrated (Yogyakarta city and Sleman regency), see Figure 2.

This study utilized a qualitative approach following a constructivist-interpretive paradigm (Creswell, 2009). Primary data came from participants in the form of description and narration while laws, policies, government reports, NGO reports, and information from other relevant studies are used as secondary data (supplementary file 2). The research focused on 42 key local stakeholders who have a relationship with hotels and their water supply. The United Nations protect,

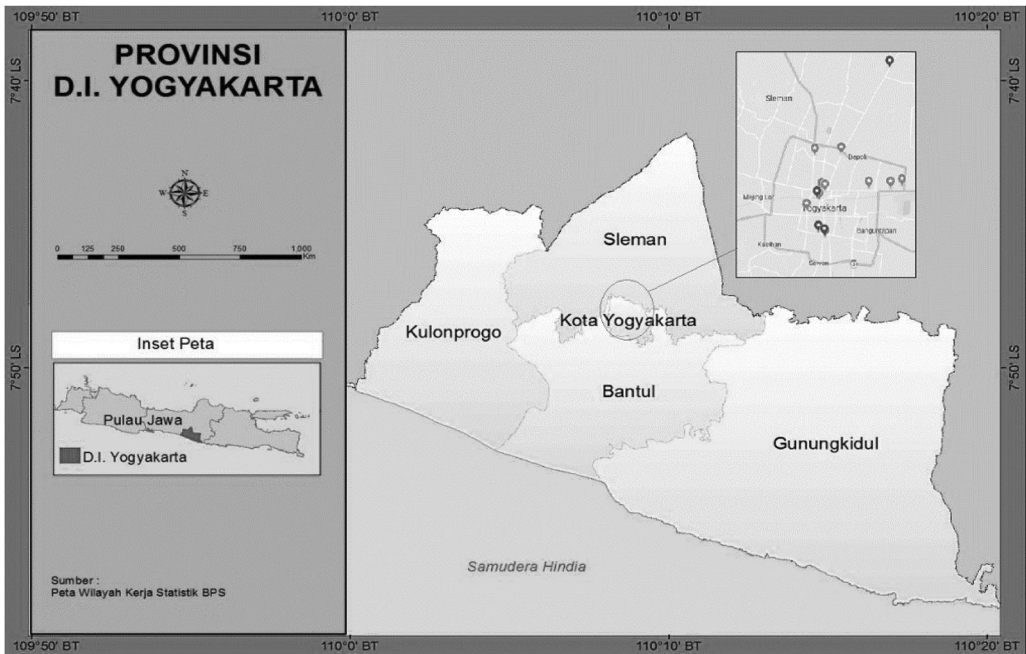


Figure 2. Research area.

respect, remedy framework and Cole's (2012) water-tourism stakeholder map guided our stakeholder selection.

A sample of hotels were selected using a purposive sampling method. Using a theory-guided sampling criteria (Palys, 2008), the selection was based on their type (Medlik & Ingram, 2000); in this case 10 star rated and 5 non-star rated hotels. The additional 27 stakeholders including government agencies, community groups etc., and their roles, are listed in [supplementary file 2](#). All participants considered important for the study willingly participated due to the perceived urgency of the issue.

In this study, we declare our positionality as activists. Our research was academic but the purpose is to bring about greater justice in the spirit of scholar activism (Cole et al., 2021). In doing so, we have been working in collaboration with a group that advocates for communities impacted by hotel developments i.e., FPRB (Yogyakarta Risk Disaster Mitigation Forum). As a result, we gained access to government agencies and hotels, as well as suggestions of other participants. We also organized a multi-stakeholder meeting attended by government agencies, hotel engineers and citizen representatives.

Primary data collection took place from February to June 2019, and ethical approval was acquired from the Faculty Ethics Research Committee before field study. During the first week of the field study, a research permit was acquired in Yogyakarta. Every official that participated granted personal informed consent verbally.

Primary data was acquired using semi-structured interviews, participant observations, and focus groups. The interview duration ranged from 90 to 120 minutes, including observation in the case of hotel participants. The interviews covered areas including law and legal enforcement, compliance, and efforts to respect the local communities' rights to water. Observations focused on water management practices on the hotel premises (water network, pump, water meter, etc.). The interviewee/hotel staff member guided the observation, this was generally the chief engineer as they are best informed about a hotel's water management. For government agencies, the focus of the observations was to understand the practices of hotels' environmental monitoring

and control. In this respect, the researcher shadowed government officials on two occasions: once to monitor a hotel's deep well pumping test, and once to monitor a deep well installation. All interviews were recorded and transcribed.

We employed thematic analysis for interviews, observations and focus groups to capture the voices and experiences of participants to facilitate understanding from a bottom-up perspective (Willig & Rogers, 2017). Preliminary themes were generated from the data manually which were presented at a multi-stakeholder focus group to gain feedback. They were then reviewed and checked to ensure that they were convincing and grounded in addressing the research questions (Braun & Clarke, 2013). In the following section, we describe and explore the final themes.

Findings

1. *Environmental Impact Assessment for hotels*

In this section, we review the environmental impact assessments that are required for hotel developments and the inadequacies of their provisions. These are foundational to performing Human Rights Impact Assessments as part of the due diligence process within the BHR framework. There are three types depending on the size and scope of a development. In line with Indonesian Government Regulation 27/2012, the largest hotels require an environmental impact analysis (AMDAL) prior to construction; large and medium size properties require an environmental management and monitoring report (UKL-UPL) to be submitted every six months, while the smallest properties just need an environmental statement letter (SPPL) prior to construction. Only an AMDAL requires a thorough impact assessment whereas UKL-UPL is a prediction of potential threats to the environment based on secondary data. Both AMDAL and UKL-UPL are followed by a declaration of the necessary efforts to be taken to tackle the threats. An SPPL is a mere statement of ability from the person in charge of the business to carry out environmental management and monitoring of environmental impacts.

According to public government data, only 68 out of 1,817 hotels in the region have submitted environmental documents. Of these 68 hotels, only seven have submitted an AMDAL (<http://dlhk.jogjaprov.go.id/amdal/peta/index.php?bid=hotel>). This is likely because the size of the land and building area of most hotels in Yogyakarta does not meet the requirement for the AMDAL process. In this study, only one star rated hotel was found to have an AMDAL document. Meanwhile, the majority of non-star rated hotels do not have any environmental impact documents at all (see data set 1).

In addition to the environmental impact assessments above, the Yogyakarta provincial government requires a pumping test to determine the impact of hotel groundwater use. The pumping test takes about 5 h and measures the water impact/depletion in the surrounding community wells. Typically, the test is conducted every three years before renewing the deep (40–120 m) groundwater permit. In between those years, efforts to monitor the impact are based on community reports i.e., when local community wells are disrupted.

However, pumping tests only apply to hotels that have groundwater use licences and utilise deep groundwater wells (PU-ESDM Provinsi Yogyakarta, 2017). As indicated in data set 1 these are three-star hotels and above. In addition, as observed at a multi-stakeholder meeting, the pumping test is problematic as it cannot fully identify the disturbance to local residents' wells because it does not take into account the residents' wells alteration or the overall picture of the groundwater level. This concern is also raised elsewhere. The International Committee of the Red Cross for example, in their practical guidelines for test pumping, warned that pumping tests are not very good at predicting long-term aquifer behaviour (ICRC, 2020).

Moreover, while community involvement is required it is not taken seriously. Based on observing a groundwater well installation no community representative was invited to attend, but an

attempt was made to co-opt a local security guard to sign the documentation. In this case, he refused, and the instalment process had to be postponed.

2. Water Management

Respecting the HRW implicates the need to judiciously measure and manage the use of water. Hence, managing water sources and its data are crucial. In this section, we discuss existing water sources and data management; water saving and innovation practices of hotels to understand the initiatives taken by hoteliers to respect the HRW.

Water sources and data management

There are two sources of water hotels use: the regional water company (PDAM) and groundwater, the latter is by far the most common. In Yogyakarta city alone, as of January 2020, only 180 hotels, out of around 600, were registered as using water from the regional water company (PDAM) (Rusqiyati, 2020), probably due to the unreliability and expense of this water. One informant said:

Because the PDAM is terrible, the water often stops flowing [...] but the business consideration of PDAM is that it is more expensive than groundwater (NCXY 1).

Another hotel engineer suggested that PDAM does not sufficiently meet the demands for hotel water. In some cases, PDAM can only provide less than half of the daily needs of hotels (see data set 2). Moreover, the water quality (pressure and purity) is often below a hotel's expectation as they strive to provide a standardized service. In some cases, no PDAM water pipelines could be accessed leaving those hotels to rely entirely on groundwater with well depths ranging from 9 to 120 m. The general water distribution pattern in three-star hotels and above is as illustrated in Figure 3, whereas for two-star hotels and below, the distribution pattern is simpler using outdoor water containers as water hubs.

To reduce the use of groundwater, the government requires hotels to use PDAM water where possible. However, not all hotels are willing to be transparent about their PDAM water usage. Some admitted it would force them to exceed their operational budget. PDAM tariffs are 22 times more expensive than groundwater. Hotels install PDAM water, as a formality, to comply with the regulations. One non-star hotel had a PDAM meter but did not connect the pipes from the meter to the hotel. Non-star rated hotels use groundwater without a permit (unreported), and thus there is no monitoring from local government. Only 50 percent of hotel wells are

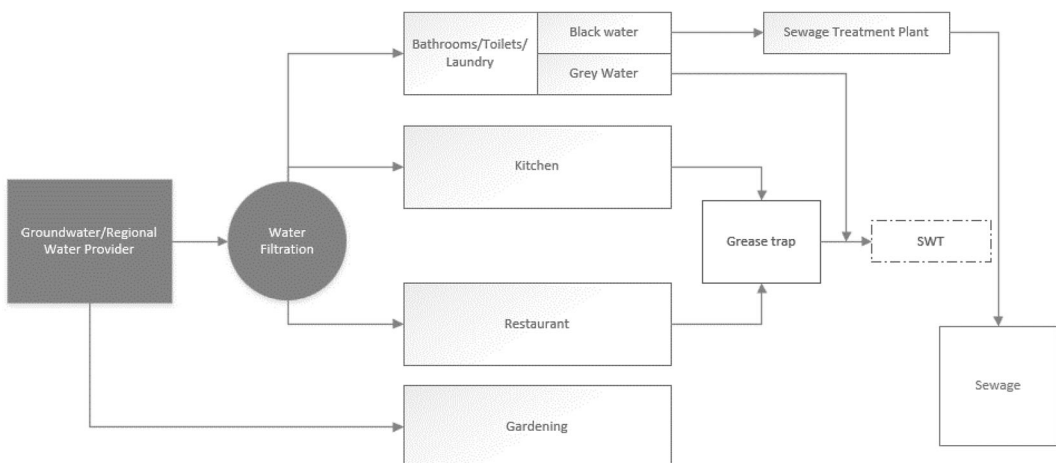


Figure 3. Typical water distribution system for three-star hotels and above in Yogyakarta.

licensed (Arumingtyas & Junia, 2022). Furthermore, many hotels are using the same water source as local residents because the majority of community water comes from groundwater.

No hotels practiced water recycling and gardens were watered using treated ground water. The hotel engineers consider reusing water by recycling greywater problematic, for financial reasons, because the hotel owners want to see a precise break-even point on an investment made in water recycling technology. Meanwhile, in terms of rainwater harvesting, knowledge was minimal, and concerns were raised about water quality.

No attempt had been made by hotels to monitor water use in each sub-division (e.g. laundry, kitchen, rooms, gardens, pools) due to the cost of installing water sub-meters. In star rated hotels, water is measured via the water meters to control the costs primarily on reducing energy used to pump water. Consequently, as highlighted by one hotel engineer, the main flaw in hotel water management results from a lack of water data.

I cannot analyse it (detailed water usage) because there is no measurement tool yet. [...] So because we do not have tools, we cannot give the data, [...]. So, it is hard because I also need the data, but I do not have it yet. So, for analysis purposes, the data is still general (NCXY 3).

Meanwhile, in non-star rated hotels, where all water needs rely on groundwater, no data management was found at all.

Water conservation and innovation

To respect local residents HRW, hotels need to conserve water. In this section, we explore the conservation practises hotels are using. As the primary consideration of the hotels was cost efficiency, there were moves to adopt water-saving technologies. In star rated hotels, they were being implemented on instruction from the franchise holder/corporate group to maintain standardized services. One participant 5-star hotel had a goal of reducing water usage by 5% set by the chain's central office. The hotel engineer stated that it was challenging to reduce water consumption by 5% every year since there is no monitoring and evaluation of water use. Furthermore, he clearly lacked a thorough understanding of the initiative:

Yes, because from last year if we could, we save. If we keep on saving, keep going down, it is not possible. So, it can later be zero, that is not possible logically. If told to keep saving, let us put it down this year by 5%, meaning that in 20 years we will not use (new) water. However, it is not possible (CXY 1).

The most common "water-friendly" technologies being implemented were aerated faucets, low-flow showerheads, and low-flush or dual flush toilets. In addition, some 2- and 3-star hotels are removing bathtubs except in premium rooms. Furthermore, most 3-star hotels outsource their laundry to a third-party service. This just displaces water consumption to another business. Most participant hotels (star and non-star rated) use signs such as stickers, cards, and paintings to promote eco-friendly behaviour in guest rooms (e.g., towel reuse, water conservation) as well as for staff in their working areas (kitchen, laundry room, bathroom, and garden). Yet, there is no tracking of their effectiveness.

As a part of the Provincial Regulation 5/2012 (article 56), hotels are required to have recharge wells based on their groundwater use. However, few hotels comply due to limited green space, so most of the rainwater flows directly into the city drainage system. Moreover, one participant stated recharge wells were challenging because of geological and landscape barriers within the hotel compound, so they had built one in the neighbouring community. In addition, they made biopori but the result was not optimal. As one participant pointed out:

Recharge wells are a bit strange, if it rains for a while, it is already full. So, we choose to make it in the neighbouring village. We made a biopori, but the results are not optimal, if it rains, it is quickly full. (Because of the structure of the soil?). Yes, maybe. But I do not know. It should be sand. But even after many hours, the water is still not absorbed.

3. Hotels inner circle and failed efforts

Identifying hotels local and cumulative impact, on the human right to water, is problematic. Based on the interviews with hotel engineers and observations at the Green Building Council Indonesia (GBCI) forum we identified three interconnected groups that we refer to as hotels inner circle, that contribute to this, as discussed below. We also discuss the failure of environmental certification schemes.

The hotels inner circle is a group of interconnected professionals that have a direct effect on the water management. They are investors/owners, developers, and operators/managers. The hotel investors or owner's main interests are return on investment, profits and hotel brand image. A hotel owner and investor can be an individual, or a group of investors incorporated in an investment company. Secondly, hotel developers, which include a hotels architect, building contractor, and consultant. Their main interests are (hotel) project completion, and an up to date (hotel) design for a standardised service. The last party consists of the brand/franchise management, on site hotel managers, and staff. Their main interests are increasing the sales of products offered by a hotel, maintaining clients' satisfaction, maintaining a good hotel image, and increasing profits. Figure 4 illustrates the identified hotel businesses inner circle.

From observations during the GBCI-Hoteliers' forum, we identified barriers to improved water management from all three parties in the inner circle. Hotel architects, developers and consultants do not keep up with the current standards and innovations in environmental stewardship. Hotel investors are concerned only with maximising profits. While hotel operators lack the knowledge and expertise to address sustainability agendas and are not honest about their actual environmental performance/impact, either out of fear of being caught doing something wrong or wanting to be perceived as respectable in the eyes of other hotels (competitors) and the public.

The GBCI urges hotels to voluntarily participate in GBCI-GREENSHIP certification, which includes water conservation criteria, water management policy, water sub-metering, water

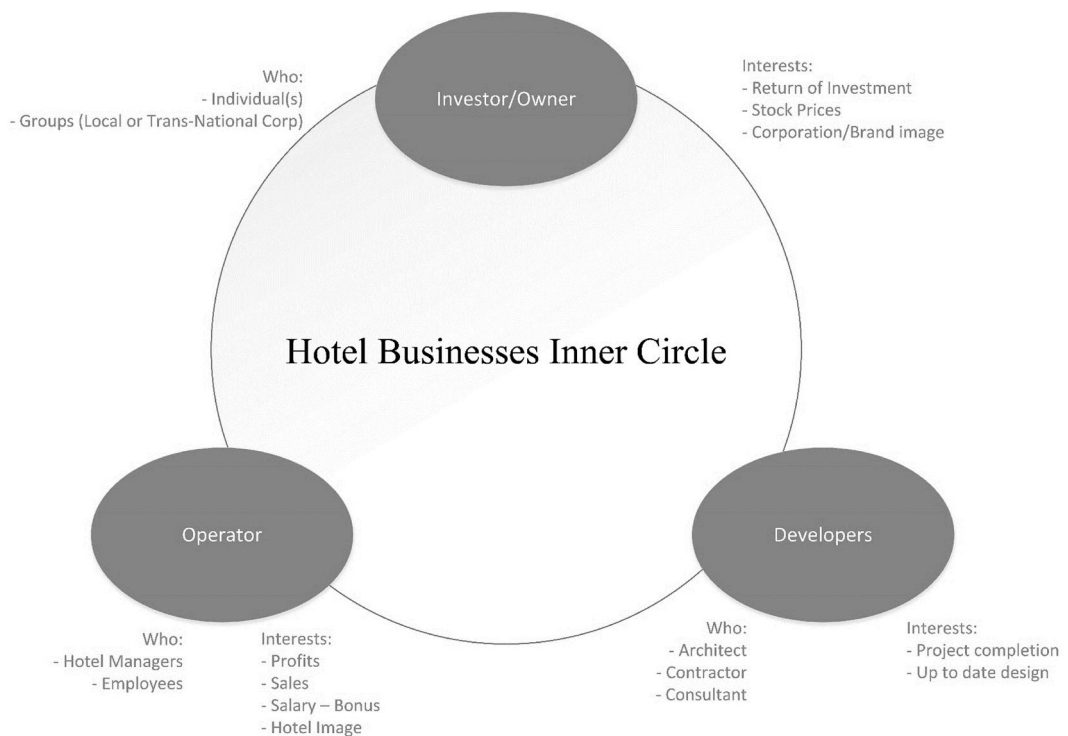


Figure 4. Hotel Businesses Inner Circle.

monitoring control, freshwater efficiency, water quality, recycled water, potable water, deep well reduction, and water tap efficiency. However, only a small number of hotels (predominantly high star rated hotels) are certified due to the costs. The cost of GBCI GREENSHIP certification ranges from \pm US \$6000 to 11000 (in 2021) excluding consultation and assessor operational expenses (Green Building Council Indonesia, n.d.). None of the hotels subscribed to other certification schemes that include water conservation or stewardship such as ISO 14001 or ITP Water Stewardship due to limited staff capacity and awareness.

In most cases, hotel engineers were not aware of the availability of voluntary water stewardship initiatives, and only GBCI GREENSHIP standards are available in the Indonesian language. Meanwhile, opportunities for hotel engineers to learn are rare. The only forum that regularly provides information for hotel engineers is The Hotel Chief Engineer Association forum, which meets intermittently and invites panellists from academia, hotel appliance vendors and government agency representatives. Thus far, the only sessions on water have been about meeting the standardized service for tourists, in terms of water quality. Furthermore, the final decision to implement water stewardship is in the hands of the hotel management/owner and hotel engineers must propose a thorough financial calculation for their hotel to adopt water stewardship initiatives.

Concluding discussion

Challenges for hotels to respect the human right to water

Our findings from Yogyakarta suggest that hotels are not adopting the GPs with respect to the right to water for the following reasons. First, a lack of awareness. Despite having a basic understanding of environmental sustainability, voluntary adoption of water stewardship and respect of the human right to water is limited. The majority of hotel engineers are not aware of the availability of voluntary water stewardship initiatives even though globally the number of initiatives to transform hotel water management continue to grow (ITP, 2016, 2018b; Kim et al., 2013; Styles et al., 2013; Sustainable Hospitality Alliance, 2020). Locally, there is only one voluntary scheme, no codes of conduct or self-monitored certification schemes. The one scheme: Green Building Council Indonesia (GBCI), that includes water stewardship criteria, is prohibitively expensive and uptake remains very limited. No other voluntary standards and guidelines are available in the Indonesian language, and most hotel engineers do not comprehend any other languages. Shortcomings in accessing information or guidance on water stewardship and limited staff capacity is clearly a barrier to improved water management. As found elsewhere (Cole et al., 2020) the smaller hotels used less water management and innovation solutions due to a lack of awareness and understanding of the need for innovative water management, as well as a lack of funds due to marginal economic returns.

Secondly, as the ground water tariff is relatively cheap, the incentive to increase staff capacity with regards to water conservation is limited. Extant studies indicate that when it comes to water, hotel managers are price sensitive (Razumova et al., 2016; Deyà-Tortella et al., 2017). This means hotel managers may not be motivated to plan and monitor consumption closely when water resources are inexpensive (Popely, 2018). Our findings reveal that there was no methodical monitoring of water use, and data management is absent. However, hotel water management standards and approaches should not just aim to reduce costs but also preserve water availability for the surrounding community and environment (Popely, 2018). For that to happen, evidence indicates that hotels can be motivated to adopt environmental strategies when pressured by external institutions (Ayuso, 2006). This can be either from public law and/or civil society.

Thirdly, as very few hotels conduct an environmental impact assessment (AMDAL) improving regulations that demand hotels full accountability in respecting the HRW is challenging. Without a comprehensive impact analysis, the accumulated impacts of the development of star and non-

star rated hotels cannot be fully identified and managed. Evidence from a number of destinations suggests that the lack of clear regulation and government policy hinders equitable water distribution (Cole, 2012; Hof & Blázquez-Salom, 2015; Noble, 2012); and efficient and stricter regulation plays an important role in engaging hotels in water management issues (Alonso-Almeida et al., 2017; Dinarès & Saurí, 2015; Kasim et al., 2014; Razumova et al., 2016; Tekken & Kropp, 2015). Meanwhile, as the Yogyakarta government plans to boost tourism, a high level of regulation, as well as industry self-regulation, are essential to ensure minimal environmental and social costs and to maintain incremental sustainable tourism growth (Weaver, 2000, 2012). Thus an assessment of the existing conditions and the broader impact of water use should be a legal requirement prior to building permission being granted for a hotel; and for hotels water use to be strictly monitored and controlled.

Finally, we identified that the challenges faced by hoteliers to respect the HRW start at the very beginning of a hotel's development. Hotel developers and consultants have not kept up with best practise and adopted human rights and environmental impacts assessments, which could be applied in the hotel development and design decision making. In addition, valuing profit and hotels public image over a genuine environmental responsibility puts hoteliers in a stagnant position in terms of keeping up with the current developments on water stewardship initiatives

Remedy

A potential remedy is integrating Human Rights to Water Impact Assessments (HRWIA) into the existing environmental impact assessment framework. As the literature indicates, hotels need to consider the impact of their water use both cumulatively and at the community level (Antonova et al., 2021). Moreover, the fact that there are similarities between AMDAL and HRWIA suggests an opportunity to link environmental stewardship and human rights language (Kemp & Vanclay, 2013). Similarities exist in terms of community participation, assessing the wider impact of hotel water use based on primary data and identifying water efficiency and saving efforts. An integrated AMDAL-HRWIA therefore, should be extended and adapted to cover all types and sizes of hotels.

Organizations such as Institute for Sustainable Tourism have been advocating for an integrated assessment where human rights (including the HRW) are embedded within the scope of environment, social and health impact assessments (Dietrich et al., 2017). Meanwhile, ITP (2018b) recommends that hotels work with local stakeholders to determine the origins, impacts, and dependencies of their water consumption. This entails systematically analysing where hotels' water comes from, potential usage-conflicts, when to use more or less of it (e.g., wet/dry season), and what infrastructure is in place to handle wastewater and guarantee local inhabitants have access to freshwater (ITP, 2018b). Respecting the HRW, therefore, means that hotel water management is not confined to the hotel domain only but is an issue that needs to be approached in a participatory and contextual fashion.

HRWIA accentuates community participation. From a BHR standpoint, the principle of inclusive participation extends far beyond mere consultation or a technical addition to project design; "it is a fundamental principle of democracy that people are entitled to participate in decisions that affect them" (Götzmann, 2017, p.99). In fact, the GPs note the significance of meaningful dialogue with potentially impacted stakeholders and paying special attention to disadvantaged communities and the various risks faced by women and men (Principle 18). Applying this understanding of participation in an HRWIA context, rights holders must be able to meaningfully participate in shaping and influencing the assessment process itself, as well as impact-related findings and decisions. For example, the Inter-Continental Hotel Group in Chengdu, China have partnered with a local community organisation (Chengdu Urban Rivers Association) to develop plans to manage hotel water consumption as well as manage water scarcity and pollution in the local area (ITP, 2018b).

Table 1. Critical areas of understanding of HRWIA for hotels.

Areas of understanding	<ul style="list-style-type: none">• The impact of water use, both on quality and quantity, on available water supplies• Other users being affected• The present availability of water access including seasonality• The cumulative impact and future water supply (including, for example, deforestation, major planned development, and climate change)• Community structures and socio-cultural dynamics that affect water availability (including ethnicity, gender, minorities, vulnerable groups, and their intersectionality)
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In [Table 1](#), we identify the critical areas of understanding for a hotel’s human right to water impact assessment, which, if conducted rigorously, would enable engagement between hotels and their communities. As a result, hotels would be managing water sustainably in collaboration with local communities, whilst preparing and providing for any remediation through legitimate processes (United Nations, [2011](#), principle 22), i.e., they would be respecting the human right to water.

Research contribution

Tourism will never be sustainable if the human right to water is not respected. This is the first study to focus on hotels and the HRW. This paper has advanced understanding by exploring not only the challenges hotels face by also offering a solution. We found that there are more similarities than differences between stewardship and BHR approaches and identify how HRWIAs should be integrated into the former, for hotels to respect the HRW.

The study provided detailed evidence on why voluntary adoption of the GPs in respect to HRW is ineffective, due to a lack of awareness; lack of substantive voluntary schemes; the ground water tariff; the absence of data collection and management; return on investment, profit and public image over environmental considerations; and inadequate regulations and a lack of enforcement. Expecting hotels to voluntarily respect the HRW is not straightforward but requires strong checks and balances between public law and civil society governance, to guide and put pressure on hotels to improve their environmental accountability. Furthermore, our study finds that to achieve sustainable water use in destinations will require the complimentary responsibilities of all three key parties to the GPs i.e., our study confirms the polycentricity of the BHR framework as illustrated in [Figure 5](#).

Furthermore, our study reveals the importance of water impact assessments for hotels. We have suggested that a HRWIA could remedy the situation and be an important entry point for hotels to reform their water management, allowing for a more comprehensive view on their impact on water availability. It has the potential to enable engagement between hotels and their communities and go beyond merely reducing hotel water use or sharing water.

Study limitation and further study

This study was a qualitative study. While we have included some quantitative data, see data set 2, more quantitative data is needed. A large sample of hotel participants and a quantitative analysis regarding hotels water consumption against local and international benchmarks, such as the Cornell Hotel Sustainability Benchmarking (Ricaurte, [2017](#)) or Hotel Water Measurement Initiative (ITP, [2016](#)) would aid understanding of the regions’ hotels’ water consumption pattern in more detail.

An important avenue for future studies would be to scrutinize the extent of legal enforcement in protecting and fulfilling the right to water in relation to the hotel industry in a destination. Such studies could evaluate the operation of existing law and its enforcement and uncover any regulatory gaps that need to be addressed. To secure greater water justice in tourism destinations

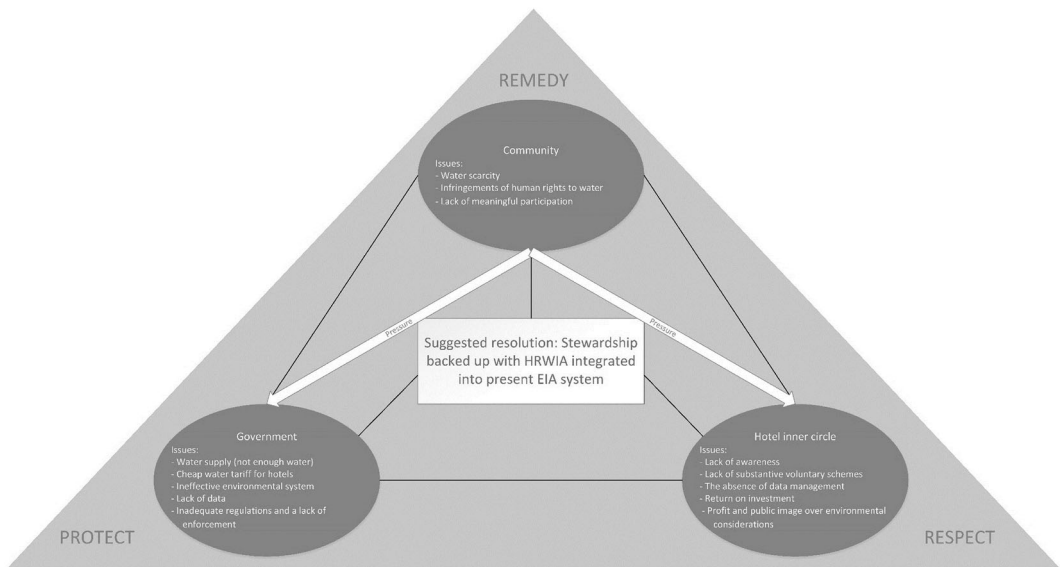


Figure 5. Research contribution: Hotels and the HRW.

further research should seek to understand what makes community participation, in relation to hotel water management, meaningful at the destination level; how communities respond to water competition with hotels, and the efforts they make, and that are needed, to pursue remedies.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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