

## Research Paper

# Inclusive WASH and sustainable tourism in Labuan Bajo, Indonesia: needs and opportunities

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## ABSTRACT

Rapid tourism growth can place unprecedented strain on water resources and reduce access for local communities. This study explored the state of Inclusive water, sanitation and hygiene (WASH) in the tourism sector and local communities of Labuan Bajo, one of Indonesia's 'super-premium' tourism destinations. The formative research applied an Inclusive WASH-at-Work framework; data were collected using a case study methodology through semi-structured interviews ( $n = 20$ ) and focus groups ( $n = 6$ ) with government, tourism and community stakeholders. The findings identified growing tensions over inequitable water service levels and WASH access. Significantly, reported negative impacts were disproportionately experienced by women and girls, elderly and disabled members of the community, who suffer most from inadequate WASH facilities in hotels, public settings and their homes. Governance of and capacity constraints around WASH management highlighted the value of Inclusive WASH solutions to overcome the challenges Labuan Bajo faces as a rapidly developing tourism destination. Critically, solutions must be locally-driven, build local capacity and open pathways to collaboration between the community and decision-makers in the national government, provincial government and private tourism sector. Enhanced stakeholder collaboration and increased private sector contributions are needed to ensure a more equitable distribution of tourism benefits to underpin WASH and destination sustainability.

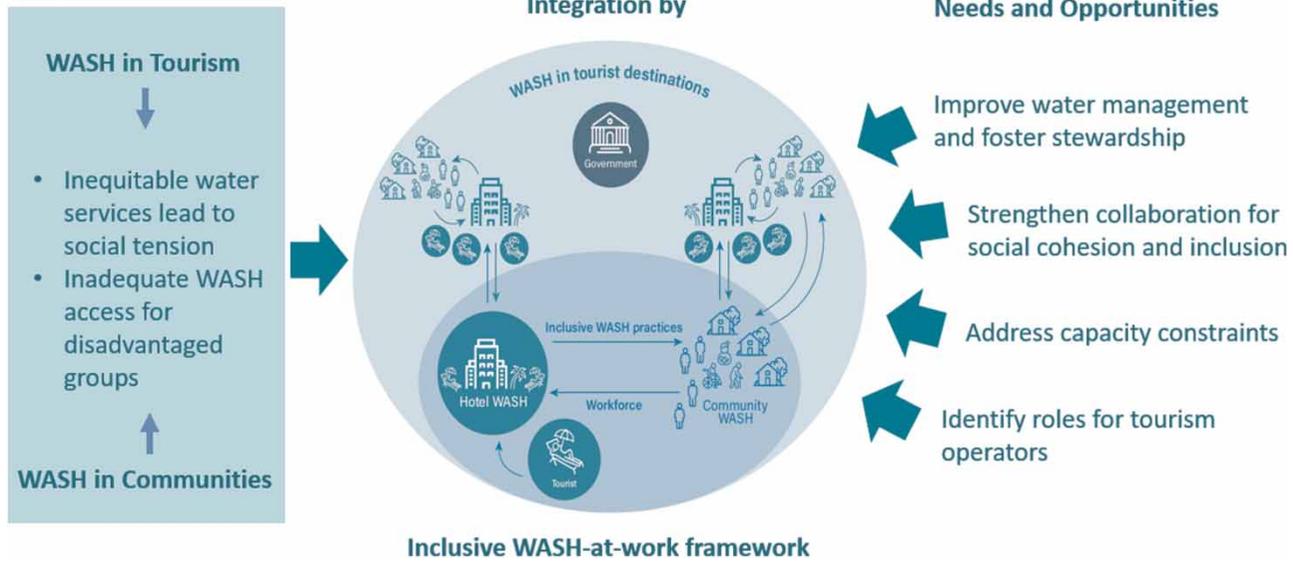
**Key words:** equity, hygiene, inclusive, sanitation, tourism, water

## HIGHLIGHTS

- Super-premium tourism destinations represent a challenge and an opportunity for socially inclusive WASH.
- Disparities between water service levels to hotels and local communities increase inequity.
- An Inclusive WASH-at-Work framework can help integrate stakeholders through a shared vision of a sustainable tourism destination.
- Improved collaboration and planning can benefit local communities through inclusive WASH outcomes.

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## GRAPHICAL ABSTRACT



## INTRODUCTION

Improved water, sanitation and hygiene (WASH) and water resource management can contribute to a country's economic growth, increase productivity and alleviate poverty (Hutton *et al.* 2008; Van Minh & Hung 2011). However, lack of financial support for WASH facilities hampers achievement of Sustainable Development Goal 6 (SDG6) to ensure availability and sustainable management of water and sanitation for all (UN 2018). SDG6 follows the principle of 'Leave No One Behind' (Jones *et al.* 2017; Milan 2017; UN 2021), i.e. prioritising the needs of those without access to safe WASH, especially the most disadvantaged such as women and girls, people with disabilities, ethnic groups and social minority groups (Odagiri *et al.* 2020; UN 2021).

There is a significant need for public and private investment to provide adequate access to water and sanitation. Globally, 2 billion people live without access to safely managed water, 3.6 billion lack access to adequate sanitation and 2.3 billion lack basic hygiene services, which are crucial to maintain health and prevent diseases, such as the COVID-19 pandemic (WHO 2018; JMP WHO/UNICEF 2021; UN Economic and Social Council 2021). Moreover, at the country level, achieving sufficient WASH sector investment remains problematic (Van Minh & Hung 2011) as does prioritisation of the WASH sector (USAID 2017).

Over recent decades, cumulative disadvantage has risen in Indonesia whereby rapid but geographically unequal WASH improvements have been associated with corresponding health improvements such as reduced child mortality (Hodge *et al.* 2014). Based on Indonesia's national surveillance report, although 90% of the population have access to improved drinking water, only 18% have access to safe drinking water (MOH 2021), and only 46.5% use more than 100 L/capita/day (MOH 2018). Despite a 5% increase in sanitation access between 2018 and 2020, 20% continue to lack access to improved sanitation across urban and rural areas (MOH 2021), with rural households are less likely to have access than in urban areas (Irianti & Prasetyoputra 2021). In regard to hygiene, only 49.8% of those older than 10 years practice proper hand washing with soap (MOH 2018). Gaps in WASH regulations, low political prioritisation of WASH issues, a rapid push towards decentralisation (Hodge *et al.* 2014) and sub-optimal investment have contributed to slow uptake of WASH (USAID 2017; Odagiri *et al.* 2020).

The Indonesian tourism industry is a rapidly growing sector but is vulnerable to economic downturns due to natural and non-natural disasters. In 2017, tourism's contribution to Indonesia's Gross Domestic Product (GDP) reached over 4% (Statistics Indonesia 2017), though more recently the COVID-19 pandemic caused a plunge from USD 4.2 bn in 2019 to USD 88 m in the second quarter of 2020 (OECD 2021). The Indonesian government plans for tourism to contribute to GDP growth and employment, with a target of 12% of GDP by 2027 (Haryana 2020). To maintain tourism's continuity and

growth through the COVID-19 pandemic, the national government is promoting five ‘super-premium’ tourism destinations to stimulate the economy in areas negatively impacted by COVID-19 (Nopiyani & Wirawan 2021) with a key focus on the practice of cleanliness, health, safety and environmental protocols (MTCE 2020a).

Ensuring improved WASH access can maximise tourism potential, leading to further investment in tourism businesses (Hutton & Chase 2016; Elysia & Wihadanto 2020). However, in reality, tourism development and planning that considers WASH issues remains sporadic. While evidence suggests that significant development of tourist areas positively impacts the economy, it can also harm society and the environment (Girard & Nocca 2017). For example, tourists’ higher per person water use compared to local people is most pronounced in low- and middle-income countries across the Asia-Pacific (Becken *et al.* 2013; Becken 2014). Poor sanitation impacts tourism by lessening the attractiveness of destinations and can lead to visitor illness, with subsequent negative impacts on arrival numbers and revenue (Hutton *et al.* 2008; Elysia & Wihadanto 2020; Naumov *et al.* 2021). Tourism development can cause water scarcity and exploitation by hotels with associated negative gender impacts (Cole *et al.* 2020), and environmental pollution from poorly managed hotel waste disposal (Frone & Frone 2013; Becken 2014). These impacts can cause social conflict and damage social cohesion, in turn threatening tourism’s social contract and thus the long-term potential benefits of tourism to the wider destination area (Jennings 2017).

### Tourism development in Labuan Bajo

Labuan Bajo was designated by President Widodo as a ‘super-premium’ tourism destination for local and international tourists. It is the gateway for entrance to the Komodo National Park, home to the famous Komodo dragons, and to nearby island snorkelling and diving locations. Expanding facilities to support tourist activities, and the rapid rise in visitors, are straining the local environment and infrastructure. Prior to COVID-19, international tourist arrivals to Flores increased by 40% per annum between 2010 (41,100) and 2019 (187,100) (MB Tourism Office 2019). As Labuan Bajo is scheduled to host the 2023 ASEAN and G-20 Summits, there are expectations of further government investment in infrastructure.

Sustainable tourism development is enhanced by providing equal access to water and improving socially inclusive hygiene and sanitation practices (Loehr *et al.* 2021). Communities living in tourist areas need to experience tourism’s benefits, from equitable water access to direct economic benefits (Becken 2014). To support the Indonesian government’s goal of developing tourism for economic growth, Inclusive WASH in tourist destinations requires knowledge (Girard & Nocca 2017), which this study aimed to provide via research to:

- Understand current WASH services and challenges from different stakeholder perspectives;
- Highlight the gender equality, disability and social inclusion (GEDSI or ‘Inclusive’) WASH issues in tourism destinations; and
- Examine opportunities to involve the tourism sector in achieving Inclusive WASH development.

### Study framework

As drivers of economic activity in a destination, tourism actors such as hotels, tour operators and restaurants are entry points to equitable WASH provision (Loehr *et al.* 2021). This study adopted an integrated and holistic framework built on existing WASH-at-Work frameworks and guidance which outline the responsibilities of businesses to provide and monitor safe and adequate WASH in the workplace as well as the consultation, management and governance processes needed to meet these and regulatory health and safety requirements (e.g. ILO 2016; UNICEF 2019). Further defining Inclusive WASH-at-Work frameworks for tourism focusses on an operators’ role in providing WASH access in the workplace, training staff, and education to safeguard the health and safety of guests and staff. The framework also considers businesses’ responsibilities to ensure adequate Inclusive WASH services and healthy environments within surrounding communities. Water stewardship works as a complementary concept, which aims to ensure water is used equitably and sustainably with economic benefits through action at site, business or catchment levels (AWS 2019). Promoted for and adopted by water-reliant businesses, water stewardship has a recognised international standard adopted by numerous leading businesses, particularly agriculture, manufacturing and, to a more limited extent, tourism. Expanding on existing WASH-at-Work frameworks with greater emphasis on water stewardship and GEDSI, provides an integrated tourism destination system (Loehr *et al.* 2021) in which gender is revealed as a critical cross-cutting element for improving access to WASH and to realise water as a human right (GWA 2019; WfWFP 2019).

An integrated Inclusive WASH-at-Work framework shows how different actors can contribute to and benefit from Inclusive WASH access on many scales (Figure 1). The framework explicitly acknowledges the interactions between WASH in the



**Figure 1** | Inclusive WASH-at-Work framework showing interactions across hotel, community and destination scales (Loehr *et al.* 2021).

workplace and community and health benefits. For example, proper hand hygiene practices taught to staff in the workplace can benefit the wider community when replicated at home. The framework also acknowledges the role of businesses in assuring environmental health water stewardship practices. The implementation of water stewardship principles, such as adopting a globally recognised water stewardship standard (AWS 2019) encourages operators to think about upstream and downstream impacts of their water extraction and wastewater disposal practices. Water stewardship responds to business awareness of water as a critical and constrained resource for business and society (Hepworth & Orr 2013). Every tourist destination system operates within a broader enabling environment, with hotels, staff, community and government actors working within various policy, regulatory, organisational, fiscal, informational, political, socio-economic and cultural conditions.

## METHODS

This study employed a case study methodology and adopted qualitative methods due to their suitability for in-depth investigations (Veal 2017) and to study specific issues such as WASH (Mohammed & Larsen-Reindorf 2020; Watson *et al.* 2020) or contexts in detail (Stake 2000). Interviews and focus groups were used to engage key stakeholders to understand the current WASH situation in Labuan Bajo across three scales – hotel, community and government. Hotels were chosen as they are critical in the tourism value chain in most destinations and require good WASH practices to provide their services.

Governments and communities also have an important role in providing a clean, healthy environment for tourists and the wider destination.

Twenty semi-structured interviews and six focus groups were conducted in August 2020 by female and male Indonesian research assistants, using tools adapted to local customs and gender norms. Semi-structured interviews were conducted with key informants (local government representatives from tourism, health, planning and public works) ( $n = 6$ ), hotel managers or owners ( $n = 5$ ), local community representatives ( $n = 6$ ), and community health workers ( $n = 3$ ) comprising 10 female and 10 male informants. Six focus groups were conducted with female and male staff of the participating hotels (2–7 participants per group). Key informants were selected based on their knowledge and involvement in WASH in tourism. Following participants' informed consent, interviews and focus groups were conducted in Bahasa and later translated into English.

NVivo12 was used to analyse the interview and focus group transcripts. Deductive techniques (Elo & Kyngäs 2008) were used to identify initial deductive codes from existing frameworks, literature, and national and provincial policies. An initial set of deductive codes were drawn from existing WASH-at-Work frameworks (ILO 2016; UNICEF 2019) and Indonesia's occupational health and safety guidelines (MOH 2016). After review by the multi-disciplinary team, these guidelines were deemed to require further GEDSI and water stewardship definition, and additional codes were added and refined. In the coding process, inductive (data-driven) techniques (Braun & Clarke 2006) were used to add inductive codes where deductive codes were limit analysis and these were further refined via combined deductive and inductive analytical processes. To minimise analytical and interpretive bias in results, data analysis by one team member was cross-checked by another, with a paired team of Indonesian and Australian researchers involved in data coding. A 4-day workshop was conducted in August 2021 in Labuan Bajo with key stakeholders from hotels ( $n = 6$ ), government ( $n = 15$ ), NGOs ( $n = 5$ ), university ( $n = 1$ ) and communities ( $n = 4$ ) to present and validate the research findings. The ethical clearance of this study was approved by Atmajaya University's ethics committee.

## RESULTS AND DISCUSSION

In Indonesia, desirable and emerging tourism locations face challenges to maintain the destination's attraction while rapidly increasing tourism facilities and infrastructure in the area. Large-scale tourism development can lead to competition for natural resources such as water, especially where the needs of local communities are currently unfulfilled. Here, we present the different WASH issues in the communities, hotels and at the destination scale of Labuan Bajo, then discuss GEDSI issues, the sustainable tourism perspective and WASH governance. Following are the needs of water stewardship, collaboration and capacity development and opportunities to overcome challenges.

### Water supply issues and local needs

Labuan Bajo is considered a semi-arid water-scarce area, with only four wet months per year (UNDP 2018; GoMB 2021). Labuan Bajo town's community and tourism businesses have been connected with piped water from the municipal water utility, sourced from spring water. Water from the utility only flows twice a week. With a population of more than 25,000 people, the total water requirement is 2,507,800 L/day or 29.03 L/s (MB Planning Office 2019). In 2019, the water supply was in deficit by 10 L/s. While Gleick, in Howard *et al.* (2020) proposed that the world community establishes a minimum water requirement of 50 L/person/day for drinking, cooking, bathing and sanitation, the Regulation Of The Minister Of Public Works Number: 14 /Prt/M/2010 Concerning Minimum Service Standards For Public Works And Spatial Planning requires a minimum water requirement of 60 L/person/day.

An estimated 30% of Labuan Bajo's water demand is from the commercial sector. Significantly, communities in Labuan Bajo received less water from the water utility, *Perusahaan Daerah Air Minum* (PDAM) in 2020 than in 2015, a reduction in service level attributed to substantial tourism development and population increase without a concurrent increase in supply volume. The lack of water could have health consequences as diseases are linked with poor hygiene caused by insufficient domestic water (Howard *et al.* 2020). Small islands and cruise ships (estimated at 1,000) receive water deliveries from the utility via a ship with a 50,000 L tank. Cruising is a key tourist attraction in Labuan Bajo with tourists often spending more days on the cruise than on Flores itself.

Hotels manage the irregularity of water supply via large onsite water storage tanks. Community households, however, rarely have sufficient storage capacity to endure water shortages. Seasonal water scarcity is a major concern, especially for community members who purchase water from retailers at high prices during times of drought. Communities in small islands

experience water challenges since the only water supply is from the main island, transported in tanks by boat. Past projects have built and trialled small-scale desalination water treatment plants; insufficient local power sources demonstrated they were not functional.

Local communities in Labuan Bajo differentiate water sources for drinking, sanitation, handwashing and other purposes. Most residents purchase 20 L refillable bottles from local water vendors or larger suppliers for drinking water, others boil water before drinking it. Labuan Bajo's stakeholders are concerned primarily about disparities in water distribution rather than water quality, although intermittent water supply can compromise water quality by increasing risks of recontamination (Kumpel & Nelson 2016), with the inequality in current water provision arrangements between hotels and communities a key concern:

*'The difference is very pronounced, if in the hotel [water utility] water flows every day, but in the community it almost never flows. Even every month, we are paying for nothing, there is no running water. We have often complained to the [water utility] regarding this problem.'* (IRN12, female, community midwife)

The differential tariff between hotels and the community means hotels pay the water utility more for water; this tiered tariff system perhaps is a good economic instrument to promote water saving among hotels but may have the unintended consequence of preferential water delivery to hotels that can pay. Differing access to and ability to store water between hotels and the community is another social concern, particularly during the dry season. The community reported that they are regularly forced to purchase expensive tanker water, corroborating previous studies of increased water costs to local people caused by tourism development (Cole 2017). Hotel staff recognised the potential for inequitable water distribution to lead to unrest and loss of social cohesion in Labuan Bajo, stating:

*'[Water] needs to be regulated so that the risk of conflict with the community does not occur. Water supply must change with [more] attention to community needs. Nowadays there is a big conflict, there are people who often complain.'* (IPR03, male, hotel)

Stakeholders raised many concerns about how the water utility manages water, the frequently interrupted flow, and recommended an increased attention from public authorities to manage water distribution more equally so as to satisfy local needs.

### Access to sanitation and hygiene facilities

Sanitation access in hotels was reported by all informants as good and safe for guests and staff. Meanwhile, sanitation access in communities varies significantly across locations, ranging from 38 to 85%, with overall sanitation access in Manggarai Barat Regency at 72% (MOH 2020). A government key informant highlighted that the current sanitation access in community is an improvement to the past, as a result of the National Total Sanitation Programme (STBM) which has been implemented since 2012. STBM focusses on ending open defaecation and improving other WASH aspects (MOH 2013). However, progress remains slow in rural areas and small islands. Indeed, Labuan Bajo's smaller islands present challenging environments for toilet construction, so communities often have less than 50% sanitation coverage due to lack of suitable locations; a common situation in Indonesia where households in rural areas tend to have lower access to toilets than those in urban areas (Irianti & Prasetyoputra 2021).

The community usually own private toilets that are simple (squat pan with pour flush) and less secure and hygienic in comparison to hotels. Respondents observed that hotels provide a higher quality toilet (flush toilet with dry floor), usually a private toilet in each bedroom. It is also not common in both community and hotels to use a dry toilet despite the area having water scarcity issues. One respondent also mentioned a problem of hygienic conditions of toilets in public facilities such as health facilities and village offices, which were expected to be a good example to the community

*'The toilets are separated for men and women. The condition is good in terms of security and easy access, but [there are] problems with cleanliness.'* (IRN01, male, government)

Toilets in community were usually a simple pit or septic tank. In small hotels, a septic tank was also used, whereas a waste water treatment plant was used in big hotels. However, in both community and hotels, there was no clear mechanism of emptying the septic tank and handling faecal waste, since there was no regular schedule for emptying and a faecal sludge treatment plant was not available in the area. Similarly, in small cruise ships (with a capacity of 10–15 passengers), the faecal sludge was normally discharged directly to the ocean.

In regards to hygiene in hotels, staff and managers reported sufficient handwashing stations (in every toilet) are provided and soap is always available to staff. However, in small hotels, staff mentioned hand sanitisers were not uniformly available, particularly in staff areas. In communities, the STBM programme has increased handwashing station availability in each household toilet. Furthermore, the promotion and access to handwashing stations has also increased since the COVID-19 pandemic, including in public places. However, households in some areas with low sanitation coverage lack access to handwashing stations, while those who have access sometimes perceive water as precious and to be saved and not to be used for hygiene purposes.

All study stakeholders indicated that domestic wastewater and solid waste management in hotels and the broader community remain a concern for all, with unsightly waste disposal identified as a potential hindrance to tourism success. Solid waste from hotels is collected by a district government service, but rural village governments, which may lack capacity and resources, are expected to manage their community's solid waste.

### Hand hygiene behaviours of staff and communities

Hotel respondents identified handwashing with soap (HWWS) at critical times as standard operating procedure in hotels. However, one staff member reported that handwashing is not always practiced even after using the toilet especially if staff are in a hurry or due to 'individual habits'. While there was a strong focus on protecting tourists' enjoyment and health (e.g. good food hygiene and a few examples of tourist illness brought on by food or hygiene), there was little mention of protecting staff health through good hygiene.

Hotel staff reported that they practice good personal hygiene at home, 'but such practices have not yet had a significant impact on other family members, particularly children' (FGD Staff01). Community practices link to the need to recognise the structural factors that support handwashing, including time to wash hands, accessible and clean facilities, and supporting handwashing to become a social norm. Changing hygiene behaviours, such as HWWS, highlights the importance of addressing both the external environment and behavioural determinants and perceptions which influence how the brain and body interact with that environment (Chittleborough *et al.* 2012; Auger & Curtis 2016). People with higher levels of education and greater economic security were perceived as having an excellent level of personal hygiene.

Respondents noted that risks associated with COVID-19 had altered handwashing practices among community members and hotel staff. Although most hotels in Labuan Bajo had closed, some had reopened and followed the government's hygiene and health procedures and protocols to ensure guests' safety.

Some hotels reported regular training of staff on food safety and hygiene. However, hygiene practices in small cruise ships require further attention as they are usually staffed by local people who lack proper training in WASH, safe water treatment and storage and waste management. People's enculturated behaviours link to the facilities and conditions required to effectively enact Law No. 18/2012, which relates to food safety in Indonesia and allows for the use of a cultural approach to ensure food remains safe. The government's requirement of compliance with hygiene regulations prioritises hygiene for tourism operations and works to ensure hygiene in hotels is maintained to safeguard hotel guests and sustain Labuan Bajo as a desirable tourism destination. However, one respondent argued that hygiene must be a health sector matter and that various parties must be involved in tackling hygiene issues in Labuan Bajo. The Ministry of Education and Tourism also reported that each hotel should have procedures and guidelines to ensure hotel cleanliness.

The data showed that the tourism sector's focus on maintaining personal hygiene primarily for the benefit of hotel guests may have changed due to COVID-19. An opportunity for hotels to assist the community to focus on upholding personal and family safety may generate long-term improvements in the community's WASH practices and the wider destination. An Inclusive WASH-at-Work programme generated from the tourism sector and supported by all levels of government could work to minimise any problematic enculturated behaviours by enhancing knowledge and awareness of effective hygiene practices within local communities.

## GEDSI issues in WASH

GEDSI is integral to the complex network of social, environmental, political and economic issues that shape tourism (Alarcon & Cole 2019) because women comprise the majority of the tourism workforce but are concentrated in the lowest paid jobs, and women perform significant unpaid work in family tourism businesses (UNWTO 2021b). Furthermore, women and girls are negatively impacted by loss of water access. Accessibility for all to tourism facilities, products and services supports human rights for people with a disability, creates an opportunity for destinations and businesses to embrace all visitors, and enhances revenues (UNWTO 2021a). Also, despite localised tensions, ethnic tourism can facilitate socio-economic and cultural development and assist in heritage preservation (Yang & Wall 2009). GEDSI includes the diverse WASH needs of tourists and locals, such as those of women and girls, people with a disability, pregnant women, the elderly, youth and children, and the ways in which these can intersect, e.g. women and girls and older women and men with a disability. The respondents in this study identified a range of key GEDSI issues for destination success.

Women and girls have specific WASH needs relating to biology (menstruation and childbirth) and the socially determined roles they perform in the home, such as maintaining cleanliness, caring for family and raising children. In Indonesia, it is usually women's responsibility to source water (Cole 2017). Women in Labuan Bajo reported that this task, is 'troublesome' due to the intermittent and irregularity of piped water supply which often arrives in the middle of the night or early morning, forcing them to 'stay up late until morning to wait for the water to come out' (IRN10, female, community midwife). Women in the community also have a higher demand for water for bathing during their period and for the care of small children, elderly or sick relatives.

Indonesia's Mid-term National Development Plan (BAPPENAS 2020), identifies women's right to WASH and states that unimproved water and sanitation hinders women in their management of households, impedes them from performing productive economic activities, and places women and girls at greater risk of sexual abuse where sanitation facilities are absent or located far from dwellings. While recognised in policy, research findings indicate that local stakeholders do not recognise the deprivations faced by women from lack of water service, water scarcity, intermittent water supply and the related increased burden of work for women.

Women require WASH access in the workplace that is female-friendly with, for instance, separate, well-lit and lockable toilets to ensure hygiene and safety (WaterAid Canada 2017). This study found that while washrooms were available for women in the workplace, many were not specific for women. Findings also indicate a limited recognition of women's menstrual health and hygiene (MHH) needs. Beyond the provision of trash cans in some hotels, women are generally expected to tend to their own MHH needs.

In public areas, WASH facilities for women are still lacking; for example, public toilets are usually shared male and female facilities, which are inconvenient to women, especially those with disabilities. 'Public toilets are only available in the market but the conditions are not good, they cannot be used for people with disabilities.' IRN11, female, community midwife.

The research shows that addressing Inclusive WASH lies in recognising human rights as a basis for transformational social change and explicitly questioning socio-cultural assumptions. The lack of attention to water constraints and related GEDSI considerations in rapid tourism development of Labuan Bajo is reflective of a broader absence of GEDSI in tourism and water studies (Cole *et al.* 2020).

People with disabilities have specific WASH access needs and remain at a disadvantage in global, regional and national efforts to achieve SDGs, including SDG6 (UN 2019). People with disabilities typically face substantial challenges to meet their WASH needs, particularly being able to use services autonomously, consistently and hygienically, with dignity and privacy, and without pain or fear of abuse (Banks *et al.* 2019). Accessible infrastructure development in all contexts is essential to the participation of persons with disabilities in all aspects of society and development.

WASH access for people with a disability falls far short of this goal in Labuan Bajo, where only one hotel provided wheelchairs for guests with a physical disability and hotels did not recognise the complex needs of, nor provide for, people with disabilities. All hotel respondents in this study stated that there were no specific toilets available for people with a disability, and the government informant confirmed that they have yet to incorporate disability criteria in their sanitation and hygiene inspection tools. In the community, while some basic assistance is available for socially vulnerable groups through the local government, people with disabilities are generally 'invisible' to government agencies when addressing tourism and within communities, 'The government and social services do not really pay attention to people with disabilities' IRN10, female.

Women and girls are often targeted as beneficiaries of WASH investments. International experience shows that involving women in WASH decision-making has led to improvements in governance, transparency, and sustainability of services (Allen *et al.* 2018). While Cole's (2017) study noted minimal chances for women to work in government in Labuan Bajo, this study noted that many women in Labuan Bajo are becoming high-ranking public officials. According to respondents, women and minority groups talk with community leaders and female staff converse openly with hotel operators. Such social changes have occurred in the past few years, however, there are not many women's groups, disability organisations or other socially marginal groups who converse with leaders and government officials to advocate on water and sanitation issues. Specifically, disability advocacy groups provide a sense that hotels and the broader tourism sector do not work to explicitly address their requirements. The benefits of ensuring GEDSI are mandatory to Inclusive WASH policy-making remain pertinent (Cole 2017).

### **Inclusive WASH and sustainable tourism**

The appeal of a tourism destination relies heavily on natural features, therefore, maintaining a pristine environment is important to support the provision of important ecosystem services such as fresh water, but also for the success of tourism in a destination. Inclusive WASH plays a vital role in sustainable tourism development, particularly concerning the community becoming actively engaged in tourism and stewardship. Currently, tourism in Labuan Bajo is heavily reliant on the Komodo Dragon marine activities and an authentic cultural experience. Inclusive WASH-at-Work programmes can work to ensure good WASH access within and surrounding tourism operations thereby improving the destination image and reputation as a clean and healthy environment for visitors. Respondents in this study associated destination image or brand with eco- and sustainable tourism and some accommodation providers stated that their hotel 'has an ecotourism concept'. Participants associate a clean environment with a high-quality tourism product and a sustainable tourism sector. Maintaining the destination's attractiveness was identified as important to meeting the vision for tourism in Labuan Bajo. International and national investors in Labuan Bajo who benefit financially from tourism do not consider the cost of water to be high in relation to their overall business costs despite a tiered tariff model whereby businesses pay more than local people. This study showed that locally, hotel staff are aware of the value of water to local communities; they highlighted the importance of making access to water more equal between hotels and community.

Recognising that maintaining or even improving the destination's image, including environmental cleanliness and appeal, is a shared stakeholder responsibility may provide opportunities for engagement and collaboration on Inclusive WASH issues from an existing base of corporate social responsibility (CSR) funds being used for environmental and social causes. Stakeholders are confident that Labuan Bajo will continue to develop due to national government priority and investment. Despite rapid infrastructure development, local respondents expressed concern that state revenue generated from Labuan Bajo is not fairly distributed among central and local government, leaving local government as a mere spectator to development.

### **Governance and collaboration**

The Drinking Water and Environmental Health Working Group (POKJA AMPL), coordinated by the Planning Office, discusses clean water and sanitation. The BP4D (Regional Planning, Development, Research and Development Agency), the Health Office, municipal water utility, Public Housing and Regional Government Office are members of this forum, all have a role in increasing access to Inclusive WASH. These forums for communication and coordination are key to STBM implementation, and the planning, implementation, monitoring and evaluation of community WASH programmes. However, it was stated that 'we rarely hold regular meetings to discuss aspects related to GEDSI-WASH. The lack of sectoral coordination and ego is holding us back here' (IRN01, male).

The Plan for Technocratic Strategies 2020–2024 (MTCE 2020b) articulates strategies to improve tourism, including building communities' capacity and tourism and creative economy institutions/organisations in communities. The Plan outlines the potential for the tourism sector to collaborate via their associations and with their communities to support improvements to destination health and environmental sanitation. In Labuan Bajo, there is potential to expand on the existing multi-stakeholder platform, POKJA AMPL, to involve the local Tourism Board and Tourism Association, who have, to date, not been included; their increased participation should be encouraged.

There are specific functional roles that only the public sector and water utility can perform, such as compliance checking of hotel operations, STBM campaign coordination, technical design and management of publicly owned water infrastructure,

and monitoring of sanitation and hygiene facilities. Clarity in stakeholders' roles and the sufficient operational capacity of public sector staff is needed for effective implementation of functional roles.

## Needs and opportunities

### Improve water management and foster stewardship

The study's results confirm rapid urban growth, a lack of planning, poor governance and decision-making are contributing to Labuan Bajo's water scarcity (Cole 2017), exacerbated by rising demand for water by tourism operations. The Labuan Bajo water supply company lacks sufficient human capacity to operate and maintain the piped water system, a feature common to utilities in low-income areas (Libey *et al.* 2020), and lacks sufficient finance for capital investment without national government support. Labuan Bajo water utility's inability to respond to long-standing issues in public water supply, regularity of service provision and expansion of the network to underserved areas suggest a need for increased public subsidy, tariff and pro-poor service review. Moreover, exploring alternative modes of water supply provision in Labuan Bajo is warranted, with stakeholders suggesting rainwater harvesting may provide a viable supply option. While there are potential applications for rainwater harvesting in Indonesia which would benefit the community (e.g. Song *et al.* 2009; Mukaromah 2020), the low annual rainfall (1,000 mm per year) (Sasongko *et al.* 2019) suggests that this will not resolve all water supply challenges in Labuan Bajo.

Relevant government agencies and the tourism industry could mitigate potential water challenges by adopting a broader water stewardship approach that addresses the economic, environmental and social dimensions of water (Frederiksen 2007; AWS 2019). From a tourism perspective, a call for 'destination stewardship' (Becken 2014) adopts a similar ambition of holistic water management to avoid conflict. For example, hotels can audit their water usage to reduce excessive use. Through such approaches, companies can positively contribute to improved Inclusive WASH water management through their individual and broader collaborative actions (Loehr *et al.* 2021).

The concept of stewardship in tourism encompasses responsibility and precaution, whereby it is in the 'host's best interest to become proactive champions, stewards and custodians of the natural environment and cultural context' (Dwyer 2018, p. 36). There is room and interest from stakeholders to foster a coordinated stewardship approach to tourism in Labuan Bajo, with community interests considered, broad participation sought and inputs from all levels of government and tourism sector associations.

### Strengthen collaboration for social cohesion and inclusion

Stakeholders identified collaboration and cooperation as key to socially inclusive engagement with all staff, with marginalised groups in communities, and to meet community Inclusive WASH requirements. Regardless of gender, stakeholders want to see an increase in training and education within the tourism sector in Labuan Bajo to realise an improvement in the operation and functionality of existing water infrastructure, and their knowledge about water hygiene.

In Labuan Bajo, the water utility and government agencies face capacity and resourcing constraints with unclear decision-making roles and responsibilities shared across jurisdictions. Participants expressed concern regarding funding and institutional constraints. 'We need central and provincial assistance because our budget here is very limited' IRN 01, male, government. Much funding came from the national government. For example, there was a plan to increase water capacity to 100 L/s, with funding from the central government, while the local government provided land and permits. For sanitation, a participant declared the budget from different offices to support STBM is limited. Institutional constraints, such as 'structural ego' and 'individualist' decision-making due to lack of coordination between stakeholders remain problematic, yet stakeholders expressed hope that collaborations between cross-sectoral and multi-level governmental actors could arise, 'We must sit together to talk about what we have to do so that there is no scapegoat between Housing Agency and PDAM' IRN 03, male, government, despite and with a national tourism development agenda that dictates the pace of private and public infrastructure investment.

Stakeholders indicated that water quality and WASH need to be guaranteed by the government to avoid the breakdown of social cohesion (i.e. the potential conflicts between community members and business) that can arise from people's perceptions of the social injustice of water markets. Conflicts can diminish the quality of everyday community life and may stifle the community members' willingness to participate in governmental programmes. Governing bodies' policies and regulations should also consider local cultural norms when planning to meet water management challenges (Wutich *et al.* 2012) and

be cognisant of their obligation to ensure Inclusive WASH access, and deliver education programmes to build awareness for proper use of facilities and hygiene behaviours.

Community and hotel respondents identified a need for improved social inclusion in WASH, especially for people with disabilities. In all situations communities and disadvantaged or marginalised groups need to be active agents in locally-led decision-making and solutions and be involved in tourism planning activities. There is a need for communication and collaboration to improve in order to ensure inputs from socially marginalised groups into WASH and destination planning that can result in practical suggestions (as outlined below).

### **Address capacity constraints**

All community, government and hotel stakeholders in Labuan Bajo identified a range of capacity gaps to implement Inclusive WASH. Building local capacity at village, district, regency and provincial levels has been an essential element to Indonesia's decentralisation policy (Law No. 22/1999) across political, fiscal, administrative and economic features (Anshari 2017). However, the rate and mechanisms by which capacity is developed is at odds with the pace of development in Labuan Bajo, with local government in particular feeling like 'spectators' to development. Financial decentralisation via direct village fiscal transfers have empowered village leaders to direct and finance local initiatives such as infrastructure, but again these have not always been accompanied by commensurate investment in human capacity.

### **Identify roles for tourism operators**

There is a need for communities and WASH service providers to work together with hotel operators to find durable and practical ways to collaborate. Community members were supportive of the idea that hotel CSR contribute to water stewardship and broader WASH services. In Labuan Bajo, there are some examples in which hotels contribute to improving Inclusive WASH practices in the community. This occurs when organisations, such as the Health Office of Manggarai Barat, approach hotels and other operators to become engaged in existing community or education programmes. Hotels and tourism operator roles can include:

- Training and education to enhance human resource capacity (e.g. in hygiene or tourism planning);
- Establishing sanitation guidelines for hotels, particularly for disability-inclusive facility design;
- Contributing to joint hygiene awareness training with government;
- Providing subsidies to disadvantaged community members for sanitation facilities;
- Providing financial support directly or through existing programmes to reduce open defaecation; and
- Improving collaboration and networking to monitoring Inclusive WASH targets and practices.

## **CONCLUSIONS**

Assessing the Inclusive WASH situation in Labuan Bajo has exposed a rapidly developing tourism destination with chronic water scarcity problems, with adverse impacts most felt by the community, particularly women. The increasing and unchecked water demand from a rapidly growing tourism industry is competing with the freshwater needs of local communities to the extent that service levels to local people have worsened as tourism expands. While all stakeholders support the push to become one of Indonesia's 'super-premium' tourism destinations, there are growing tensions in the community over the inequitable distribution and poor service levels provided by the local water utility. A combination of top-down development planning, local capacity limitations, lack of clarity of institutional responsibilities and inadequate tariff or public subsidisation of the utility have contributed to rising tensions. There is a need to enhance existing governance arrangements and collaborative planning mechanisms to ensure multiple stakeholders are engaged to ensure equitable Inclusive WASH access in emerging water-scarce tourism destinations such as Labuan Bajo.

Solutions to overcome Labuan Bajo's Inclusive WASH challenges must be locally-driven, build local capacity and open pathways to collaboration and engagement with decision-makers in the national and local governments and private tourism sector. This study suggests an Inclusive WASH-at-Work framework (Figure 1) which seeks to encourage hotels to undertake water stewardship assessments and Inclusive WASH audits, processes that can improve internal efficiencies and contribute to wider destination attractiveness and return business. The framework supports all stakeholders in identifying and solving challenges, and thereby working towards more equitable distribution of tourism's benefits and costs and the achievement of SDG6.

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## AUTHOR CONTRIBUTION STATEMENT

N.M.U.D. and B.P. contributed to the conceptualisation of the article, data analysis, writing the original draft and reviewing the article. A.N. contributed to the data analysis, translation, writing the original draft and reviewing the article. J.L. contributed to the data analysis and M.K. contributed to the writing of the original draft. S.V. and W.H. contributed to the writing of the original draft and reviewing the article. P.d.R., M.A.T.N. and J.M.M. contributed to the data collection and verification. H.J. contributed to funding acquisition, data analysis, supervision and revision of the article.

## DECLARATION OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

## DATA AVAILABILITY STATEMENT

All relevant data are included in the paper or its Supplementary Information.

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