

TOURIST ATTITUDES TOWARDS WATER USE IN THE DEVELOPING WORLD: A COMPARATIVE ANALYSIS

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Highlights

1. Water use amongst tourists visiting developing countries is reviewed in The Dominican Republic, Zanzibar and the Gambia
2. The green at home-not on holiday proposition is evaluated through water consumption
3. Issues of water inequality are examined to demonstrate the need to adjust tourist attitudes and behaviour where water use cannot easily be offset

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Abstract:

This paper examines tourists' attitudes towards water use within a developing world context. The paper uses a comparative research methodology with survey data derived from interviews with tourists in Zanzibar, The Gambia and Dominican Republic. Unsustainable water use, accentuated by climate change, threatens access to water as a basic human right and potentially forms a source of conflict between tourists, tourism businesses, residents and the environment. The results emphasise the gap between tourists' awareness and the actual nature and scale of their impact on water supplies in the destinations. Tourists' unawareness of their impact on the environment becomes an added indicator of the growing unsustainability in certain destinations, and needs to be considered alongside the longer-term scenarios of climate change.

Key words: water use; comparative analysis; developing countries; tourists' attitudes; tourists' behaviors

1.0 INTRODUCTION

This paper examines the interconnections between water use by tourists and their awareness and behaviour towards problems facing destinations in the developing world in terms of water scarcity and access to drinking water. The paper is based on a comparative analysis of tourist attitudes towards water consumption and sustainability in both their home environment and whilst on holiday, focusing on the growing research agenda associated with water equity (Whitely, Ingram & Perry, 2008). As Hadjikakou, Chenoweth & Miller (2013) argue, there has been an oscillating interest in water issues in the wider sustainability debates due to the focus on carbon reduction and energy issues. Water equity refers to the UN's right to water and sanitation and, in the context of tourism, is considered as "Development that does not infringe upon or take precedence over the right to water of communities in destinations for essential personal, domestic and livelihood needs" (Tourism Concern, 2012: 5).

The principle is unambiguous in ensuring access to water for communities alongside the operation of tourism, and reflects the growing application of wider social science areas of research structured around social equity in local communities and sustainability (Cole & Morgan 2011; Cole 2012). Water equity also connects with many wider issues of tourism and development, notably the debate over how western tourism interests exploit the developing world, as highlighted by Britton (1982, 1991). This political economy approach acts as a means to understand, theorise and rationalise the tourism economies built around mass coastal tourism in fragile and vulnerable coastal tourism communities, particularly in Small Island Developing States (SIDS) (UNWTO 2012). Whilst it is not the purpose of this paper to adopt a political economy perspective, it is an important context to recognise as it also has a clear bearing on many of the debates associated with tourism and sustainability, especially in relation to the control of resources, access to these resources by local communities and their use by resource-intensive tourism interests (i.e. businesses and entrepreneurs).

Although the issue of water consumption is not new within environmental management and tourism research, developing a comparative analysis to the issue across multiple destinations is a novel methodology to advance knowledge beyond single case studies. This paper focuses on research into tourists' attitudes to water equity in three developing country settings – Zanzibar, the Gambia, and Dominican Republic. The paper is not only embedded in the growing sustainability paradigm in which issues of water access and equity have emerged as dominant research themes, but assesses the gap between attitudes towards sustainability in the daily life of consumers and the extent to which these values can be translated into action within a tourism setting. The paper extends the study by Miller, Rathouse, Scarles, Holmes and Tribe (2010) using a comparative research methodology applied to the developing world settings, namely Zanzibar, the Gambia and Dominican Republic.

2.0 THE WATER-TOURISM RESEARCH NEXUS REVIEWED

Research on water management and tourism in the last five years has focused on consumer behaviour and destination characteristics on islands, dry and arid areas, high seasonal patterns and tourism induced water over-consumption (Gössling, Peeters, Hall, Ceron,

Dubois & Lehmann, 2012; Rico-Amoroza, Olcina-Cantosa & Sauri, 2009; Tortella & Tirado, 2011). However, as research on water and tourism has evolved, it has become more inclusive, holistic and less abstract as the agenda has moved towards issues of people and the impact on their lives. The environment as a wider sustainability theme has also developed, epitomized by environmental sustainability (e.g. Gössling et al., 2012; Cole 2012; Tourism Concern, 2012). There is also a growing interest in linking this agenda to the tourism and climate change nexus (Gössling, 2006; Gössling et al., 2012), with Hadjikakou et al., (2013) arguing that climate change could be the impetus needed for action on sustainability issues such as water.

Water as an issue epitomises the global-local debates in sustainability, since water scarcity is a local issue but also a global concern. The current situation for many small island destinations is a vicious circle of water equity issues as summarized in Figure 1, although an in-depth review of these issues is provided by Gössling et al., (2012). The literature on the tourism-water nexus frequently emphasises the ability of tourism to create unsustainable patterns of water consumption as a recurring factor in many tourist destinations, as illustrated by the global review by Gössling et al., (2012). Research embedded in a political ecology approach has addressed the subject by examining the perspectives of stakeholders (Cole, 2012), namely tourists, businesses and government. More radical approaches to the water-tourism nexus argue that changes in water management require a fundamental change in consumer behaviour (Tortella & Tirado, 2011).

Please insert Figure 1 about here

Given that incremental change is unlikely to amend consumer behaviour through adaptive or mitigation measures, a new model of tourism management is required to alter the current trajectory towards unsustainable development. As Rogerson et al (2010) argue, there needs to be a more fundamental understanding of how consumer behaviour can be changed, particularly in terms of daily behaviour. Some of the key findings of the numerous studies of the relationship between consumer attitudes, behaviour and the type of policy needed to address environmental concerns is outlined in Figure 2. Figure 2 shows that in the wider consumer behaviour literature, these issues need to be framed within the context

of everyday lives and behaviour which we pursue in this paper. According to Gössling et al., (2012), global water use is increasing mainly due to the fast growing population and economies in developing countries, which impacts upon their lifestyles and the expansion of irrigated agriculture to accommodate the food needs of a growing population. The awareness of water availability in destinations is heightened by global attention on environmental issues associated with climate change, carbon footprinting and scarcity of natural resources (Hadjikakou et al., 2013). A further strand of research in the emerging water-tourism nexus has also been the development of conflict between tourism and residents in some parts of the Mediterranean basin (Eurostat, 2009) given that mass tourism is a highly seasonal activity located in fragile environments characterised by water scarcity during the peak holiday season.

Figure 2 here

These pressures are directly connected to global warming and sea level rise, which could also potentially accentuate salt-water intrusion (Cole 2012; Gössling, 2001). The implications are that the local population could lose its capability to access fresh and clean water (Cole, 2012), which creates inequity in the water-tourism relationship borne by residents. The ability of the tourism sector with its power and control of the political system and indirectly, the resource base, means that the local population are not necessarily the main beneficiaries in the allocation of scarce resources despite water being a basic human need. The perpetuation of such inequities illustrates the power base of the corporate interests and political elites seeking to promote economic development through tourism. The relationship between water management and tourism consumption thus becomes a significant political and environmental issue. There are many cases which demonstrate that the water supply has also been over-used by tourism interests.

The direct consequences of tourism generated water over-consumption are salt-water intrusion, land subsidence and deteriorating water quality (Gössling, et al., 2012). But even more profoundly, water is a scarce resource in destinations that is often taken away from residents through a trade-off politically by committing to a path often involving unsustainable tourism development in the case of water. Many Small Island Developing

States (SIDS) and other small islands face these problems such as Zanzibar (Gössling, 2001), Mallorca (Essex et al. 2004) and Bali (Cole, 2012). As Cole (2012) has demonstrated, local communities are usually the first ones who feel the impact of water over-consumption from tourism activities, as tourism-related consumption in the peak season over-stresses the water supply, making it difficult to achieve an equal water distribution between all the tourism stakeholders in the high season.

Water consumption and its link with tourism has been characterised by two main approaches associated with tourism induced water use (Lehman, 2009); the first is *consumptive versus non-consumptive water use* (Bogdanovicz & Martinac, 2007; Gössling, 2001) and secondly, the *direct versus indirect water use* (Gössling, 2001). In many settings, water is positioned as an attraction and an integral part of the tourism experience, as a visual backdrop which enhances the attractiveness of the destination as a non-consumptive water use (Bogdanovitz & Martinac, 2007). The water consumed by tourist activities is *consumptive water* for landscaping and irrigation, but also in food preparation, and the water which individual tourists use for washing, toilet flushing and similar activities. An alternative classification of tourism water use divides it into *direct and indirect* (i.e. water used in the supply chain) uses (Gössling, 2001, Gössling, 2006), depending on who controls the water consumption.

Direct water use includes activities controlled by the individual tourists (i.e. washing, bathing, toilet flushing and the frequency of towel changing which has a direct impact on towel washing). Indirect water use is less controllable by the individual tourists. It also includes the water used for the creation of the attractions and tourism activities (Lehman, 2009), such as water parks, spa facilities, swimming pools and golf courses irrigation (Rico-Amoroza, Olcina-Cantosa & Sauri, 2009). Indirect water use also includes water used for food preparation and cleaning. Indirect water consumption is clearly relevant for water management. However, its consumption is less controllable by the individual tourists (Gössling et al., 2012) and difficult to quantify.

2.1 *Water scarcity, destination characteristics and tourist water use*

Tourism water consumption in national water surveys generally is seen as a minor issue, often estimated at less than one percentage of total use (Gössling *et al.*, 2012). As a result, tourism induced water consumption has been given little attention in both policy and academic research (Eurostat, 2009; Tortella & Tirado, 2011). Crase, Lin and O'Keefe (2010) argue that there is a virtual absence of tourism in the water-policy agenda in Australia, attributing it mainly to the heterogeneity of the tourism sector. Water demand is well documented in other industries, especially in irrigation as it is estimated that 70 % of all water consumption is agriculture-related. Indeed, Cazcarro, Hoekstra & Choliz (2014) propose that the water-saving policy of tourism in Spain needs to include the efficiency of agricultural water usage which is the main consumer of water. Agricultural water usage should be an important part of tourism policy and planning because more than 50 million tourists visit Spain annually and this constitutes a colossal water footprint for tourism but is rarely featured as a part of a water-saving tourism policy. Gössling *et al.*, (2012) argued that the problem in reporting water consumption in tourism is that organisations focus on average use which masks the regional and seasonal problem. However, on small islands such as Cyprus and Malta, the intensity of tourism induced water consumption is very evident. For example, in Malta, the consumption by tourism-related activities is 7.3 % and in Cyprus 4.8 % (Gössling *et al.*, 2012).

The marginalisation in both research and national statistics of tourist water use contributes to water mismanagement and causes both social and environmental unsustainability (Cole, 2012; Gössling, 2001; Gössling *et al.* 2012). Crase, Lin and O'Keefe (2010) argue that although 'water-using behaviour' of tourists and non-tourists differs considerably, hardly any behavioural analysis has been conducted in order to address this issue, implying that the responsiveness of tourists to a range of triggers and incentives is almost unknown. Inequality in water consumption between tourists and the local population is an ever-increasing problem and, whatever the complexity of quantifying water consumption by the tourism sector, tourist water consumption is between two and three times the local water demand in developed countries (Garcia and Servera, 2003) and up to 15 times the water consumption in developing countries (Gössling, 2001). It has been estimated by Tourism Concern that local residents average local water consumption is around 20 litres per day. However, the figures for Goa suggest that while local residents consume 14 litres per person

per day, the tourists consume, on average, 1,785 litres of water per day (Tourism Concern, 2012).

Tourism research on water consumption has previously set out to forecast the possible consequences of intensive water use in tourism areas. Research is usually focused on consumptive water use. Essex, Kent & Newnham (2004), Kent, Newnham & Essex (2002) and Tortella & Tirado (2011) focused on water usage in Mallorca (Balearic Islands), while Rico-Amorosa, Olcina-Cantosa & Sauri (2009) examined Benidorm and the Alicante Coast. Kavanagh (2002) focused on tourism-induced water consumption in New South Wales and Queensland, which are areas with intensive tourism development. Arbués, Garcia-Valiñas, & Martínez-Espiñeira (2003) argued that demand could be addressed through the strategy of pricing of water which can pursue more equity and allocative efficiency in terms of water demand. Due to the challenges which tourism seasonality adds to water equity, the additional costs of water consumption need to be levied on the tourist in an allocative efficiency model, in this case via the tourism supplier. Cazcarro, Hoekstra & Cholz (2014) argue that incentive policies in the form of higher water prices are used in Spain in order to promote good practice and follow the recommendations of the EU Water Framework Directive, but the effectiveness of such a policy framework is questionable due to its inadequate implementation.

Peak pricing of water consumption is regarded as not necessarily a fair proposition as it does little to change the status quo. This is because any additional consumption puts great pressure on local consumption. Cullen, Dakers & Meyer-Hubert (2004) argue in favour of a user-pays principle and marginal cost pricing which singles out tourism industries for higher water charges in high tourism density settings in New Zealand. Gössling (2001) argued that a monthly water tax was introduced to hotels and guesthouses in Zanzibar. However, the tax was set at a flat rate regardless of the consumption meaning that it was not aligned with a specific environmental problem which the tax intended to penalise to ameliorate the negative effects (Cazcarro et al. 2014). Consequently, tourism businesses were not encouraged to reduce their water consumption. Crase, Lin and O'Keefe (2010) argue that there is a lack of technical information between the various dimensions of water consumption and tourism limiting the knowledge base for policy makers. Consequently, the

pricing policy for water management needs to be empirically tested and modelled (Cashmann & Moore, 2012, Cazcarro, et.al. 2014) before it is implemented. A political ecology perspective might argue that these tools designed to manage existing resources fails to recognise the operational cost of water in comparison with other cost factors. Consequently, businesses in developing countries would most likely be able to cope with relatively high pricing strategies given their superior purchasing power compared to residents.

2.2 *Tourism behaviour and water management*

Gössling (2001) argued that there is too little published evidence that analyses the relationship between direct and indirect use of water and the implications for different types of destination accommodation. Addressing Gössling's (2001) concern, Rico-Amorosa, Olcina-Cantosa & Sauri (2009) examined different spatial models of tourism development in order to analyse the relationship between tourism and water consumption. Surprisingly, their study argued that tourist destinations with a high density of large hotels in a concentrated area have a lower water consumption rate than those with a lower density with a dispersed pattern and form. This finding was explained because the lower density settlements contain facilities characterised by high water consumption, such as golf courses, private swimming pools and spa facilities. Low-density resort hotels normally have large landscaped gardens which require large volumes of water for irrigation, which can comprise up to 50 % of total water consumption (Gössling, 2001).

Rico-Amorosa *et al.* (2009) argued that in high density Benidorm, water consumption is 140-600 litres per tourist which in comparison with the more luxurious low-density establishments where water consumption per person can reach 6,000 litres (Gössling *et al.*, 2012). High-density mass tourism centres thus appear to be less problematic for water equity and consumption than low-density ones. One importance consideration at this juncture is how much water is consumed by the resort relative to what is available, combined with the total tourist numbers. Tortella & Tirado (2011) found that hotels which are affiliated to small chains consume less water due to the higher direct costs, whereas water costs are a smaller item of overall operating costs in larger chain hotels where water

consumption is approximately worth 4 % of costs. Tortella & Tirado (2011) estimated that, on average, tourists would use more water when they are on holidays than when they are at home.

The type of boarding by tourists also influences water consumption, where all-inclusive hotels consume more water, corresponding with a recent growth in popularity of this type of accommodation. Higher water consumption in all-inclusive hotels is only partly a function of tourists attitude, conditioned by the all-inclusive price implying that tourists are entitled to consume all that is on offer; the largest share of consumption emanates from the hotel through irrigation, (Cruse et.al., 2010; Tortella & Tirado, 2011). In addition, water consumption also depends on the type of activities which tourists undertake whilst on holiday (Gössling, Garrod, Aall, Hille & Peeters, 2011). For example, if there is a golf facility, water consumption almost doubles (Tortella & Tirado, 2011). Scott, Peeters & Gössling (2010) found that, in the US and EU, more than 3,000 new golf courses have been built, mostly in regions of water scarcity and there are also plans to add more golf courses. Paradoxically, adding more golf courses is in line with many destinations' plans to alleviate seasonality and diversify the tourism offer.

Against these trends, the volume of tourists is increasing year by year in many developing countries and its impact on sustainability is likely to be negative (Gössling, 2001). This effect is often accentuated by tourists who are not properly informed about water equity issues (Arbués *et al.*, 2003). Although raising awareness features heavily in campaigns in destinations, it is also argued that the campaigns of raising awareness have very little effect on consumers' behaviour (Boon, Fluker & Wilson, 2008). Miller *et al.* (2010) reported on very low awareness about global environmental issues among the UK travelling public, who demonstrated greater awareness of tangible issues (e.g. litter) than intangible impacts such as global warming and water equity. The UK public was generally more focused on environmental issues when at home than when they are on holiday, presenting a "green on balance" argument based on the reciprocity approach.

The population can thus "learn" to act less responsibly towards the environment during their holidays if they have been responsible while they were at home (Miller *et al.*, 2010, p. 634).

Yet tourists want to “treat themselves” whilst on holiday and so environmental issues are not considered as important while enjoying a holiday. There is a low level of connection between general understanding about environmental issues and their impact on tourism destinations. Consequently, tourists in general are resistant towards behavioural change related to environmental issues whilst on holiday. Indeed, Cole (2012) applying a political ecology approach, expanded upon Miller *et al.*'s (2010) argument that there is a level of ignorance related to water management which can be observed by all the stakeholders (i.e. tourists, hotel and restaurant sector and government).

Therefore, from the literature review, it is apparent that tourists' awareness, understanding and behaviour relating to emerging environmental problems in destination areas, such as water supply, quality and equity, affect the ability of tourist destinations to formulate appropriate management strategies to ameliorate these issues. First, pro-environmental tourists have a low awareness of their consumptive behaviour on the tourist destination (Miller *et al.* 2010). Second, tourists are not properly informed about water issues (Arubes *et al.* 2003). Third, tourists use on average more water when on holiday (Tortella and Tirado 2011). These topics lend themselves well to further exploration in a comparative setting so as to assess the validity of existing research beyond the confines of single sample studies and case studies of individual destinations. Prior to exploring these issues, it is pertinent to focus on the use of a comparative methodology to develop these themes.

2.3 *Comparative research methodologies in tourism*

Collier (1993) describes comparative research methodologies as fundamental analytical tools which bring into focus similarities and contrasts among cases, playing a central role in concept-formation. According to Pearce (2012), the main motivation for using comparative research methodologies in tourism is the discovery of similarities and differences in phenomenon. Baum (1999) argues that comparative approaches are widely applied in tourism research whether directly or implicitly, though these have not necessarily led to a growth in understanding, since they are rarely used in studies of the tourism-environment-management nexus. A comparative approach has an important role in the development of generalisations, which may be applied to model testing and the application to other contexts to develop an understanding of such phenomenon beyond case study settings (Pearce,

2012). In fact May (1993) argued that such an approach can directly assist in theory development. Comparison should be used to extract insights about the causal relationships responsible for the observed similarities and differences (Azarian, 2011) or to highlight how to further investigate these issues. In this sense, a multi-destination analysis in a developing country context proposed here, will assist in understanding the extent to which tourist behaviour, irrespective of nationality, displays similar or different behaviours using a common research tool administered in a uniform manner to derive a consistent set of data as opposed to a single population in an origin country. The use of comparative research methodologies is not without their problems, termed “manageability” by Pearce (2012). These problems are most notable in terms of the cost and logistics of multiple data collection simultaneously for consistency across different destinations.

Comparative tourism research studies also require very detailed briefing and management of the research process to ensure consistent application of the survey along with a harmonised approach to interviewing, sampling and focus. Some of the weaknesses of comparative research are that the complexity and potential depth of the findings are reduced due to the limited space which many journal articles allocate to publishing findings. This issue means that the pursuit of explanation and meaning by comparative researchers may not necessarily be fully comprehended due to the need for brevity and selectivity in research findings. For this reason, understanding the scope and background to the research is important as is the breadth of the phenomena under consideration (Table 1). As a consequence, Table 1 is a natural point at which to outline the methodology employed, its rationale and its application as well as background issues for each destination in a comparative setting.

Please insert Table 1 about here

3.0 Methodology

The study was primarily developed as a partnership project with a UK-based charity and lobbying group specialising in tourism equity issues (Tourism Concern), who were pioneering a research programme of work targeted at the tourism industry and policy-makers on water equity issues which culminated in its influential Water Equity report (Tourism Concern

2012). Existing research by Gössling *et al.* (2012) and Tourism Concern identified a range of destinations in the developing world (the global South) that were suffering acute problems of water equity. From the variety of destinations identified, three destinations were selected: one from the Caribbean (Dominican Republic), one from West Africa (The Gambia), and one from East Africa (Zanzibar). These were selected as comparative destinations where coastal tourism resort development was the predominant mode of production. It was also important to ensure that access to a target population was possible without issues of safety for researchers.

Whilst a wider range of destinations across Asia would have been desirable, the most obvious example of Goa was dismissed due to the local Tourism Concern group wishing to pursue their own local research agenda (Tourism Concern, 2012). Cost and the logistics of undertaking a multi-country study and needing to work collaboratively with locations where Tourism Concern had a presence and agreement with their local office to pursue this research were key considerations. The survey tool was developed in July 2011 by the research team in conjunction with assistance and advice from Tourism Concern researchers in each destination to assess appropriate questions and feasibility of implementing it. Whilst the collaboration with Tourism Concern was an invaluable gateway to the research topic, the research team maintained their intellectual integrity and impartiality by devising the research survey after a thorough review of the literature as opposed to reliance upon the data supplied by Tourism Concern.

Maintaining both a distance and impartiality remains the key challenge that many forms of collaborative research can face when pressure can be brought to bear on the survey instrument and its contents. The survey comprised 29 questions completed by interviewers on a face-to-face basis and a pilot survey in the UK concluded that around 20-30 minutes was required to complete each survey. Whilst this approach is far more time-consuming than self-completion surveys, the issues of consistency and respondents having an opportunity to ask if they did not understand a specific question were deemed more important than deriving a slightly larger sample size that a self-completion survey may yield. A total of 315 questionnaires were completed, with a desire to derive broadly equal samples

from each destination. Among the 29 questions, the focus was on links to the key issues on sustainability and how the issue of water equity could be investigated¹.

The research team had previously worked on water issues in destinations and developed six key sections to the survey instrument using scaling questions for attitudes which are a well-established tool for attitudinal measurement. The initial section of the survey asked respondents about their attitudes to sustainability at home, their behaviour and how that applied on holiday. The range of sustainability measures used in destinations was investigated alongside the use of water and their perception of water at the destination (personal and resident use). A section on possible policy measures to improve the balance of tourist-resident water use was introduced to address the equity issue building on the existing research on policy effectiveness amongst tourists by Miller *et al.* (2010). The survey instrument concluded by collecting the source of accommodation respondents were staying at and socio-demographic data alongside tourist origin. To execute the survey, a team of researchers were employed in each destination and the researchers were trained by Tourism Concern using a briefing note from the research team.

The teams in each destination were managed by the Tourism Concern representative who also undertook quality checks of the on-going surveys to ensure consistency across the researchers. The sampling and research protocols were outlined, including the need to gain informed consent to participate in the interviews and the opportunity to end the interview at any point in time. The use of a convenience sampling tool was used, whereby interviewers were distributed across each destination and tourists were asked if they were willing to participate in the survey. Unfortunately, it was impossible to adhere to the hypothetical model of comparative research methodologies outlined by Pearce (2012) with the research undertaken simultaneously in each destination. The research was phased in

¹ The rationale for the survey question style and format was informed by previous studies of consumer attitudes to the environment reviewed in Rogerson *et al.* (2010) which provided a comprehensive review of the literature and approaches used. The desire to focus on the everyday experiences of environmental issues was inherent in the approach adopted which informed the methodology, looking at environmental behaviour at home and then on holiday as a comparative element. The focus on the questions was on the daily activities and behaviour, which, in the main was reflected in most question styles. Only very occasionally were non-daily issues (e.g. planting drought resistant plants) introduced as this was seen as a measure of non-daily behaviour to help control for respondent bias in selecting the same answer to every component of each question. Following the lead in Rogerson *et al.*'s (2010) survey, the language and style of questioning was adopted as a means of eliciting information on daily behaviour.

over a three-month period due to the logistics and to coincide with other water equity research underway in each destination with local communities. Although the survey period might have had a slight seasonal effect on the results, there is no benchmark against which to test the effect of this timing on the results.

A bi-lingual team of interviewers fluent in English, French and Spanish ensured that a mix of English-speaking and non-English speaking tourists were selected along with the spacing of interviews over a four-week period in each destination so as to not simply target one cohort of tourists on a two-week holiday to the destination. Interviewers targeted international tourists at a number of popular tourism sites and sights (see Table 1) as well as at their accommodation during their stay in the destination². In most cases, the tourists were staying at beach resorts and so as far as possible, a comparable population in terms of motivation and holiday characteristics were selected. The surveys were coded and input into SPSS to facilitate analysis. Wherever possible, the research has sought to draw out the similarities and differences between the findings by destination so as to understand how the findings relate to other studies on water equity.

4.0 Results

4.1 Characteristics of respondents

Within the sample of 315 respondents, 100 emanated from Dominican Republic, 100 from the Gambia and 115 from Zanzibar as shown in Table 1. Whilst critics may point to the small sample size of each sample, they do permit broad comparisons to be made. A broadly equal representation of males (46.3 %) and females (47.9 %) was obtained (5.7 % did not provide information on gender). The participation of tourists across the three samples was truly international, with the main representations being from the USA (50; 15.9 %); Italy (46; 14.6 %), the UK (29; 9.2 %), Canada (19; 6.0 %), the Netherlands (18; 5.7 %) and Germany (17; 5.4 %). A total of 70.5 % of the sample were in the higher socio-economic groups (A: higher managerial professions, B: intermediate managerial professions, C1: junior managerial professions) based on standard occupational classifications used within market research.

² The approach to the survey was a convenience sample and researchers did not record drop out rates or non-responses. This may have been instrumental in assessing response rates.

About two-thirds of the total sample (66.7 %) were aged between 19 and 44 and were travelling as a couple (56 %). The majority were staying in some form of serviced accommodation (hotel, 74 % and guest house, 11.4 %) of high quality (75.3 % were staying in three- to five-star accommodation). Just over half of the sample was on their first visit to the destination (61.9 %), which would have limited direct experience of the local conditions. However, a further 34.7 % were on their second or more visit, including 11.8 % who had visited the destination more than six times, and so would be more knowledgeable about local conditions. The Gambia received the highest proportion of repeat tourists (55 % more than two visits), in comparison with Dominican Republic (40 %) and Zanzibar (12.2 %). The composition of the sample indicates a reasonably young and affluent group of tourists staying in high quality accommodation.

4.2 Awareness of environmental sustainability issues at home and on holiday

Actions in the home: Across all three destinations, the majority of respondents (60 %; range within the three destinations were 57% (lowest) to 62 % (highest)) indicated that they were aware of environmental sustainability at home, but with limited involvement. Between one-quarter and one-third of respondents in each destination described themselves as being highly pro-environmentally aware and active at home (28 %; range 27-29 %) (see Table 2). Environmental actions within the home tended to be dominated by easily implemented options, such as recycling waste (78.4 %; range 69-84 %), using energy-saving light-bulbs (77.5 %; range 69-83 %), and having showers rather than baths (77.5 %; range 74-79 %). Whilst the use of showers may demonstrate convenience behaviour rather than a conscious decision to save water at home, it does illustrate the general acceptability of shower provision only in tourist accommodation.

Please insert Table 2 about here

A second group of actions in the home was also evident consisting of conventional measures, such as practising energy conservation (54.6 %; range 46-63 %), water conservation (42.2 %; range 31-62 %), purchasing products made from recycled materials (41.3 %; range 33-51 %), and using public transport (29.8 %; range 20-39 %). Other options, such as using waste water in the garden (22.5 %; range 10-38 %) and using drought-resistant

plants (6.4 %; range 4.3-15 %), were less commonly adopted. The main motivations for adopting these practices in the home across the three destinations, albeit with different levels of importance, were to benefit the environment, to save money, and to contribute to health and well-being (see Table 3). Similarly, the most important factors for not adopting sustainability measures in the home were a combination of time, costs, inconvenience, savings that were not really worthwhile and lack of understanding (see Table 3).

Please insert Table 3 about here

Actions on holiday: A total of 60.9 % of respondents claimed to have the same level of commitment to sustainability on holiday as at home. About one-fifth felt that they were less committed to sustainability whilst on holiday (23.2 %). A small proportion (9.2 %) felt that they were more committed to sustainability on holiday. However, on cross-referencing these responses with other questions, a slightly different picture of tourists' environmental responsibility on holiday emerged. For example, the proportion of respondents stating highly pro-environmental attitudes and actions whilst on holiday was about 9% lower than that stated at home (see Table 4). The proportion expressing limited knowledge and limited sustainable behaviour on holiday was 7.3 % points higher than at home. The sample visiting the Dominican Republic demonstrated this reduced responsibility whilst on holiday most strongly. One interpretation of this apparent difference appears to be that tourists are giving their environmental responsibility a rest while on holiday and adopting the behavioural traits of 'green on balance' as recognised in other studies.

Table 4 about here

Tourists seem to be displaying complex double standards during their holiday. While many are less committed to environmental responsibility whilst on holiday, they still nevertheless expect high environmental standards and practices from their hosts. Table 4 indicates the importance of various sustainability aspects of the holiday experience for the respondents. Considerable importance was attached by the tourists to using public transport (range 51.0-53.9 %), to tourism businesses having a clear environmental policy (range 46-55 %) and to a willingness to pay a premium if environmental policies were implemented by tourism businesses (range 30-56 %). However, most importance was attached to issues related to water, especially when it affected the quality of their experience. Over 80 % of respondents

in Dominican Republic and Gambia and 70 % of respondents in Zanzibar stated that having a guaranteed supply of water was very important or important to their holiday experience. These aspects were more important than having access to a swimming pool (19-59 %) or having well-irrigated landscaping/golf courses (13-16 %).

Please insert Table 5 about here

4.3 Awareness of water supply and conservation issues on holiday

The extent to which tourists were aware of problems with the supply of water in these destinations and were willing to practice water conservation to ameliorate these issues display a second level of double standards on behalf of their responsibility for achieving sustainable tourism. About two-fifths of respondents were aware of water supply and conservation issues at their destination (40.6 %). Awareness was highest in Zanzibar (42.6 %), followed by the Gambia (41 %) and Dominican Republic (38 %). Unsurprisingly, the two key issues related to water were limited supplies (49 responses), which affected personal hygiene and health, and poor quality (45 responses), including saline intrusion, bacteria contamination and pollution. Some respondents reported feeling guilty in using water, as they feared that locals might be denied supplies as a consequence. There were also concerns about the high cost of bottled water and travel within the destination being restricted to places where water could be purchased. Only 30.5 % of tourists had noticed any attempts to save water in their accommodation or destination, with the majority being in Zanzibar (41.7 %). Only 30 % of tourists to the Gambia and 18 % of tourists in Dominican Republic had made observations about evidence of water conservation in these destinations.

For the entire sample, nearly three-fifths (60.9 %) had not noticed any attempts to conserve water resources. The relatively low level of awareness might be related to the high proportion of the tourists visiting destinations for the first time, who would not have experienced the local conditions previously. Indeed, 24.8 % of tourists had obtained their knowledge about water in the destination from their own observations and experience, rather than from travel advice (15.6 %) or from travel books and publication (10.5 %). The main attempts to save water noted by the respondents were towels being changed less frequently (17 responses), notices requesting responsible use of water (13 responses),

personal attempts to avoid wastage (10 responses), use of “grey” water (10 responses), and bed linen changed less frequently (8 responses). There are also other interpretations of this lack of awareness. First, even if the respondents try to reduce the frequency of their towels being changed by hanging them up, often cleaners may replace them out of habit or lack of training, which mitigate against tourists’ attempts to save water. Second, this low level of awareness might also be a reflection that environmental actions by businesses are simply not readily apparent to tourists because they are implemented ‘behind the scenes’, such as in food preparation, irrigation and laundry areas. Similarly, the majority of water consumption within tourist destinations relates to food (agriculture and preparation), garden-related activity and laundry (Hadjikakou *et al.*, 2013), which tourists are not able to influence directly through their behaviour. Instead, focus needs to be placed on influencing the practices of food-related production rather than the tourists. Redefining the nature of the tourism product and experience from a supply perspective would make significant changes to the environmental management of water resources in popular tourist areas.

The perception of the tourists is that they consume marginally more water on holiday than the local residents. While 53.3 % of the residents were estimated to consume less than 20 litres per person per day, 49.1 % of tourists were estimated to consume between 21-100 litres per person per day. Using the midpoints of the consumption categories, the perception of tourists is that they consume about 42.2 litres of water per day, while residents consume 24.87 litres per day. Showers were preferred to baths. The results indicated a slight decrease in the frequency of baths (0.08 per day at home to 0.06 per day on holiday) and a slight increase in the number of showers and baths taken on holiday (1.337 per day at home to 1.504 per day on holiday) (see Table 6).

Please insert Table 6 about here

However, these data are based on perceptions. The reality, based on previous research, would indicate that these figures are likely to be a gross under-estimate (see for instance Gossling, 2001; Garcia & Servera, 2003; Tortella & Tirado, 2011; Tourism Concern, 2012). The majority of tourists, regardless of their origin, have the perception that they consume up to 100 litres of water per day. However, the water footprint of households in the UK is

estimated to be around 150 litres of water per person for daily uses. In Australia, this figure is 500 litres and up to 570 litres in the USA (United Nations Development Programme, 2006). Gössling *et al.* (2012) illustrate that tourist consumption of water ranges from between 80-2,000 litres a day when on holiday. It is evident that tourists have grossly underestimated their water footprint and this perception is exaggerated further when other uses, such as garden watering and swimming pools, are factored in. The need for tourist education and awareness of these issues might help to improve the tourists' own understanding of their impacts in destination areas and stimulate greater responsibility for their water resource use.

Respondents were also asked to judge the acceptability of potential water policies that might be introduced in the future. The rankings of these options for each destination were different. Tourists to Dominican Republic tended to favour financial contributions from the tourists to invest in better infrastructure for water supply and quality (Eco tax, 70 %; voluntary donations, 65 %, increased cost of holiday, 41 %) rather than actions that might affect the holiday experience (restrictions on baths and showers, 29 %; reduced availability of swimming pools, 32 %; reduced laundry, 53 %). A similar pattern was evident in the responses from tourists to the Gambia, who tended to favour financial contributions from the tourists to invest in better infrastructure for water supply and quality (Eco tax, 59 %; voluntary donations, 54 %; increased cost of holiday, 40 %) rather than actions that might affect the holiday experience (restrictions on baths and showers, 48 %; reduced availability of swimming pools, 45 %; reduced laundry, 77 %). In Zanzibar, greater acceptability of restrictions on water use was evident (reduced laundry, 79 %; reduced availability of swimming pools, 73 %; restrictions on baths and showers, 57 %) rather than financial contributions to fund infrastructural investment (voluntary donations, 65 %; Eco tax, 52 %; increased cost of holiday, 50 %). The reason for this difference is unknown, although the majority of tourists perceived extra financial contributions to resolve the issue rather than personal actions to reduce water use. The dominant attitudes towards potential solutions perpetuates the 'green on balance' trait.

The effect of such restrictive water usage policies on the tourists' decision to return to the destination appears to be negligible. Nearly three-quarters of the respondents (72.4 %)

stated that they would return to their destination irrespective of restrictions or increased costs (the Gambia 83 %; Dominican Republic 69 % and Zanzibar 66 %). Only 7.6 % stated that they would not return because of the policies, although a further 5.7 % were not intending to return anyway. Only 10.8 % stated that they did not know what they would do. It is evident when assessing the nationality of the tourists by destination that many have undertaken long-haul travel to reach the destinations (e.g. USA/Canada dominate arrivals in the Dominican Republic; UK visits are the largest group in The Gambia and Italy/Germany were the main tourists to Zanzibar). In this respect, this pattern tends to confirm the findings from Miller *et al.* (2010) that tourists have a poor understanding of global environmental issues, given the “green on balance” argument and undertake long-haul travel with little prior knowledge of the major sustainability issues facing the destination. In many respects, this finding makes a mockery of the pseudo-green traveller that are prepared to pay more for water to be addressed rather than recognising their own ecological footprint is substantial when contrasted with the local population’s living conditions and challenge of water access.

The tourists demonstrated a relatively low level of awareness of water problems in the destinations, together with a limited range of remedial actions being observed. Only about two-fifths of the sample confirmed noticing any water-related issues and these tended to be issues of quantity and quality. About one-third of the sample had observed water conservation measures and these tended to be conventional and lacking any real innovation. Consequently, the impact of water problems on enjoyment was minimal and the prospect of more stringent restrictions on water usage or overall cost of the holiday was unlikely to affect destination choice too substantially. Greater awareness of water-related issues, what tourists can do to ameliorate the effects, and what destinations can do to better manage the water supplies for tourists appears to be a priority. Educating tourists about water issues is as much of a challenge, as the broader environmental issue such as climate change (Gössling *et al.* 2011).

5.0 CONCLUSION

This study provides evidence from three destinations of a broadly consistent approach among tourists towards sustainability on holiday and at home, whereby the same behavioural traits of “green on balance” exist at a much wider international scale. This behavioural trait is one underlying demand-side factor that reinforces the vicious circle of water use issues in tourist destinations (Figure 1): only 7.6% of visitors said they would not return and so this raises key issues for decision-makers and policy-makers as the water issue is not acting as a key deterrent to relatively unsustainable behaviours in spite of its major importance. The significance of these comparative data is that it emphasises the gap between green behaviour and the perception of the scale and nature of the pressure which tourists represent on water supplies in the localities that they visit. Tourist behaviour is therefore an extra dimension of the growing unsustainability of certain forms of tourism, which is important to consider alongside the longer-term scenarios of climate change. Tourists clearly do not understand the impact of their visit on water resources – accentuated by the relatively easy access in their home environment and the limited measures to manage its consumption. Although tourists recognise that they are likely to consume more water than locals in destination areas, there is substantial underestimation of this consumption, which belies the significance of the impact even though numerous studies of consumer use of water (see Phipps and Alkhaddar 2013 for a review of recent studies of domestic water use) and estimates of consumption illustrate that consumers are more aware of their domestic consumption. This has gained momentum, especially with water metering, and a more focused user-payment approach. So the ability to understand and estimate one’s daily consumption is not an impossible task as some critics of this research approach might imply. However, this awareness of one’s own impact on the environment in a daily context clearly lapses amongst people who are green at home but less so on holiday.

For many researchers, education is the obvious starting point from the armoury of tools evident in Figure 2, but as Miller *et al.* (2010) illustrated, this policy has limited potential. This limited potential is because, as Dickinson, Robbins and Lumsdon (2010) argue, tourists feel they can compensate for their environmental impact by offsetting their impact through good environmental behaviours and practices elsewhere. Water is therefore a problem

issue especially in environments where it is both in short supply in the peak tourist season, and additional pressure is posed by peaked use. Water is an absolute resource in short supply in many tourist resorts, especially in the developing world that cannot easily be offset. Residents themselves may decide, controversially, about the trade-offs they wish to make with tourism for financial incentives, but the tourist should not consider they can reduce their impact through offsetting. More fundamentally, this approach raises questions over the responsibility for its implementation, the resistance amongst the tourism sector to adopt the “polluter-pays” principle and how education can be translated into meaningful behaviour change. Kurz, Donaghue, Rapley and Walker (2005) highlight the dilemma facing residents: this frequently translates into conflict between tourists and water and the trade-offs between the known impact of tourism on fragile environments where the resource base suffers seasonal shock through incoming tourism. The logical outcome is the incompatible desire to travel and the desire to be green at home. Although we have not provided extensive data on the relationship between tourists and residents in their daily use of water beyond the established secondary data sources that exist (see Table 1), it is evident that there is a huge inequity in the consumptive behaviour of visitors and residents popularised by Tourism Concerns high profile campaign in the UK in 2011. This paper captures some elements of these inequities in the tourist-resident relationship with empirical validation although much work still needs to be done in bridging the knowledge gap on daily water use over a set time period by tourists and residents, perhaps using a time budget approach.

Some interesting observations arise from the result reported here including the fundamentally reframe what we consider sustainable lifestyles are including daily behaviours in the light of travel and tourism. This may indicate the extent of behavioural changes that are needed to bring about real change (Barr, Shaw, Coles, Prillwitz 2010; Prillwitz and Barr 2011; Barr, Gilg and Shaw 2011) to make a step change in the transferability of daily sustainability behaviour to the holiday concept. As Stoll-Kleemann, O’Riordan and Jaeger (2001) highlighted, the metaphor of displaced commitment, dominates tourist desires to travel to destinations, where they knowingly impact the environment, but where they believe this impact is counterbalanced by environmental action at home. Changing these beliefs and behaviours is the fundamental challenge for education in the host country in an era of climate change, despite the problems of agency

and structure that wish to maintain the status quo from an industry perspective with some notable exceptions from tour operators wishing to establish their sustainability credentials. Yet academic discourse alone is of little value without implementation. Academic research on sustainable tourism has a long history, but has demonstrated little practical evidence of influencing behavioural change emanating from the knowledge it has created. The lobbying work of organisations, such as Tourism Concern (2012), to create the evidence base for achieving change is one direction, albeit a minority position in the absence of government action.

The free market economy and personal choice based on access to travel options and the ability of current tourists to pay increased prices means that taxation measures are unlikely to make little long-term difference against a scenario of long-term growth in global tourism to 2030 (United Nations World Tourism Organisation (UNWTO), 2011). The acceptability of long-haul travel has been mitigated by carbon offsetting to reduce the environmental impact of tourists in transit, but measures are now also required to address the impact of tourists on water supplies at their destinations. Rethinking sustainable lifestyles may benefit from a re-evaluation of the influential ideas of Krippendorf in the 1980s, who questioned the need for long haul and international tourism and rebalancing tourism to the current focus by tourism organisations in the UK towards staycation and holidaying at home. At the very least, water equity issues will escalate future conflict between tourists, tourism businesses, residents and the environment in many destinations, where unsustainable water use accentuated by climate change threaten access to water as a basic human right.

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Table 1: Methodology and Destination Characteristics

	Zanzibar	Dominican Republic	The Gambia
Survey Timing	September-October 2011	October-November 2011	December 2011
Number of Surveys completed	115	100	100
Survey methodology	Face to face interviews with international tourists	Face to face interviews with international tourists	Face to face interviews with international tourists
Survey Locations	Beach resorts at the villages of Jambiana, Kiwenga and Nungwi, N.E. coast of Unguja Island	Santo Domingo (tour group location for hotel visitors); Bavaro-Punta Cana (main tourism destination where the majority of all-inclusive resorts are located); Caberete, Puerto Plata, a small tourism town	Coastal hotels adjacent to the Greater Banjul area on the south bank of the River Gambia to include the main concentrations of resorts along a 15km coastline at 3-5 star hotel sites
International tourism arrivals	220,000 (2011)	4.4 million (2010)	91,000 (2010)
Water consumption: Residents Litres per day	93.2	48% of the population have access to potable water	No data Qualitative data suggests access to standpipes and wells require residents to make multiple trips to carry water
Water consumption: Residents Litres per person	53-500	No data	Dependent upon access to standpipes and amount they can carry per day
Water consumption: visitors: Per room per day (litres)	686-3195	259 to 1,483 (estimate)	20-1320
Water consumption: visitors: Average per hotel per day	1482	400 (estimate)	1330-428,000

(litres)			
<p>Summary water issues identified from qualitative interviews by Tourism Concern/other data sources (e.g. UN Agencies)</p>	<ul style="list-style-type: none"> • Overconsumption by tourism emerging as a divisive issue • Conflicts in local-hotel use of supplies due to hotel over-use and salinity emerging in water courses • Some hotels have employed security guards as a result of sabotage of hotel supplies 	<ul style="list-style-type: none"> • Major regional variation exist in access to water supplies and also in terms of quality • The World Bank estimate that only 10% of the population has continuous uninterrupted access to supplies • Inadequate treatment of drinking water and waste water, especially from urban hotels • World Bank (2009) Water and Sanitation in Tourist Areas Project investing US\$34 mn • Problems of salt water intrusion, pollution and water quality reported in some areas (Grady and Younos 2010) • Resort contaminatio 	<ul style="list-style-type: none"> • Highly seasonal pattern of arrivals drawing upon water in the dry season (October-March) as a European winter sun destination • Tourism concentrated in a 15km coastal strip • 25% of the population have access to piped water • Unregulated creation and use of borehole water by hotels • Hotels have a range of limited conservation measures but poor understanding of water issues • Local tourism enterprises facing access to water problems for their day to day operations • Low pressure water facing many households in tourist region as well as price

		n of coastal freshwater aquifers <ul style="list-style-type: none">• 67% of the national population consume bottled water to avoid contaminated supplies	and quality issues
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Source: Tourism Concern (2012); various sources

FIGURE 1. Vicious circle of water inequity and illustrative research themes

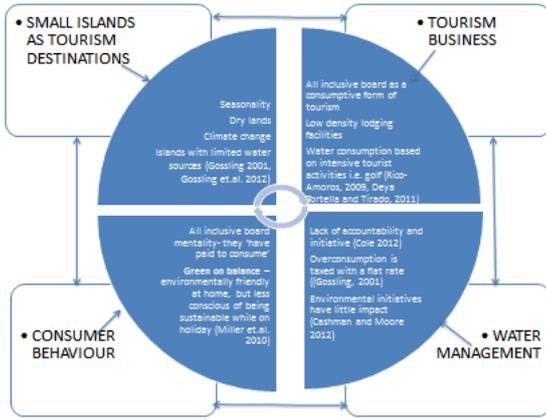


Figure 2: Issues in understanding behaviour change towards the environment (Source: Developed from Stirling 2004, cited in Rogerson 2010)

