

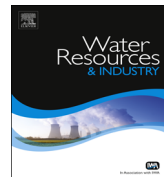


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Water equity – Contrasting tourism water use with that of the local community



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ABSTRACT

Tourism as an economic activity has grown substantially and is increasingly adding to local and seasonal pressures on water supply systems of tourist destinations around the world. Based on data from the AQUASTAT and EarthCheck tourist accommodation databases, this research analysed tourism-related water use in 21 countries and compared it with other municipal use. Tourists' water use on a per guest night basis was found to differ substantially, with water usage being highest (up to 956 l per guest night in China) and most diverse in developing countries. The disparity between tourist water use and that of locals is also greatest in low or mid-income countries. Industrialised countries, in contrast, are characterised by high tourism water efficiencies, with no apparent discrepancy in water use between tourism and non-tourism users. Implications of this research for managing potential water conflicts and the need for broader tourist destination stewardship for water resources are discussed.

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1. Introduction

Every year on the 22nd of March 2013, the United Nations celebrate World Water Day to highlight the importance of freshwater and the need to manage water resources sustainably. Recent trends of increasing intensity of agricultural production, rapid development and urbanisation have resulted in

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increased withdrawal of freshwater resources, with mounting risks of water stress. Globally, domestic water use alone has grown on average by 2.2% every year for the last 60 years [24]. Since 1995, this growth has been driven to a considerable extent by increased consumption in Asia and Africa. Asia, in particular, is considered a hot spot for future water supply, because of continuous population growth, which means that about two billion extra people will require water resources by 2050 [35].

Research from Northern China highlights how increased demand, coupled with decreased precipitation and run off, triggered large scale investments into water engineering and, more recently, water transfer projects [10]. While agriculture in the three main basins of Huai, Hai and Hunang is still the main user of water, industrial and municipal water uses are increasing rapidly. Cai [10] reported that local authorities place higher priority on industrial or domestic end uses compared with agricultural use, which has led to reduced water availability for farmers, especially in the hinterland of large city destinations such as Beijing. Urban–rural water conflicts are the result, with questions about social equity being raised where the most vulnerable groups, such as the socio–economically disadvantaged from the countryside, are most exposed to water stress or scarcity.

The fourth edition of the World Water Development Report recognised the urgent need to bring water challenges to the centre of societal and economic decision making. It argued that “robust governance mechanisms are required to protect water resources and ensure sustainable development and equitable distribution of water-derived benefits” [51, p. 2]. The report further highlighted the need to involve industry and its unsustainable use of freshwater resources. Tourism is a major global industry that is known to be a substantial contributor to local water demand [26,29,20].

The existence of tourism means that an additional number of people require freshwater for a wide range of end-uses, including drinking, hygiene, cleaning, food provision, recreation, aesthetics, and other support services. In some destinations, this additional demand may lead to stress. Water stress or scarcity can be measured in different ways, depending on scientific or political emphases [9]. When conceptualised as a physical supply problem [33], water stress has been related to a threshold that is reached when annual fresh water supplies drop below 1700 kl per person (equating to 4660 l per day); water scarcity means that less than 1000 kl per person (or 2740 l per day) are available [52]. Moreover, in some circumstances water may be available, but heavily polluted or saline. Based on Gleick [27], the absolute daily water requirements for meeting basic human needs amount to 50 l per person; reflecting some kind of “right to water” that should be equally available to everybody [2].

This paper builds on the premise that tourism related water use is most likely to compete with that of the local population, since both primarily draw on municipal water supply (as noted by Rico-Amoros [42]). Accounting for tourism’s water footprint is therefore important [22]. This research therefore investigates the water use of tourism compared with other municipal use for 21 countries. Per capita water consumption is used as the key indicator to investigate aspects of water equity, and examine withdrawal in the context of available renewable freshwater resources in each country. The research questions are: (1) what is the water demand per guest night in 21 different countries around the world; (2) how does the per guest night water use relate to the water resources available in each country, and (3) is there substantial disparity in water use between tourists and other municipal use when measured on a daily basis?

2. The tourism water problem

International tourism arrivals have been growing almost consistently for the last half century and recently reached over one billion international arrivals [53]. A concerning trend is that almost all (46 out of 50) of the Least Developed Countries now rely on tourism as their primary source of foreign exchange earnings, and they are also the countries where tourism is growing the fastest [30]. Arguably, tourism development brings a wide range of benefits, but “Overall, there has been greater tendency by international development agencies to advocate tourism projects than to holistically and critically assess the consequences of tourism-related development strategies” [30, p. 103].

Water scarcity clearly poses existential challenges for local communities [44], but it has also become an increasingly important strategic consideration in corporate planning, including by tourism companies [5]. Strategic questions include, for example, how tourism operators can contribute to responsible water

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