Water, Tourism, and Social Change: A Discussion of Environmental Perceptions in Bali

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Abstrak

Air berperan penting dalam masyarakat Bali. Air tidak hanya biasa dihadirkan dalam ritual Hindu Bali, namun penggunaan dan pengelolaannya juga membawa kemakmuran melalui budidaya padi. Meskipun aspek-aspek air tersebut telah dibahas dalam banyak terbitan akademik dan non-akademik, pemahaman kualitatif tentang hubungan apapun dengan perairan laut masih belum banyak didalami dalam literatur. Makalah ini bertujuan menyajikan ulasan awal mengenai literatur tentang air dan lingkungan laut di Bali, dan mengemukakan perlunya pemahaman sosio-ilmiah kualitatif lebih lanjut tentang hubungan orang Bali zaman sekarang dengan perairan laut. Pembahasan mengenai penelitian yang ada tentang masyarakat-masyarakat yang berorientasi laut dan tentang pembangunan pariwisata yang terus berlangsung di wilayah pesisir Bali dimaksudkan untuk memperkaya penelitian yang sekarang tersedia dalam kajian Bali. Dengan menghadirkan literatur yang membahas konsep Bali tentang lingkungan, air dan lautan, makalah ini berupaya menyoroti manfaat penelitian lanjutan mengenai persepsi tentang lingkungan bagi pembahasan polusi, kelangkaan air dan pengelolaan sumber daya. Meskipun obyek wisata bahari seperti Pura Tanah Lot dan Pura Uluwatu serta beberapa komunitas pantai populer berperan penting dalam industri pariwisata, makalah ini menyarankan perlunya penelitian lebih lanjut mengenai pentingnya obyek-obyek wisata tersebut bagi wisatawan dan orang Bali, serta interpretasi sosial yang berkaitan dengan itu.

Kata kunci: Bali, air, lingkungan laut, pariwisata

Abstract

Water plays an important role in Balinese society. Not only is it commonly featured in Balinese Hindu rituals, but its use and management also enables prosperity through

rice cultivation. While these aspects of water have been discussed in many academic and non-academic publications, qualitative understandings of relations to seawater remain somewhat unexplored in the literature. The aim of this paper is to present a preliminary review of existing literature on water and marine environments in Bali, and argue the need for further qualitative social scientific understanding of contemporary Balinese relations to seawater. A discussion of existing research on ocean-centred communities and continued tourism development in Bali's coastal areas is intended to add to current research in Balinese studies. By presenting literature on Balinese concepts of environment, water and the ocean, this paper seeks to highlight the benefits of continued research on perceptions of environment to discussions of pollution, water scarcity and resource management. Although maritime attractions such as the temples at Tanah Lot and Uluwatu as well as several popular beach communities play a significant role in the tourism industry, this paper suggests the need to further investigate the importance of these attractions to tourists and Balinese as well as the social interpretations associated with them.

Keywords: Bali, water, marine environments, tourism

Introduction

Water is not only a life-giving natural element, it is also a concept that has long fascinated social scientists and sparked some conceptual debate. Holy water features heavily in many religious rituals around the world and Balinese Hinduism is no exception. 'Thinking through water' is a way for anthropologists to conduct environmental studies that help understand how humans relate to their environment. This and similar approaches have contributed to research on the use of natural resources and social relationships around these.

This paper seeks to raise a discussion on water management, pollution and tourism in Bali. By reviewing existing literature on water, tourism and Balinese studies, this paper suggests the need to further research Bali's maritime communities to address issues of waterway pollution and freshwater scarcity. The article does

not attempt to provide a comprehensive review of all aspects of Balinese relations to environment, but instead present a focused, preliminary review of existing research and spark debate directed toward maritime environments. As these communities grow and its actors are part of cosmopolitan tourism exchanges, questions of social change and cultural transformation increasingly call for attention.

Marine Environments: Unexplored Spaces

To those that live on or have visited Bali, the issue of pollution can be easily identified. Whether it is visually apparent with piles of burning rubbish on the roadside or canals and rivers clogged up with plastic bags, bottles and other waste, or through non-visible factors such as disease transmission through food and water, pollution on Bali is a problem that has sparked debate locally and internationally. Reports of surfers falling sick after rain periods that washed out rubbish and toxins from upstream rivers or surfing at locations exposed to sewage are frequent (Cole 2012:1235) and further indicate a need to address pollution. This paper seeks to provide a seminal contribution to perceptions of water in Bali as a means to give some insight into existing research on the topic and current anthropological debates on human relations to environment.

Questions I ask in regards to water in Bali can be subdivided into seawater/freshwater relations and social change. In light of thriving ocean-centred village communities such as Kuta, Nusa Dua and Sanur, the question should be asked how Balinese negotiate traditional beliefs with maritime tourism. This paper intends to focus on how maritime tourism might shape local attitudes towards seawater, as well as Balinese understandings and perceptions of water.

Beaches present complex social spaces, as places of conflicting meanings: at times and in other societies interpreted as neither human (interpreted as 'civilized' and representative

Picture 1. A spout of water with offerings in a temple in Tabanan (Photo Thomas)

of 'land') nor entirely natural ('wild', water) (see Dobson 2007; Brown, Fox and Jacquet 2007; Helmreich 2011). If, for Balinese people, the beach is traditionally taboo (see below) for recreation but important for ceremonies around life and death, how do Balinese interpret recreational and economic activities that take place in and by the ocean? Given the apparent link previous published works make of a cultural and religious association of oceans with impurity, how is maritime tourism and general beach activity understood by those Balinese that act in these spaces today and what might this tell us about their understandings of marine environments? How are marine environments themselves understood? Further, I address the urge to consider debates of freshwater management in Bali and present existing arguments in the anthropological literature on perceptions of water and environment.

Anthropology of Water: Universality, Meaning and Phenomenology

To give context from the anthropological literature on water, this paper will discuss how anthropologists have conceptually

debated water as a universal entity and its other attributes. Water is an important topic for anthropologists "to think with" (Strang 2014; Orlove and Caton 2010), and has even been described as "theory machine", because, as Helmreich (2011) suggests, it has been used as a metaphor and influence on developing and expressing social theories by various scholars. Orlove and Caton (2010; see Helmreich 2011:137) interpret "water as total social fact", an idea derived from Marcel Mauss's work (1922) which suggests that water must be understood on multiple social levels and the social complexity surrounding water, from sacred, to political to environmental must be considered contextually. It is water's "connectivity and its materiality, that ought to be of paramount concern to anthropologists" (Orlove and Caton 2010:404). Further, the authors suggest in their review of anthropological approaches to water and sustainability that the ethnographic study of water is important in the context of global debates on climate change, growing freshwater demand and social inequality (Orlove and Caton 2010:403; see Barber 2012).

One ongoing debate in anthropology is the question of universal characteristics of water (Strang 2005; 2014; Davies 2014; Alberti 2014; Oestigaard 2014). Strang (2005) asks whether things - studied on the exemplar of water - are universally the same, but cultures understand them differently (Strang 2005; see also Casey 1996:19). Strang (2005; see Strang 2014) refers to Ingold's phenomenological work (see Ingold 2000) and argues that because of its universal material attributes, water has universal social meanings, such as being purifying and life-giving, however local social interpretations may vary, "creating common undercurrents in culturally specific engagements and interpretations" (Strang 2000:97). Oestigaard (2014:164) suggests that water "is always culture (including religion) and nature at the same time", an idea which questions a strict, binary concept of nature and culture.

The concept of water can be further broken apart, as

Helmreich (2011:133) argues, different bodies of water demand their own attention. Maritime anthropology, according to Helmreich (2011:136) has predominantly focused on how humans "understand property in ocean resources" and "local systems of management of meaning, rather than with the nature of the sea as such" (see Acheson 1981). Malinowski (1922; see Acheson 1981:287) investigated the management of ocean resources through seafaring and the Kula exchange, finding that rituals and magic to influence fishing success were more prevalent among fishermen operating where resources are scarce. This functionalist idea, that humans conduct rituals to influence their environment (see also Rappaport 1968) has been taken up in more recent studies on marine environments and is described as a means to rationalise and control environment, which is otherwise understood as wild and uncontrollable (see also Acheson 1981:287; King 2011).

Maritime anthropologist Tanya King (2005; 2007; 2011) further argues for the importance of phenomenology to understand the complexity of interpretations different groups of people may hold of marine environments, through acting in it and perceiving it first-hand as opposed to forming opinions on it through consumption of its resources and popular media. This paper has a combined interest in maritime and freshwater concerns in Bali.

The *Subak* System: Balinese Water Irrigation

Having outlined some general discussions of water as social concept, the following three paragraphs will outline how Balinese are understood to relate to freshwater, holy water and seawater.

The *subak* system and its social relationships and interpretations, is one of the most prominently studied concepts in Balinese ethnographies (Geertz 1972, Jha and Schoenfelder 2011; MacRae and Arthawiguna 2011; Hauser-Schaeublin 2011; Lorenzen and Lorenzen 2011; Lorenzen 2015). Traditionally,

Picture 2. Water irrigation system in a rice terrace in Jatiluwih (Photo Darma Putra)

the subak system plays a vital role in organising significant rituals related to rice cultivation and an important part of the role of members of the individual groups is determining the flow of water from irrigation canals downstream into rice fields. Stephen Lansing has published extensively on the *subak* (Lansing 1987; 2012; 1991; see also McKean 1983; Hefner 1986) and has continuously argued for the importance of the subak to manage irrigation, "a system of water temples, separate from the state" (Lansing 1987:338). Lansing suggests that "a rice terrace is a complex artificial ecosystem" (Lansing 1987:338; see also 1991) and the social relations around it are integral to a rice field's existence. His research contributed to a successful claim to have rice terraces, temples, lakes, mountains and the "subak system" declared UNESCO World Heritage (Indonesia 2011). Rice farmers offer gifts in return to the subak, an exchange described as type of water tax (Hobart et al. 1996:95). Hauser-Schaeublin (2011:45) argues that water is not "open access" but a "gift of the gods"; therefore only the subak, who are believed to have the blessings of the gods, can legitimately exercise control over water management. In the context of the subak, water therefore

Picture 3. A Layman priest sprinkles holy water on devotees after a ceremony in a Balinese temple (Photo Darma Putra)

presents the centre of a significant social construct which, it is argued, is necessary for effective food production. MacRae and Arthawiguna (2011) present a critical case study of the subak as obstacle or agent for change, and suggest that the role and organisation of the subak as model of resource management can be too ambiguous and localized to enable accurate generalisation. As Lorenzen's (2015) article on the "future of Balinese irrigated rice societies" indicates, there is continued interested in discussing the subak system through means of ethnography. Instead of providing an extensive debate of the role and organisation of the subak, this paragraph sought to show that the subak system goes beyond treating water as mere resource or commodity, but exemplifies how water is connected with the religious framework of Balinese Hinduism.

Agama Tirtha: Holy Water and Balinese Concepts of Environment

Water plays such an important role in Balinese religion

that it has been termed "agama tirtha, the religion of holy water" (Lansing 1987:330; see also Vickers 1989:51; Hobart et al. 1996:105). In many Bali Hindu rituals it is used for purification, to cleanse ritual objects, sites and individuals (Hobart et al. 1996:105). Lansing identifies that "water is revered for its power to make things grow, and to wash away impurities both physical and spiritual" (Lansing 1987:330). Water is not only featured in many religious, life-cycle and cleansing rituals, the flow of water is also understood in a natural hierarchy. The "balancing opposites" of pure/impure, up/down, mountain/sea are considered important to the understanding of Balinese cosmology and ecology (Hobart et al. 1996:100), as traditional Balinese concepts of environment are said to understand power and life to operate from above, such as through the sun, mountains and upper rivers. The female soil operates from below and is attributed with growth and decay. Natural powers are believed to flow from "top to bottom, from mountain to sea" (Hobart et al. 1996:100). Clifford Geertz (1972:26) argued that environment takes an "active, central and creative" factor in shaping Balinese life and that water plays a central role in Balinese ecology. While freshwater and holy water have been studied previously (Geertz 1972, Jha and Schoenfelder 2011; MacRae and Arthawiguna 2011; Hauser-Schaeublin 2011; Lorenzen and Lorenzen 2011; Lansing 1987; 91; 2012), Balinese relations to the ocean have often been neglected in anthropological studies, despite being significant in understanding Balinese cosmology and natural hierarchy in its entirety.

Seawater, Beaches and the Ocean

Bali's oceans remain widely unexplored in the anthropological literature on Balinese studies, as there appear to be no academic articles that have primarily addressed perceptions of seawater. There are infrequent mentions of a cosmology that portrays the ocean as dirty, dangerous, undesirable and as housing evil spirits (Del Guidance 1994:10; see also Belo

Picture 4. Cleansing ritual in Kayu Aya Beach, North of Kuta (Photo Darma Putra)

1960:15, Reuter 2002:272). In contrast, Balinese cosmology in relation to freshwater has been discussed more prominently. The flow of freshwater on the island is interpreted through a sense of hierarchy, where "'upstream' is associated with purity and the uranic, while 'downstream' is linked to chtonic dangers" (Lansing 1987:330). The mountains are sacred and the residence of the gods, while the sea is "a place of dangerous and destructive forces" (Reuter 2002:272). Similarly, the ocean has traditionally been depicted as home to evil spirits and is believed to be "the underworld with deadly snakes and poisonous fish" (Del Guidance 1994:10). Seawater is associated with illness and bringing death but also to be "a source of useful, vital energy" (Hobart et al. 1996:99). The connection of oceans with negative imagery has traditionally meant that beaches were treated as a kind-of taboo space, with acceptable use mostly revolving around ceremonies, most commonly cremation rituals. Beaches and the ocean were not usually a place of leisure, a notion which

maritime tourism has challenged over the last few decades. There are several important sea temples across the island, the best known and mostly visited being Pura Tanah Lot and Pura Uluwatu. Lansing (1987:338) suggests that sea temples, although geographically isolated, relate to upstream temples. This idea connects the mountains to the sea spiritually and ties them together in a way which relates the understanding of one (e.g. upstream freshwater sources such as rivers and lakes) directly to the other (e.g. the ocean and beaches). While these temples are popular, revenue generating tourist attractions, their role and importance to Balinese Hindus remains significant with many rituals, including *melasti* and cremation ceremonies involving a visit to a beach or sea temple. As human relations to the oceans and seawater remain somewhat understudied in Bali I suggest that an illumination of these conceptions may help understand current social developments within existing maritime tourism communities in Bali.

Water Scarcity and Pollution in Bali: Environmental Pressures and the Need for Inquiry

Bali currently faces two major environmental pressures in relation to water: pollution and freshwater scarcity. As water demand in the tourism industry is increasing, water is diverted from agriculture to tourism related demands such as by hotels, villas and golf courses (Lorenzen 2015; see also Cole 2012; Roth and Sedana 2015; Wardana 2015). The tourism industry has become the largest consumer of water, accounting for 65% of water use in Bali (Cole 2012:1224; see also Wardana 2015:110). Cole (2012:1222; see Peace, Connor and Trigger 2012; Warren 2012) discusses the freshwater-related problems Bali faces and argues that freshwater supply has been mismanaged by tourism developers and is unsustainable. Its geographic limitations as a small tropical island further stress Bali's water supplies with "sensitive and restricted groundwater potential relative to the

Picture 5. Scene at a popular tourist beach in Canggu (Photo Thomas)

small size of the island and its dense population" (Strauss 2011:71). The overall freshwater supply is limited, the management of infrastructure is neglected and demand is growing. Additionally, as more land is developed to accommodate tourism industry demands, access to water is further limited as "water shortage is directly linked to loss of land" (Strauss 2011:76).

An anthropological inquiry into water also enables discussions into the second environmental pressure on Bali, pollution, an important concern for marine resource management. Six of Bali's most popular beaches including Kuta and Canggu face "light" to "moderate" pollution (Kencana 2010). Pollutants include nitrates, lead and phosphates and originate from unregulated waste management by hotels and tourism operators as well as a general "lack of care of the island's water resources" (Kencana 2010). Beach clean-up events have become frequent and are community driven events where physical waste - such as bottles, food wrappers and plastic bags - is collected. Tourists not only care about visiting a pristine environment but polluted freshwater, as well as seawater, pose health hazards to

visitors and local residents. With increased pollution of oceans and waterways, increasing freshwater demand and decreasing freshwater availability, Bali is expected to experience detrimental environmental effects (Kencana 2010), such as aquifer depletion as soon as 2020 (*Bali Advertiser* 2015). Despite pollution and water scarcity as existing environmental concerns, maritime communities continue to expand and develop further.

Tourism Development: Beach Communities and Cultural 'Survival'

It was not until the 1950s that Bali's beaches started to become frequented by tourists, but not without attracting some attention. The first construction of tourist accommodation on the beachside in Sanur in 1956 baffled local Balinese, who were surprised anyone would want to live so close to the sea, in the presence of the demons (Picard 1996:73). Sobocinska (2013) discusses the mythological importance Bali has to Australian and other international holiday makers' ideals as culturally exotic and more recently as lawless, cheap and budget beach-party destination. While tourism industry promoters previously focused on 'culture', the development of tourism infrastructure by the Suharto government in beach communities such as Kuta, Sanur and Nusa Dua, pushed much activity towards Bali's marine environments, making it a "beach - rather than cultural - destination" (Sobocinska 2013:198). Since the first construction of a beach-side hotel, the focus on Bali's beaches has continued to grow. Today, popular tourist beaches are frequented by surfboard rental operators, surf instructors, drink and food vendors and others involved in the tourism economy. Life by the beach has become part of the lives of many Balinese, creating a vibrant, cosmopolitan space of exchange, economy and leisure.

Alongside environmental concerns, scholars have wondered about the 'survival' of Balinese 'culture', which many scholars in the 20th century saw as 'under threat' by external

influences. Although asked in different formats, the question was often asked: "will Balinese culture survive the impact of tourism?" (Picard 1996:198; see also Berger 2013:140; Picard 1999:15; Howe 2005:134). In the 1960s researchers were quick to argue for an erosion of tradition and the superficiality of touristic "pseudo-events" (Berger 2013:75). To his own surprise, Berger's own research in the late 1990s found that Balinese culture was 'still alive' and that it had both changed and stayed alive. Michel Picard, a prominent scholar on tourism in Bali (1990; 1996; 1999) argued in 1990 that the question of 'survival' is irrelevant. Instead of assessing the impact of international tourism on Balinese culture, he investigates concepts of Balinese identity through discourse analysis (Picard 1990). Schulte Nordholt (2007:82) similarly discusses identity that stands in close relation to economic factors and argues that "an open economy and a closed cultural identity are not compatible". Following from Picard's diversion from the 'survival' and 'authenticity' of Balinese culture, I agree with Bali tourism scholar Shinji Yamashita (2003:10) that anthropologists should focus on the ways in which Balinese respond and adapt to foreign influences and how this is evident in the exchange systems relevant to the tourism industry. To date, the environmental anthropology literature on water studies in Bali has not extensively focused on the social processes of marine tourism (see Putra 2014), leaving space for discussion of Balinese identity in the context of environmental issues.

Maritime Tourism and Social Change

Bali has been a popular cosmopolitan tourist destination for nearly a century (Howe 2005:134), but it wasn't until the 1970s and Suharto's vision for Bali as Indonesia's tourism showcase, that tourism infrastructure paved the way for more visitors (Vickers 1989). Tourism is now Bali's largest industry (Howe 2005:3) and according to the Balinese Tourism Office (Dinas Pariwisata 2015) the 3,7 million foreign arrivals in 2014

almost match local residents one-to-one. Bali's Hindu religion, gamelan music, wood carvings, and its unique style of dance performances are often considered to be a major drawcard for attracting foreign visitors (Reuter 2002:270; Picard 1999; Berger 2013:66; Howe 2005:131; Schulte Nordholt 2007:82). Marine activities such as surfing, snorkeling, diving and the beaches themselves also present considerable attractions. The two top visited attractions in Bali are two sea temples, Pura Tanah Lot and Pura Uluwatu, the former attracting over 3 million and the latter over 800,000 visitors in 2012 (Dinas Pariwisata 2015).

Balinese tourism scholar I Nyoman Darma Putra (2014) has identified the growing interest marine tourism is receiving. In light of ongoing discussions of the 'cultural degradation of Bali through tourism' (Picard 1996:198; see also Picard 1999:15; Howe 2005:134; Berger 2013:140), Putra argues that marine tourism may present a sustainable alternative to cultural tourism. Putra suggests that the beaches are of significance to Balinese Hinduism which in turn attracts tourists. Balinese Hindu rituals performed by the beach include life cycle purifications for babies, parts of cremation ceremonies and annual processions as part of the Hindu New Year "Nyepi", the Day of Silence. The lively processions include traditional gamelan music, offerings and ceremonial gowns, which, according to Putra, present an attraction for tourists. Sanur, Kuta and other beaches are buzzing with tourism trade such as food and crafts vendors and water sport equipment rentals. Darma Putra (2014:25) argues that marine tourism would benefit from further research as he suggests it may present a sustainable economic alternative to large-scale resource extraction and a viable addition to cultural tourism.

Environmental sustainability would require responsible research management, which Cole and Browne (2015) suggest is currently neglected in developing tourism communities such as Canggu. By digging and using deep wells (up to 60m),

financially capable tourism businesses such as large hotels, are able to access deep aquifers and avoid official regulation. At times, Cole and Browne found that business owners seemed unaware of applicable regulations, therefore unknowingly over-using their water supply. Poorer water users dig wells by hand and are only able to access shallower water supplies, which are expected to be depleted sooner than deeper resources. This, Cole and Browne suggest demonstrates how financial resources enable wealthy tourism developers to avoid water management issues and continue unregulated use. The authors suggest that a lack of control and regulation results in unsustainable use of water, raising the need for future research and intervention. Although maritime tourism may become a sustainable economic platform which values Balinese cultural heritage, Cole and Browne's (2015) research suggests that understanding the use of natural resources and their management may become important in addressing Bali's environmental concerns.

Discussion

In a recent special edition in the Asia Pacific Journal of Anthropology authors discuss the complexity of environment, landscape and water in Bali as "Paradise contested" (Lorenzen and Roth 2015). Land in Bali can be understood through multiple 'lenses': developers see the economic value, traditionalists see the spiritual meaning and water priests see its religious and ceremonial significance (Strauss 2015). Lorenzen (2015; see also Roth and Sedana 2015; Wardana 2015) critically speculates on the question of the future of the subak in light of the shift in water demand from agriculture to tourism: will the water priests continue as cultural institution, will they be redundant due to changing water demand or will the subak reinvent their role in Balinese society? Sophie Strauss (2015) outlines a case study from Northern Bali, where community groups are supported by local and international NGOs to oppose the development of land

for tourism accommodation for national investment groups. Her discussion of perceptions of landscape takes into account the role of Balinese cosmology to understand environments as sacred and profane, pure and impure. Strauss outlines the spiritual trinity, manifested in a natural hierarchy of purity where mountains are highest, land in the middle and the ocean the lowest (Strauss 2015:129). Beaches and the ocean, Strauss argues, are "the zone best suited for tourism development in Bali, its availability in religious terms being a prerequisite of development, coinciding conveniently with its desirability for tourists" (Strauss 2015:129).

This paper aims to provide some insight on the social consequences of shifting water and tourism demands and is further informed by Strauss's conclusion, where she suggests one should not investigate the debate of the secular and sacred, but focus on "the practices of the actors involved that are shaping interests, positions, identities and struggles about values and valuations of the landscape, control of its resources and legitimacy of its use" (Strauss 2015:136). Some questions this paper seeks to raise are: how do communities that act in marine environments respond to environmental pressures such as water scarcity and pollution? How can further social scientific research on water and waterway management contribute to global debates on concepts of water, marine environments and resource management?

Environmental anthropologists have engaged in debates on human conceptions of environment for decades. One point of discussion which continues to provoke debate are the concepts of 'nature' versus 'culture' with many anthropologists arguing against understanding the two concepts as dichotomy (Peace, Connor and Trigger 2012; Helmreich 2011; 2014; Oestigaard 2014:164; Kopnina and Shoreman-Quimet 2011; Townsend 2000). Increasingly, anthropologists have argued that such a conceptual distinction is based on Eurocentric concepts, expresses ethnocentrism (Peace, Connor and Trigger 2012; Townsend

2000:24), and may not be accurate in understanding how humans relate to their environment. As social scientists continue to research Balinese concepts of landscape and environment and further explore relationships to water, such insight could contribute to conceptual discussions of 'nature' and 'culture' as understood by Balinese, as well as applied issues of pollution and resource management.

Conclusion

In this paper I have presented anthropological debates of water as having universal meaning but is subject to varied cultural interpretations. By presenting case studies on the subak, holy water and seawater, I have sought to demonstrate how water plays an important role in Balinese society and although social scientists have given much attention to religious ceremonies and the subak system, relationships to seawater in Bali have widely escaped in-depth research.

Bali, the 'island of the gods' faces environmental pressures which increase as result of continued development. Freshwater scarcity and waterway pollution are topics which affect local residents and visitors alike, but to address these issues more effectively, this paper argues that increased research on maritime communities and perceptions of environment and water could provide valuable contributions to discussions of resource management in Bali.

Acknowledgements

First of all I would like to thank Prof I Nyoman Darma Putra for inviting me to write this article, as well as his continued interest in my research and support as friend and mentor. I also would like to express my gratitude to my supervisors Dr Sally Babidge and Dr Yancey Orr, without whose support and encouraging feedback this article would not have been possible.

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