

**Here Today, Gone Tomorrow? Cultural and Religious
Embeddedness of Climate Change Risk Perception**

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Chapter 14

Here today, gone tomorrow? Cultural and religious embeddedness of climate change risk perception

“The *very likely* contribution of mean sea level rise to increased extreme coastal high water levels, coupled with the *likely* increase in tropical cyclone maximum wind speed”¹ are major climate change risks facing small island destinations. Due to their limited resources, small island destinations often rely on tourism for their economic survival. This is manifest in tourism’s contribution to GDP in island destinations which are significantly higher than advanced and diversified economies. For instance, it is noted that tourism’s contribution to GDP in island destinations accounts for up to 25%, whereas in advanced economies tourism accounts for only 2% of GDP.² Tourism products in island destinations often surround the “3S” concepts (Sun – Sea – Sand). These three components are directly connected to climate conditions. Variability and changes in these three components influence both the demand and supply side of tourism.³

Social and psychological sciences have to an extent increased our understanding of attitudes, behaviours, perceptions, intentions, and methods of coping with climate change risks. Most of this research focuses on developed countries, and little emphasis is given to developing country contexts.⁴ Hence, perceptions, understandings of and responses to climate change in developing countries are often given insufficient attention.⁵ It is noted that a research gap exists in respect to psychological, cultural, religious, and social influences on the perceived risks of climate change, perceived adaptive capacity and motivation to respond to these perceived risks.⁶

Maldives is the lowest lying country on Earth, with islands less than three metres above sea level. Due to high tourism demand and combined with the smallness of the islands, the concentration of population and infrastructure has been focused in high risk coastal zones. The aim of this study was to explore how local inhabitants of a highly vulnerable tourism destination perceived climate change risks and to understand their motivation to adapt to these perceived risks. Within the context of Maldives, 62 interviews were conducted within three clusters of local communities of three atolls. The local communities of Maldives were chosen because of their high dependency on the tourism industry for employment and economic generation.

14.1 Perceptions of climate change risks

Engaging individuals with climate change has often proved difficult as perceptions of what is considered a risk vary greatly among individuals. A number of factors influence how individuals perceive risks, which in turn influence their motivation to address the risks. For instance, subjective beliefs (rational or irrational) are driven by psychological and cultural factors, values, norms, and social context.⁷ Thus, what is considered a risk in one cultural context may or may not be considered a risk in another. Further, many authors found that culture mediates how individuals perceive, interpret, and respond to risks.⁸ In addition, cognitive traditions or collective patterns of thinking shape how and if individuals, groups or societies think about climate change and how they perceive climate change as being relevant to their everyday life.⁹

Affect and emotion also play an important role in individuals' perceptions and responses to climate change.¹⁰ For instance, strong emotional reactions, including distress and anxiety about climate change risks and the future outlook manifest among vulnerable individuals and communities.¹¹ Visceral reactions such as fear and anxiety can trigger 'fight responses',¹² motivating individuals to address these risks.

Conversely, psychological barriers can impede climate risk adaptation.¹³ This was seen among the local communities of KwaZulu-Natal, Cape Town, who use psychological masking as a coping mechanism when socio-cultural barriers manifest as limitations to addressing climate change.¹⁴ On the other hand, some adaptive measures have negative impacts on communities. For example, the coastal Murik people of Papua New Guinea do not wish to be relocated to safer areas, as resettlement away from the coastal zone is seen as emasculating the males.¹⁵

'Place attachment' also influences how individuals perceive and respond to risks. Place attachment is defined as: "[...] positively experienced bonds, sometimes occurring without awareness, that are developed over time from the behavioural, affective and cognitive ties between individuals and/or groups and their socio physical environment".¹⁶

This attachment or connection to place is thus both a physical feeling and a psychological and socio-cultural process defined through history, ancestry, and the sense and meaning individuals and collectives apply to a particular place.¹⁷ Where there is a strong place attachment and sense of place among individuals and communities, there is a high level of environmental concern.¹⁸ During a study of the Inuit community of Rigolet, Canada found that climate change is negatively affecting feelings of place attachment by disrupting hunting, fishing, foraging, trapping, and traveling, and causing local landscape changes which subsequently impact physical, mental, and emotional health and well-being.¹⁹ To cope with similar climate change risks, storytelling is used by the Iñupiat community at Point Hope Alaska.²⁰ Exceptionalism²¹, denial²² and fatalism or a belief that only God has the power over climate,²³ influence how individuals perceive and respond to climate change risks.

14.2 Case study: Maldives

Maldives is made up of 1,192 coralline islands and is divided into 21 administrative atolls, which in turn make up seven provinces. Inhabited since the 5th century,²⁴ the current population of 331,000 people are dispersed on 194 islands.²⁵ The largest island, Laamu Atoll Gan (596 hectares) is home to 2,502 local residents, whereas the smallest island, Haa-Alif Atoll Hathifushi (5 hectares) is home to 101 local residents. Malé, the nation's capital, is home to one-third of the local population and a large number of expatriate employees, making it one of the most densely populated islands on Earth.

Tourism was introduced to the country in 1972 with the opening of two resorts with a bed capacity of 280 beds.²⁶ Currently there are 105 individual islands operating as enclave resorts, and an additional 74 resort islands are being developed.²⁷ Tourism has steadily grown over the past 40 years. Motivational factors for international tourists include the beach (21%), diving/snorkelling (21%), and the weather (15%).²⁸ The traditional fishing industry has now been replaced with tourism, and the country is extremely reliant on tourism for its economic survival. The fishing industry today contributes only 2% to the country's Gross Domestic Product (GDP).

For centuries, Maldivians have lived in this fragile island environment without any major natural disasters. There are no written historical records of natural disasters in the country. However, anecdotal evidence suggests there was an episode of torrential rain during the 1800s. Recently identified climate hazards for the country are sea swells, wind storms, heavy rainfall, storm surges, *udha* (king tides), and droughts.²⁹ It is suggested that sea level rise could submerge and erode the Maldivian islands, converting smaller islands to sandbars and significantly reducing the usable dry land on the larger islands.³⁰ Yet, locals have traditionally not seen erosion as something to be concerned about as demonstrated in the local proverb “*Rashuge eh faraay girenyaa aneh faraay vodeyne*” (If one side of the island erodes, sand accretion will occur on the other side).

The 2004 Asian tsunami is recognised as the largest natural disaster local communities have faced in living memory. The geological hazard resulted in 83 confirmed deaths, 25 missing and assumed deaths, and the displacement of over 13,000 people from four inhabited islands.³¹ The vulnerability of Maldivian tourism to natural hazards was evident from the impact of this event on the industry and the national economy. The tsunami caused severe damage to the physical infrastructure of many resorts, forcing nearly a quarter of the operating resorts to be closed temporarily. The combined cost to tourism and loss of government revenue was in excess of USD 300 million.³² At the national level, the event triggered a policy focus on disaster management, including drafting a building code and a disaster management plan.

Methodology

A qualitative methodology was adopted for this research. Based on island size and population distribution within atolls, the three atolls with the largest population were selected. In-depth interviews were conducted in atoll administrative capitals of Kaafu Atoll Malé, Seenu Atoll Hithadhoo, and Gnaviyani Atoll Fuvahmulah. Using random sampling, 62 interviews with local community members were carried out during April 2012 (Malé, n=22, Hithadhoo, n=20, and Fuvahmulah, n=20). Interviews ranged between 40 minutes and one hour.

Participants were asked about their views on climate risks they were faced with, how they considered climate change will impact them in the future, and how they planned to respond to these risks. The question of whether cultural or religious views influenced respondents' climate risk perceptions was also explored.

Table 14.1 presents the demographic profile of participants. To maintain respondent confidentiality and anonymity, further details are not disclosed. Interview excerpts are assigned identifiers based on their locality (Malé = M, Hithadhoo = H, and Fuvahmulah = F). Except for eight interviews, all were conducted in the local language Dhivehi. Interviews conducted in Dhivehi were translated and transcribed by a bi-lingual researcher.

Table 14.1 Demographic profile of participants

	N = 62 (%)
Gender	
Male	72.6
Female	27.4
Age (years)	
31–45	46.8
46–60	27.4
18–30	16.1
> 60	9.7
Highest qualification	
Primary	35.5
No response	17.7
Postgraduate	16.1
Vocational	12.9
Undergraduate	9.7
Secondary	8.1

Qualitative content analysis was carried out using text analytical software Leximancer 4. Leximancer is increasingly used as an alternative to traditional manual coding, and has been demonstrated to have face validity, stability, reproducibility, correlative validity and functional validity.³³ A key strength of Leximancer is that in using the automated coding process with minimal manual intervention, researcher bias is eliminated, thus increasing the reliability and validity of the research.³⁴ In applying Leximancer for data analysis, minimal researcher intervention was applied.

Findings

Results indicated that climate change is a new and often confused phenomenon among the locals. Climate change, climate variability, environmental damage, and the geophysical condition of a tsunami are commonly intertwined when discussing climate change. When asked about their views on why climate change happens, there were diverse opinions. A small number of respondents denied climate change and saw it as a natural process, and some inclined towards fatalism. Generally respondents were highly knowledgeable about factors influencing climate change, and narrated textbook versions of climate change processes: “I don’t see major changes to climate. This is a natural cycle we have”; and “That is a scientific question. It can be both man-made and natural [...] climate change is because of global warming due to increased CFC and carbon dioxide emission”.

Current climate change risks facing island communities and their livelihoods include beach erosion, coastal flooding, ground water salination, coral bleaching, increased heat, drought, and increased intensity of weather patterns. As one respondent noted, “We have water issues [...] shortages because of low rain fall during rain seasons, and with high flood, ground water salination”. “We also face recently episodes of coral bleaching and frequency and intensity of storm events”, another explained. Other comments focused on erosion and an increasing number of extreme weather events: “From where my home is located, over 35 feet width of land has been lost in entirety due to erosion. Now that is part of the sea. That is the largest climate change related disaster that we have had where my home is located”, and “We are experiencing more frequent extreme events annually, where we would have had a wider gap in those extreme events; say every five or ten years. But if you look at the weather reports or the data that we gather now, we are expecting extreme events annually”.

These risks were identified as those which will deteriorate in the future. Most significantly, coastal erosion, flooding, and reduced rainfall impacting island communities were identified: “I believe that our existing problems would become worse. The problems of water shortages, erosion and flooding will become more significant”.

Despite recognition of climate risks, motivation to respond to these risks is low. Respondents cited resource limitations as a key impediment to their response to climate adaptation requirements. Further, a clear differentiation was made between adaptive capacity of local communities and that of the tourism industry in tackling climate risks: “[...] industry operators do monitor the ocean current and construct vertical groynes to protect island from erosion. That is too costly for us”.

Culture, tradition, habit, values and norms, which relied on natural resource extraction, were identified as issues which influenced how locals perceived climate change risks. In this context, island communities recounted traditional norms of harvesting kashiveli (coarse white sand) from the beach for domestic purposes, and cutting down trees for firewood as actions which attenuated climate risk perceptions: “When it is near Ramazan time what we culturally and traditionally do is to go and harvest kashiveli from the beach. It is pride and glory for women to clean their houses, and to decorate their homes, backyards, surrounding areas, and roads with kashiveli. So yes, our cultural values and views influence how we address climate change risk”.

Two polarising religious views influence how individuals perceive climate risks and how they respond to these risks. Holding fatalistic views, some respondents saw that only God has the power to change climate conditions. The majority of respondents saw a need to follow God’s instructions to be proactive and save themselves from potential risks. Adaptive measures discussed revolved around the necessity to plant trees to protect from coastal erosion and to offer as shade from direct heat: “Climate change is a sign of the world’s end. I believe that this is a sign of doomsday to come,” noted one respondent. “God is not going to do anything for us unless we want to change our situation; we have to take actions to change our situation,” noted another, and “[...] there should be more forestation, more planting of trees to adapt to climate change”. Issues which are indirectly related to climate change, such as poor waste management, also emerged in this research.

14.3 Discussion and conclusions

The primary aim of this study was to explore how local inhabitants of Maldives perceived climate change risks and their motivation to adapt to these risks. This research demonstrates that climate change is a novel lived experience among community members. Moreover, cultural, and religious values influence how communities interpret and understand climate change risks. This reflects previous research,³⁵ which indicates that long standing traditions, culture, accepted social norms and values influence how individuals perceived risks. This is because the cultural “tool kit” containing diverse and often conflicting “symbolic experiences, mythic lore, and ritual practices of a group or society create moods and motivations, ways of organizing experience and evaluating reality, modes of regulating conduct, and ways of forming social bonds, which provide resources for constructing strategies of action”.³⁶

Within the context of Maldives, due to resource limitations and the high cost involved in obtaining imported construction materials, existing laws allow island communities to mine sand and coral for their home construction and other domestic usage. Hence, the perceived climate change risks become a secondary issue to the everyday life of community members. This embeddedness of cultural factors, the social context, and accepted values and norms of the destination increase the vulnerability of the destination to climate change risks.

The Maldivians living in this low-lying nation for the past 15 centuries do not have any recollection of major climate hazards, such as increased storminess or extreme hot temperatures. However, the 2004 Asian tsunami has left an emotional impact on communities and emerged as an identified risk to the local people. However, as it was found that climate change does not evoke strong emotional reactions among all individuals or communities.³⁷ This appears to be the case within the Maldivian context where there is no ‘fight response’ to address climate change. Interestingly, this is also seen among the Tuvaluans, who do not see climate change as a reason for concern or even a reason to migrate.³⁸

More specifically, in relation to the perceived risks of climate change, locals were very knowledgeable about environmental damage and linked this to climate change risks. This is because environmental education has been part of the national primary education since the early 1980s. Yet, at a practical level, motivation to address climate change risks such as those which emerge from coral or sand harvesting are weak. The presence of heuristics and biases such as what is considered an accepted norm influence risk perceptions and lead to maladaptive responses.

The Maldivians have always been seafaring people, and individuals move from one island to another in search of education, jobs and better availability of health services. Hence, the low place attachment to the islands and the environment in which the individuals live in is demonstrated through the low motivation to adapt to perceived climate risks. Climate change risk is seen as one which is distant and temporal. Consequently locals do not have a strong motivation to change their behavioural patterns and to adapt to the perceived risks.

Further, as was found in this study, local communities have limitations to the extent to which they can adapt to climate risks. While some inhabited islands are eroding away with subsequent coastal flooding, there are no higher grounds on these low-lying islands for community members to move to. Thus it suggested that coping mechanisms using psychological barriers are in play where

community members mask their fear and anxiety by leaving climate risks to fate.³⁹ Future research needs to compare cross-cultural and religious differences in climate change risk perceptions.

Endnotes

- 1 Intergovernmental Panel on Climate Change (2012), p. 18.
- 2 World Tourism Organization (2012).
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- 15 Lipset, D. (2011).
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- 37 Weber, E. (2006).
- 38 Morteux, C. and Barnett, J. (2009).
- 39 Lipset, D. (2011).