

RESORT MANAGEMENT PERSPECTIVES ON CLIMATE CHANGE: A PILOT STUDY FROM THE MALDIVES

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ABSTRACT

Climate change has become an important aspect to consider for the development of destinations. In particular low-lying island states, many of which are highly susceptible to socio-economic and natural implications following from climate change and many of which are economically dependent on visitors arriving on (long-haul) flights, are in need of establishing 'appropriate' adaptation and mitigation measures to ensure future sustainable growth. The Maldives is an island nation with suitable strategies already in place. Yet, little has been done to examine the awareness, support and willingness of tourism stakeholders to put such into action. This paper explores selected viewpoints of Maldivian resort managers through an online questionnaire which was distributed in the end of 2009. Findings show high awareness of climate change and its impacts as well as of existing policies and strategies. However, participants raised concerns about current and projected consequences of climate change for the local as well as for the global industry. Albeit willingness for the realization of measures is discernable, strong doubts have been uttered towards governmental enforcement and monitoring. This pilot study underlines the little progress made in strengthening collaboration between the governmental institutions formulating adaptation and mitigation measures and the resorts implementing these. Comparison between the findings and more recent studies points out that, still, ways must be found to advance adaptations. Recommendations are made.

Keywords: climate change; risk perceptions; assuming responsibility; resorts; Maldives.

1. INTRODUCTION

Climate change is increasingly recognized as a global concern. Among others, international organisations and national governments have stressed both the urgent 'need for societies around the world to adapt to unavoidable changes in climate' (UNWTO, 2008, p.29) and the necessity to mitigate greenhouse gas (GHG) emissions accelerating these changes. In this regard, the energy-intensive and natural resource-based tourism industry is in a dilemma. The steadily growing industry accounts for around 5% of total GHG emissions (Gössling *et al.*, 2009). On the other hand, the United Nations World Tourism Organisation (UNWTO) has highlighted so-called vulnerable 'hotspots' (UNWTO, 2008, p.101), which define areas that are projected to suffer particularly from social, economic and environmental effects following climatic changes. Referring to these effects, small island developing states (SIDS) are deemed to be particularly susceptible and are foreseen to suffer most from, for instance, water and food shortages, increasing costs for business operations, infrastructural damages, coral bleaching, loss of biodiversity, more extreme weather events, sea-level rise and changing travel patterns (Mimura *et al.*, 2007). Scholars call for adaptation and mitigation strategies to be implemented for these 'hotspots' specifically (Becken and Hay, 2007; Mimura *et al.*, 2007). Yet, strategy formulations to moderate impacts of changes in climate and their successful implementation are also very much reliant on the recognition and support by the local industry, including national and international investors, where these will have to be enforced (Becken *et al.*, 2011; Butler and Bramwell, 2005; Simpson *et al.*, 2008).

Much attention has been paid to the Maldives, a low-lying SIDS set around 700km southwest of the Indian subcontinent, when discussing adaptation and mitigation measures. In the past decade, the island nation has become an oft-cited example, particularly because of its low-lying islets and their vulnerability to sea-level rise and beach erosion. The government has carried out a number of awareness raising activities (e.g. an underwater cabinet meeting in the second half of 2009) and has announced that the Maldives are to

become carbon neutral by 2020 (Nasheed, 2009). Tourism constitutes the single most important economic activity in the Maldives. Government targets and revenues could be significantly affected, should tourism stakeholders not be driven to engage in adaptation and mitigation measures (Gössling *et al.*, 2009).

Although a number of articles have recently addressed issues relating to tourism stakeholder involvement in adaptation and mitigation (Becken *et al.*, 2011; Zubair *et al.*, 2011), studies on climate change perceptions and factors for participation by touristic stakeholders (including accommodation, transport or other touristic providers as well as tourists) in policy formulations and implementation still remain scarce (UNWTO, 2008). This study, which derived from a small-scale student project carried out in the end of 2009, adds to a limited field of research, delineating resort managers' perspectives in this regard. Initially, the reader will be provided with a brief overview of mechanisms and strategies in place. The concepts of risk perception and responsibility will then be touched upon to further investigate the engagement and the attitude of the sampled stakeholders.

2. RESPONSES TO CLIMATE CHANGE

The destination image of the Maldives is inevitably connected with 'sun, sand and sea'. Tourism developed from the 1970s onwards and arrivals have been relatively constantly increasing since. Visitors per annum quadrupled in the past 20 years to more than 750,000 in 2010 (MMA, 2011). Tourism contributed more than 30% directly and almost 60% indirectly to the GDP that same year (MMA, 2011). Resorts play a key role for the touristic development of the island nation. Generally, resorts are defined as 'all-inclusive accommodations' which have predominantly been established on the 'one island one resort concept' (MTAC, 2010, p.1). They are the most important type of accommodation, with 97 resorts holding nearly 21,000 beds in 2009, which account for approximately 84% of the nation's total bed capacity (others being safari vessels, hotels and guest houses) (MTAC, 2010). Resorts are fairly self-sufficient. These usually generate own power and most often have own water supply, sewerage and waste management systems available. Commonly, resorts are owned by the investor, whereas islands are possessed by the government, which is responsible for single lease agreements. More than 50 new islands have been leased for further resort and hotel development with scheduled openings from early 2011 onwards (MTAC, 2010).

Despite steady growth in arrivals and revenue, the industry is faced with a number of challenges coming along with climate change. The Maldives are composed of around 1190 atolls of which 80% are 1m or less above mean sea level. Much of the touristic infrastructure is built at or close to the coastline. Furthermore, resorts often possess over-water structures and have frequently been established on islands no larger than 0.1 km². Climate change thereby poses not only challenges to the viability of the 'sun, sand and sea' product, but literally to the mere existence of these resorts. Accordingly, Maldivian resorts have been described to be 'among the most vulnerable and the least defensible in the world' (MHE, 2009a, p.26). On the other hand, resorts likewise contribute indirectly but substantially to the national GHG emissions since they predominantly attract long-haul European visitor markets (MTAC, 2010). As Gössling *et al.* (2009, p.112) point out, a 'flight alone (return) will usually entail emissions of about 2t CO₂ (corresponding to Frankfurt/Germany to Male, a 7,940km journey), which is more than half of what could currently be seen as sustainable per capita emissions over a whole year'. Although there is still scepticism evolving around the share of anthropogenic greenhouse gases accelerating climatic changes, there is a growing acceptance of the IPCC consent and, thus, emissions deriving from transport are an important factor to consider when talking about assumptions of responsibility.

In recent years, the Maldivian government has made efforts to develop and gradually implement schemes for adaptation and mitigation to climate change on the basis of technological transfer, financial support and capacity building (McMullan, 2009). Being the mainstay of the national economy and due to its low resiliency, the tourism industry, and specifically resorts (and their development), have become a focal point (UNDP, 2011). The Ministry of Tourism, Arts and Culture (MTAC) is the key institution for planning and implementing appropriate strategies. The Third Tourism Master Plan 2007-2011 (TTMP) is the current strategy in place to guide future touristic development in the Maldives, with the Fourth Tourism Master Plan forthcoming in 2012. Albeit the mentioning of awareness raising and promotional activities to encourage environmental conservation and engagement in monitoring of coral reefs or in implementing environmental management systems, little is indicated in the TTMP to further address the susceptibility of tourism towards climate change. However, tourism adaptation and mitigation has been integrated in a number of multi-sectoral strategies (often prepared in cooperation with other government ministries), among these are the Third National Environment Action Plan (MHE, 2009b) and the Strategic Action Plan 2009-2013 (Government of the Maldives, 2009). Herein, measures adhere, for instance, to the development of a climate risk profile for tourism, to formulations of adaptation strategies to reduce tourism's energy consumption by fuel, to the enforcement of the environment protection law, to tourism developers' compliance with

Environmental Impact Assessments (EIA) and to the facilitation of workshops and monitoring. Despite the implementation of a Green Tourism Tax for holiday-makers to the Maldives in the end of 2009, strategies seem to be predominantly established on the goodwill and on the 'moral sense' of tourism stakeholders employing tools for adaptation and mitigation rather than on actual mandatory regulations. 'Promoting', 'encouraging' and 'proposing' (MTAC, 2007a) the use of renewable energy or the implementation of the 'least harmful' waste and sewage systems (MTAC 2007b), for instance, are generic terms and phrases frequently utilized. Furthermore, the MTAC and the Ministry of Housing and Environment (MHE) (formerly the Ministry of Housing, Transport and Environment) recognize weaknesses in coordinating and monitoring current and future developments of resorts, amongst others, due to a lack of human resources. This may be an explanation why 'environmental management in the tourism industry is highly self-regulated and [...] well ahead of government policy', but also why there is a great variety in practice(s) (UNWTO, 2008, p.23). Furthermore, the earlier government of Ex-President Gayoom commented that 'development comes after survival' (Reuters, 2009). This unwillingly leads to the questioning of motivations of the Maldivian government for the implementation of schemes, at least in earlier years.

The ownership structure of islands is another point to consider when discussing adaptation schemes. Both interests of the government and of resort owners in investing in measures may be restricted due to expiring lease agreements. The 'struggle for survival', hence, may also be a 'struggle for politics' and, accordingly, a hindrance for sustainable resort development.

However, in August 2011, the United Nations Development Programme announced in corporation with the MTAC, a forthcoming strategy which is exclusively to 'increase climate change resilience in the Maldives through adaptation in the tourism sector' under its Environment, Energy and Disaster Risk Management programme (UNDP, 2011). The plan includes, amongst others, modifications of tourism businesses' infrastructure, community-based adaptation projects and improved risk financing systems like a weather-index insurance that is based on the actual weather conditions (where contractual thresholds of rainfalls are determined) rather than on damages following from weather events.

While a wide range of strategies have been or are to be formulated and implemented, tourism stakeholders' perceptions of risk of climate change and of the need for adaptation and mitigation measures, including perceived responsibilities, have barely been examined to date.

3. RISK PERCEPTION AND RESPONSIBILITY

Due to increasing awareness, research into risk perceptions of climate change has particularly developed in the past decade. In this regard, examinations have largely focused on the lay public (Leiserowitz, 2005, 2006; Lorenzoni and Pidgeon, 2006) and on policy-making (Belle and Bramwell, 2005). But what does the term 'risk' actually imply? When do we perceive something to be risky and do measures of different levels of risk exist?

Commonly, risk perceptions are described as an 'integral by-product of environmental beliefs' (O'Connor *et al.*, 1999, p.462) that focuses on negative consequences (O'Connor *et al.*, 1999; Slovic, 1987). It includes 'behavioural intentions' and inheres notions of the decision-making process, where cognitive (*e.g.* beliefs/awareness) and affective (*e.g.* feelings) components towards 'specific objects, ideas or images' (Leiserowitz, 2006, p.48) are incorporated. External social (*e.g.* media, society) and psychological (*e.g.* values, needs) stimuli play a major role, making risk perceptions a complex imagery construction (Harrison *et al.*, 1996; Leiserowitz, 2006).

In his studies among American lay people, Leiserowitz (2006, p.45) points out that risk perceptions 'are critical components of the socio-political context within which policy makers operate' and that the 'support or opposition to climate policies (*e.g.* treaties, regulations, taxes, subsidies) will be greatly influenced by public perceptions of the risks and dangers emanating from global climate change' (Belle and Bramwell, 2005; Leiserowitz, 2006, p.45). At the same time, awareness of climate change impacts does not necessarily indicate that high priority is given to the matter. Geographical distance and time likewise depict important components, *i.e.* risks are often projected to other places and moments in time (Lorenzoni and Pidgeon, 2006). Actual behaviours then only become intended, when 'attitudes in question are strong relative to other (possibly conflicting) [risky] attitudes, and based on direct [and heuristic] experience' (Blake, 1999, p.264).

However, while Bickerstaff and Walker (2002, p.2175) utter that 'forms of environmental risk are collective in causation', the question evolves to what extent the individual, the single business or institution in fact feels responsible for reducing consequences, if risks are perceived. The concept of responsibility has been regularly mentioned in relation to risk perceptions. It represents a vital factor in triggering changes in personal or collective behaviour and in interpreting, managing and/or (re-)acting according to perceived personal or general risks and it is, thus, further discussed in the following.

Responsibility and the level of (re-)action is generally equated with the identification of an ‘actor’s role as an agent or cause’ (Bickerstaff and Walker, 2002, p.2177). Following this, it includes the ‘actor’s’ knowledge and control of the consequential (re)action which may be seen as a duty or liability. Within the literature, regular concepts linked to perceived duties or liabilities are 1) blame, 2) denial, 3) fairness and 4) willingness: 1) blame is the shifting of responsibility to others which may be for various reasons. One, for instance, may be the response to helplessness towards an intangible hazard. Another is the assignment of blame of a ‘(moral) accountability’ to a ‘causal responsibility’ (Bickerstaff and Walker, 2002, p.2177). Blame is, therefore, at times also described as a form of denial: one cannot be made ‘responsible for the negative outcome because [...] one] was not the perpetrator and should therefore not be held accountable’ (Tomlinson and Mayer, 2009, p.98). The 2) denier justifies rejections to any personal contribution to solutions claiming that negative consequences often have their roots in external forces (Lorenzoni and Pidgeon, 2006). On the other hand, this can also be seen as a call for 3) global fairness, to include anyone in feeling liable and in accepting responsibility. Furthermore, engagement may depend on 4) the level of the individuals’ willingness and awareness of own capabilities to take responsibility as a single person (Jaeger *et al.*, 1993). While Jaeger *et al.* (1993) point out that social learning (including the perception of benefits) is a major factor for contribution, Lorenzoni and Pidgeon (2006) suggest that contribution, in turn, may only be suggestible through governmental intervention. Governments as well as environmentalists are often being held accountable and responsible for action-taking by the lay public (Harrison *et al.*, 1996). Yet, as Darier and Schüle (1999) consider in their study on lay public perceptions on policy-making, that ‘the risk of not taking bolder and more daring actions [mainly by governments] (...) might reinforce pessimism as to the collective ability and willingness’ to address global climate change’. Accordingly, restrained actions or a stagnation of implementation within government, but also within the international community may, for some, further justify non-action. Others argue that a healthy level of distrust, the ‘critical trust, consisting on reliance (...) allows a practical, yet limited, initiation and implementation of authority-driven regulation of an issue’ (Lorenzoni and Pidgeon, 2006, p.86). Additionally, willingness among the lay public is found to be moderate as long as it does not interfere too much with personal life and as long as it is not too costly (Lorenzoni and Pidgeon, 2006). Blake (1999) has summarized some of these issues in his model illustrating the obstacles for addressing environmental concerns (Figure 1). Individuals and institutions have to overcome a variety of barriers towards action-taking, among these, the lack of interest, the shift of responsibilities due to power constraints and the intentional behaviours that are limited to time, space and finances. These hindrances inter-relate and make responsibility per se a difficult and complex matter to overcome until (re)actions take place (Blake 1999; Eden, 1993).

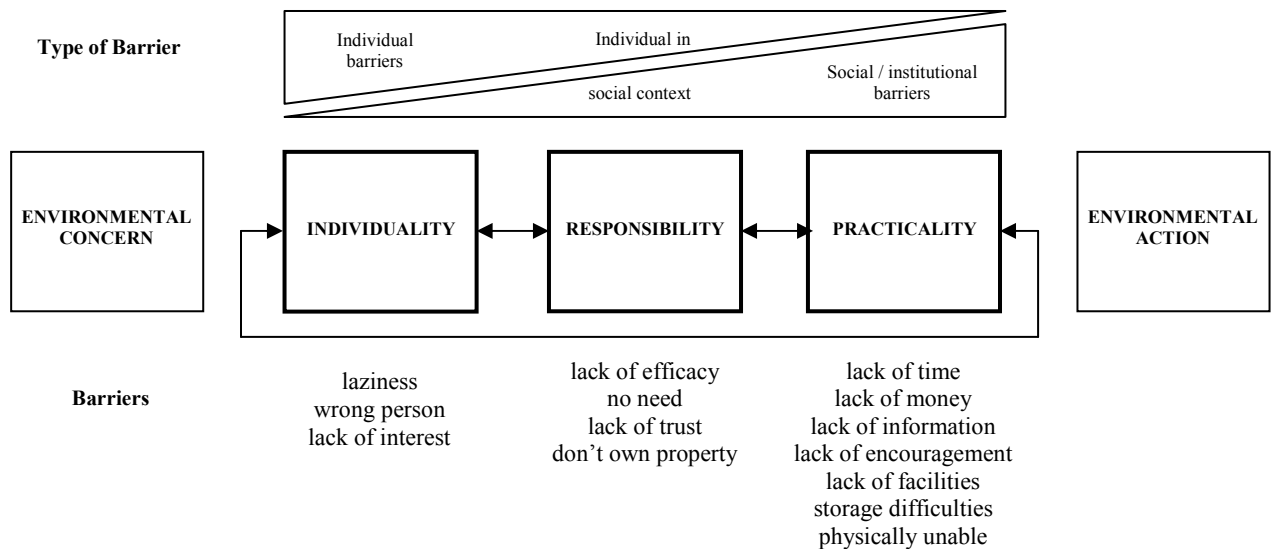


Figure 1. Barriers between environmental concern and action (Blake, 1999).

In reference to the Maldives, several issues arise: resorts may not consider themselves as part of the ‘climate change dilemma’ since the greatest share of GHG-emissions is caused by the transport sector. Furthermore, particularly SIDS may demand for fairness. Global climate change should be dealt with globally and as such needs to be dealt with equally and according to emission quantities. In addition, if the Maldivian government fails to mobilize a global willingness for adaptation and mitigation, it is assumed that support for government policies will decrease.

4. METHODS

An internet-based questionnaire was set up for ten days in late November 2009. This broadly covered two sections. The first part related to questions of awareness, risk perception and responsibility referring to climate change and adaptation and mitigation strategies in place. The second part looked at the relationship between resorts and the government as perceived by the resort staff holding a middle or top management position. This involved questions concerning the level of policy support as well as the perceived level of collaboration and communication between the individual business and the government.

In order to make potential respondents aware of the questionnaire, a link was distributed via e-mail. For this, resorts' e-mail addresses were selected referring to an official list published in the MTAC's Statistical Yearbook 2009 which stated 94 resorts at the end of 2008 (MTAC, 2010). Subsequently, 104 e-mail addresses were generated through the resorts' homepages. Then, a preliminary notification was sent which introduced the study and which asked for a direct contact with a staff member at the management level. This resulted in 20 direct e-mail contacts. Reminders were sent to both direct contacts and generic e-mail directions after one week, which generated another 12 direct contacts. Albeit the sampling method and the fact that the method for inquiry entail great limitations like the unreliability of e-mail directions, the uncertainty of who the recipient actually is or the low participation rate, the online survey nevertheless helped the author to get in contact with managers of different resorts and obtain data in a fairly short time frame for this pilot.

5. RESULTS

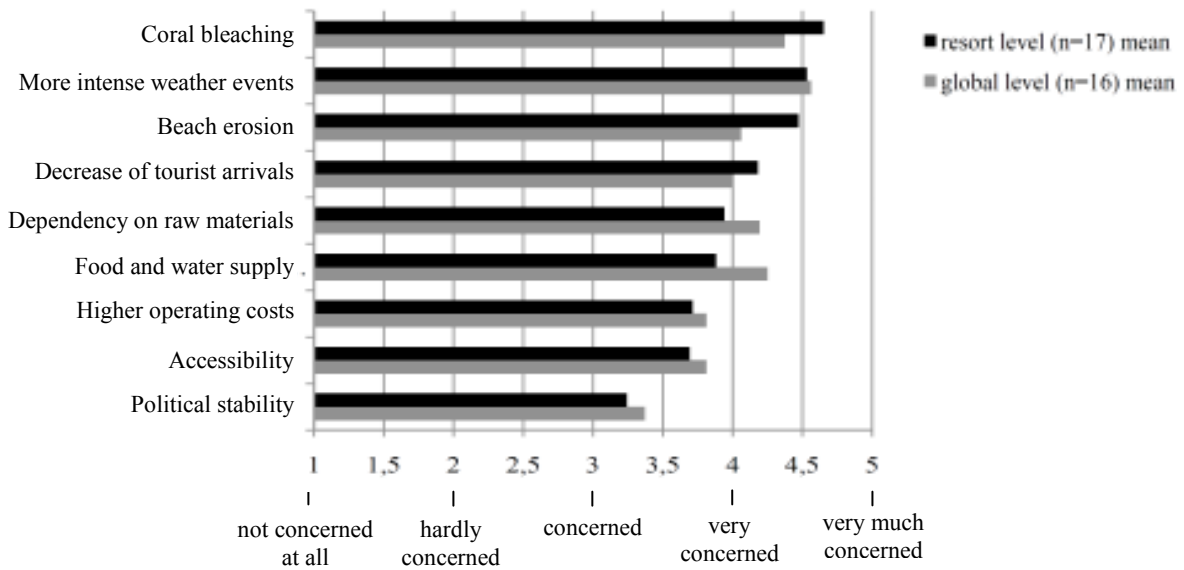
5.1. The Sample

A total number of 17 questionnaires were considered for elicitation, which equates with a response rate of 18%. Respondents were represented by top-management ($n=5$) (General Manager) and middle-management ($n=12$) (e.g. Human Resources, F&B, Rooms, Sales, Environment) staff. Out of the represented resorts, six have been fairly recently established (0-5 years), six have been running between 6-15 years and five have been in operation for more than 16 years. The size of the participating resorts were stated to be between 51-100 beds ($n=5$), between 101-150 beds ($n=6$) and more than 151 beds ($n=6$). Seven of the resorts were owned by a Maldivian investor, nine were owned by a foreign investor and one was registered as a joint venture. Expiration of lease agreements were stated to be within the next 6-15 years ($n=3$) or in more than 15 years ($n=6$). Eight respondents did not know about the agreement's termination date.

5.2. Awareness of Climate Change

Initially, respondents were asked what they believed to be the most current key issue to affect the global tourism industry as well as the single resort in the Maldives. Herein, the majority named economic issues (global tourism $n=20$; resort $n=22$), like the world economy, competition or energy costs, before environmental (global tourism $n=15$; resort $n=18$), social (global tourism $n=8$; resort $n=4$) and political issues (global tourism $n=3$; resort $n=3$) like global warming/ climate change, beach erosion, biodiversity or swine flue/diseases and safety. Noticeably, 80% of those respondents who generally mentioned the economic crisis also ranked it to be the most important issue amongst global tourism issues. Even at the resort level, all respondents who referred to the economic crisis, ranked it as the most important issue.

When asked about their level of concern about projected environmental, economic and social impacts following from climate change for the global tourism industry as well as for the individual resort, respondents revealed that they were most alarmed by environmental consequences (Figure 2). However, a few participants also highlighted interrelations existing between the various impacts, stating that '*all aspects of life could be affected*' and that more intense weather events will '*limit the opportunities for human life and tourism specifically*'. Overall, there was a fair correlation of concerns of resort- and global-level issues expressed by respondents. This included also a high awareness of global risks emanating from climate change to be indeed also largely applicable to the Maldives. Partially, this may be due to the fact that (at least) four out of the 17 participating management employees held an 'Environmental Manager' position.



| | | Mean scores global tourism | Mean scores resort |
|--------------------------|-----------------------------|-------------------------------|-----------------------|
| Environmental | More intense weather events | | |
| | Coral bleaching | 3,33 | 3,55 |
| | Beach erosion | | |
| Economic | Dependency on raw material | | |
| | Higher operating costs | 2,94 | 2,78 |
| | Accessibility | | |
| Social/ other | Decrease of tourism numbers | | |
| | Political stability | 2,87 | 2,77 |
| | Food and water supply | | |

1=not concerned at all; 2=hardly concerned; 3=concerned; 4=very concerned; 5=very much concerned

Figure 2. Level of concern towards projected environmental, economic and social climate change impacts

5.3 Taking Responsibility and Awareness of Government Activities

When participants were asked for their resorts' capacity for minimizing effects of climate change, nearly all managers stated that they were able to help reduce impacts through adapting and mitigating and through supporting their employer in action-taking. Respondents furthermore underlined that *'all resorts should be forced to be involved and to contribute to environmental activities such as educational programmes to associates as well as to customers'* and that *'tour operators and resort managers should provide much more information about environmental protection'*. Remarks largely demonstrated pro-activeness and support of the government's strategy not only at the collective (*'the world is watching the Maldives and we need to lead the way'*), but also at the individual level, *'each individual should make a difference'*.

Subsequently, managers were questioned on awareness of national plans relating to the reduction of climate change effects and causes, which have already been implemented or which will be implemented in the future. A total of nine different strategies were mentioned. Overall, respondents seemed most aware of the governments' plans to become carbon neutral by 2020 ($n=6$) which was followed by the implementation of waste management systems ($n=3$). Single mentions also included the Green Tourism Tax, the use of renewable energy, or the implementation of EIAs. Subsequently, respondents were asked for their support for specific policies which have either been proposed or which have already been adopted by the Maldivian government.

All set items, except for the Tourism Tax and construction regulations, received strong to very strong support by participants (Figure 3). Yet, support does not necessarily signify responsibility or action-taking. A number of critical remarks indicated also scepticism. One manager pointed out in reference to the construction regulations that these were *'not really happening'*, while others highlighted that *'the quality of assessment has not been great [for the EIA, and generally...] stronger guidelines and controls by the*

government are a must for long-term benefits' or that 'international health and safety standards should be monitored'. Hence, respondents generally demanded for 'stronger enforcement'.

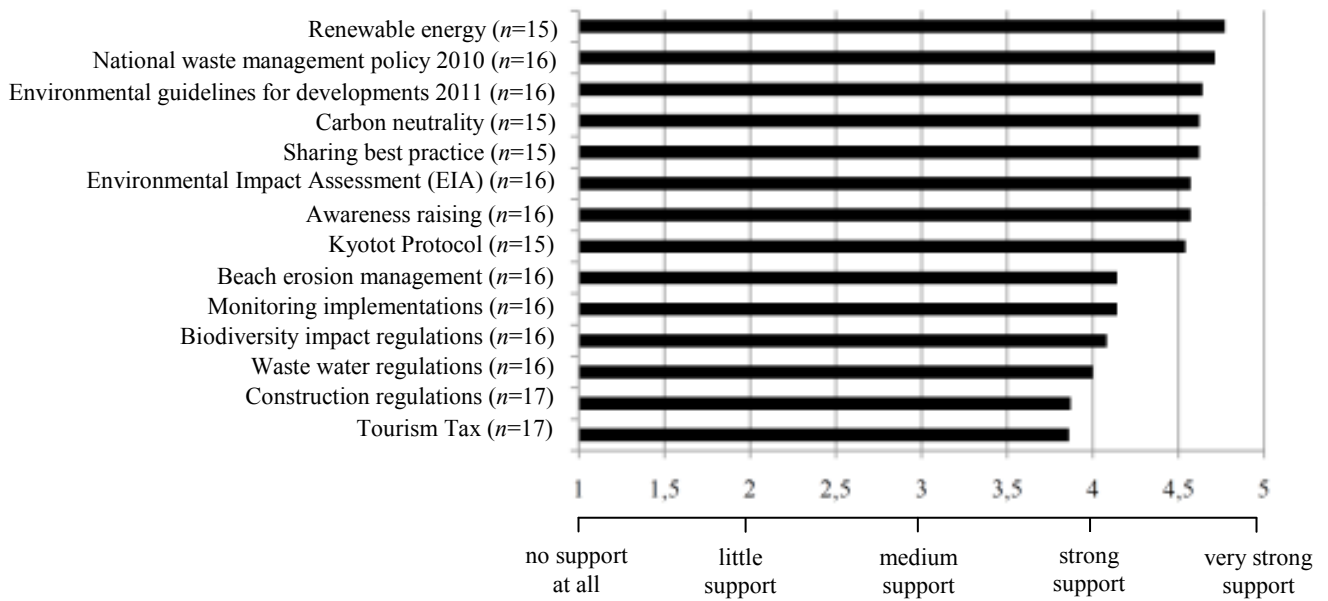


Figure 3. Respondents level of support for specific climate change policies.

Survey participants were also asked whether environmental, economic and social impacts should be tackled at the local (e.g. community or individual resort), at the national (government) or at the international level (e.g. NGOs). While the majority of respondents generally agreed that environmental issues should be dealt with on an international basis ($n=11$), there was less consensus whether economic issues should be coped with at a national ($n=8$) or international level ($n=8$) and whether social issues can be tackled from a local ($n=5$), national ($n=6$) or international level ($n=6$). One manager emphasised that, concerning social and economic matters, there 'should be a drive by the national government in each country and implement best practice to its citizens'.

Interestingly, some resorts seemed to be in contact with the government on a more regular basis than others when it came down to climate change related activities. The highest involvement with the government on the subject matter was stated to be through industry meetings ($n=10$), the monitoring of implementations ($n=9$), advice giving ($n=8$) and through participation in workshops ($n=7$). Three managers, however, stated that there had been no contact between the resort and any national representative at the time of survey completion. It should be noted that five out of seven participating resorts which were owned by a foreign investor had been involved in at least three activities carried out or organised by the government. Greater involvement was also observable for those resorts with the expiration of lease agreements in more than 15 years.

6. DISCUSSION AND IMPLICATIONS

The tourism industry of the Maldives is both vitally affected by changes in climate already taking place or projected to take place and significantly contributing to national carbon emissions. However, the sector, and as part of it the single resort, is in a dilemma. On the one hand, tourism constitutes *the* economic driver for the Maldives, but on the other hand, the dependency on long-haul tourist arrivals and cost-conscious planning needs in times of global financial uncertainties may have caused difficulties in planning and in supporting governmental policies for adaptation and mitigation. This study therefore examined selected resort management perceptions of climate change impacts and causes and their knowledge and support of national strategies in place or in the process of planning.

Generally, the sampled resort managers have shown high awareness of climate change and its impacts. Following economic issues like the financial crisis, environmental issues including climate change and its consequences were thought to be key aspects to equally affect the global tourism industry and Maldivian resorts. However, present and direct economic impacts seemed to matter more to resort managers (at least in the second half of 2009) than predicted (indirect) long-term impacts of climate change. However, when asked further about perceived levels of risk of climate change impacts, the sample expressed strong to very strong

concerns, whether this referred to social, to economic or to environmental implications. Hence, it is interesting to note that climate change was neither referred to other time periods nor to other geographic areas. Yet, perceived risks and spatio-temporal recognition of climate change impacts did not show that managers assumed greater or less responsibility in taking action. Although respondents were aware of selected adaptation and mitigation strategies set out by the government, doubts arose over their implementation. Survey participants foremost demanded for more 'stringent' steering of governmental institutions, referring to the implementation of policy regulations, to their monitoring, and to their being equally implemented and enforced within all resorts. Issues of fairness and of blame seemed to be the dominating barriers for the implementation of measures at the resort level. Currently, implementations such as building standards or environmental impacts assessments are currently rather complied with on a voluntary basis. Participants demand that fairness is to be created among all resorts through the equal enforcement of regulations and standards, while government is blamed for 'loose governance'. Although willingness for comprehensive action-taking was expressed, action was postponed due to such deficiencies. As one manager illustrated,

We in theory support all of these programmes, however, have not seen the dedication of the government yet in implementing these policies. We are aware that a lot of burden was taken over from the previous government and that it is difficult to get many new policies implemented. However, there is only so much that resorts can do when the government has no national facilities, e.g. waste management. I hope that more stringent regulations come into place soon, so that we can avoid more environmental degradation and climate change contributions.

Similar observations have also been made in earlier studies on the lay public which showed that governments are often held liable to formulate, implement and monitor policies (UNWO, 2008). Likewise, findings have shown greater concern about climate change impacts and, generally, a high level of support for adaptation and mitigation strategies. Whether or not there is an interrelation can only be assumed (O'Connor *et al.*, 1999).

Overall, the sampled managers expressed concern about climate change. Nonetheless, their willingness to support measures, implementations of measures has proven to be difficult. On the one hand, limited collaboration between governmental institutions and the industry may partially explain shortcomings. On the other hand, the expiration of lease agreements within the next 15 years may at times put plans on hold. Management companies may have little interest investing in reconstructions or capacity building, if climate change impacts are considered to affect single resorts 'only' in the long run.

Although the selected resorts clearly recognized the importance to integrate adaptation and mitigation measures in the Maldives, it still appears to be a long way for mainstreaming measures addressing projected impacts, particularly if the industry remains reactive rather than proactive.

A number of recommendations have been developed to overcome some of the potential barriers to engage resorts in adaptation and mitigation. While the introduction of an Environmental Manager position is considered a valuable starting point, not all resorts will be able to finance such an additional position. Therefore, the appointment of one staff member becoming responsible for at least attending industry or other tourism stakeholder meetings referring to climate change and who then is to communicate discussions and results to the resort staff may further help to strengthen awareness for the issue among employees. Furthermore, those resorts having created Environmental Manager positions should be given further responsibility, i.e. such managers could be made liable for the resort's adherence to certain regulations. Successful self-monitoring could then be rewarded by the government. For other resorts, advisors and monitoring would need to be provided. In addition, voluntary action to prevent impacts through adaptation and mitigation should be compensated for individual resorts.

This paper provided an overview over resort management staff perceptions towards climate change adaptation and mitigation in the Maldives. Overall, it illustrated that there has been limited progress made in implementing and enforcing policies that refer to adaptation and mitigation measures with the accommodation sector so far (Becken *et al.*, 2011; Zubair *et al.*, 2011). The comparative importance of action needs and other factors like the financial crisis has not been addressed by the local government to date. This paper highlighted deficiencies in enforcement and monitoring of mandatory measures based on risk and responsibility perceptions of climate change and needed adaptive and mitigative measures respectively at the resort level.

Alternatively, the government could also think about whether or not it could be feasible to have NGOs monitoring activities on a temporary basis or to appoint a specific division which is to coordinate and supervise measures taken in the tourism industry.

Future research could concentrate on case studies, examining the thresholds towards action-taking of single resorts and their staff through qualitative methods. Interviews could be particularly useful in

preserving individual narratives of climate change and exploring further factors for (re-)action. These could further explore measures which have been taken in recent years to adapt to climate change or to mitigate own carbon emissions. Moreover, the role of long-term scenarios in strategy progresses could be worth of further investigation. In addition, it would be interesting to examine perceptions of climate change held by the Maldivian authorities and to get to know how resorts deal with holiday-makers' notions of changing travel patterns, amongst others. Also, the effects of ownership structures and their influence on short- and long-term planning should be considered in the future.

7. REFERENCES

- Becken, S. & Hay, J. "Tourism and Climate Change. Risks and Opportunities" (Channel View Publications, USA, Cleveland, 2007).
- Becken, S., Hay, J. and Espiner, S. 'The risks of climate change for tourism in the Maldives', in Butler, R. And Carlsen, J. (eds), *Island Tourism: Sustainable Perspectives* (CABI Publishing, UK, Wallingford, 2011), pp.72-84.
- Belle, N. and Bramwell, B. "Climate Change and Small Island Tourism: Policy Maker and Industry Perspectives in Barbados." *Journal of Travel Research*, **44**, 1 (2005), pp.32-41.
- Bickerstaff, K. and Walker, G. "Risk, responsibility, and blame: an analysis of vocabularies of motive in air-pollution(ing) discourses." *Environment and Planning A*, **34**, 12 (2002), pp.2175-2192.
- Blake, J. "Overcoming the 'Value-Action Gap' in Environmental Policy: tensions between national policy and local experience." *Local Environment*, **4**, 3 (1999), pp.257-278.
- Butler, N. and Bramwell, B. "Climate Change and Small Island Tourism: Policy Maker and Industry Perspectives in Barbados." *Journal of Travel Research*, **44**,1 (2005), pp.32-41.
- Darier, E. and Schüle, R. "Think Globally, Act Locally"? Climate change and public participation in Manchester and Frankfurt." *Local Environment*, **4**, 3 (1999), pp.317-327.
- Eden, S. "Individual environmental responsibility and its role in public environmentalism." *Environment and Planning A*, **25**, 12 (1993) pp.1743-1758.
- Gössling, S., Hall, M. and Scott, D. 'The challenges of tourism as a development strategy in an era of global climate change', in Palosuo, E. (ed), *Rethinking Development in a Carbon-Constrained World: Development Cooperation and Climate Change* (Ministry of Foreign Affairs, Finland, 2009), pp.100-119.
- Government of the Maldives. 'The Strategic Action Plan 2009-2013' (Republic of the Maldives, Malé, 2009).
- Harrison, C., Burgess, J. and Filius, P. "Rationalizing environmental responsibilities." *Global Environmental Change*, **6**, 3 (1996), pp.215-234.
- Jaeger, C., Dürrenberger, G., Kastenholz, H. and Truffer, B. "Determinants of Environmental Action with Regard to Climate Change." *Climatic Change*, **23**, 3 (1993), pp.193-211.
- Leiserowitz, A. "American Risk Perceptions: Is Climate Change Dangerous?." *Risk Analysis*, **25**, 6 (2005), pp.1433-1442.
- Leiserowitz, A. "Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values." *Climatic Change*, **77**, 1/2 (2006), pp.45-72.
- Lorenzoni, I. and Pidgeon, N. "Public Views on Climate Change: European and USA Perspectives." *Climatic Change*, **77**, 1/2 (2006), pp.73-95.
- McMullan, P. 'Maldives – Climate Change' (International Financing for Climate Change Action Seminar, Ministry of Foreign Affairs, Republic of the Maldives, Malé, 2009).

- MHE - Ministry of Housing and Environment. 'Climate Change and Maldives' (Republic of the Maldives, Malé, 2009a).
- MHE - Ministry of Housing and Environment. 'Third National Environmental Action Plan' (Republic of the Maldives, Malé, 2009b).
- Mimura, N., Nurse, L., McLean, R.F., Agard, J., Briguglio, L., Lefale, P., Payet, R. and Sem, G. 'Small islands', in Parry, M., Canziani, O., Palutikof, J., Van der Linden, P. and Hanson, C. (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, UK, Cambridge, 2007), pp.687-716.
- MMA - Maldives Monetary Authority. 'Annual Economic Review 2010' (Republic of the Maldives, Malé, 2011).
- MTAC - Ministry of Tourism, Arts and Culture. 'Regulation on the Protection and Conservation of Environment in the Tourism Industry' (Republic of the Maldives, Malé, 2007).
- MTAC - Ministry of Tourism, Arts and Culture. 'Statistical Yearbook 2009' (Republic of the Maldives, Malé, 2010).
- Nasheed, H.E. Mohamed. 'Summit on Climate Change'. United Nations Official Home Page available at <<http://www.un.org/webcast/2009.html>> (15 October 2009).
- O'Connor, R., Bord, R. and Fisher, A. "Risk Perceptions, General Environmental Beliefs, and Willingness to Address Climate Change." *Risk Analysis*, **19**, 3 (1999), p.461-471.
- Reuters. 'Maldives wants emissions cuts but not from tourism' Reuters Official Home Page <<http://www.reuters.com/article/latestCrisis/idUSSP220009>> (7 November 2009).
- Simpson, M., Gössling, S., Scott, D., Hall, M. And Gladin, E. 'Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices' (United Nations Environmental Programme, University of Oxford, United Nations World Tourism Organisation, World Meteorological Organisation, France, Paris, 2008).
- Slovic, P. "Perception of Risk." *Science*, **236**, 4799 (1987), pp.280-285.
- Tomlinson, E. and Mayer, R. "The Role of Causal Attribution Dimensions in Trust Repair." *Academy of Management Review*, **34**, 1 (2009), p.98.
- UNDP - United Nations Development Programme. 'UNDP and Government Sign Project to Increase Resilience of Tourism Sector to Climate Change'. Press Release UNDP Official Home Page available at <<http://undp.org.mv/v2/?lid=99&dcid=271>> (1st September 2011).
- UNWTO - United Nations World Tourism Organisation and United Nations Environmental Programme, 'Climate Change and Tourism: Responding to Global Challenges' (UNWTO, Spain, Madrid, 2008).
- Zubair, S., Bowen, D. and Elwin, J. "Not quite paradise: Inadequacies of environmental impact assessment in the Maldives." *Tourism Management*, **32**, 2 (2011), pp. 225-234.