

# ***Integrating Tourism into Adaptation to Climate Change in the Maldives***

## **Summary Report of the Initial Consultations (14-23 May 2008)**

**Convened by the Ministry of Environment, Energy and Water**

### **Lead Organizations:**

**Ministry of Environment, Energy and Water  
Ministry of Tourism and Civil Aviation  
Maldives Association of Tourism Industry  
United Nations World Tourism Organisation  
United Nations Development Programme**

### **Report prepared by**

**John Hay, Gabor Vereczi, Amjad Abdulla and Ali Saleem**



# 1 Introduction

The tourism sector of the Maldives faces major risks related to or exacerbated by climate change. These include accelerated shoreline and beach erosion, temporarily reduced water availability, interrupted supply chain, coral bleaching, and physical damage to property. A project is currently being developed that aims to demonstrate adaptation initiatives that will reduce the vulnerability of the tourism sector, and its natural and human resource base, to the impacts of climate variability and change. These demonstration activities will, in turn, enhance the sustainability of the natural resources and the quality of life of the people of the Maldives, and also generate global environmental benefits.

Funding has been provided by the Global Environment Facility (GEF) to develop a full proposal aiming at a 3-4 years project with the possibility of up to \$US 1 million funding from GEF. The Implementing Agency is the United Nations Development Programme (UNDP), and the Executing Agency is the United Nations World Tourism Organisation (UNWTO). The Ministry of Environment, Energy and Water is the coordination agency in the Maldives. In this capacity, the Ministry of Environment, Energy and Water convened a stakeholder workshop on the issue of climate change and tourism. This followed a round of stakeholder consultations.

The initial consultations took place between 14-23 May, in order to inform key stakeholders about the proposed project, to collect information and perspectives and record feedback on the proposed aims and approach of the project. The consultations consisted of interviews and direct meetings with key stakeholders, visits to resorts and discussions with managers, and a stakeholder workshop held on 21 May, hosted by the Ministry of Environment, Water and Energy. The workshop aimed to facilitate further discussion of the topic of climate change and tourism, identification of key issues, and to secure support in principle for the proposed project. The workshop was designed to encourage the sharing of information, knowledge and expertise on climate change and variability, and their interactions with the tourism sector. The intention was for the workshop to also provide an opportunity to discuss current policies and policy gaps, as well as the need for capacity building and training.

## 2. Summary of Stakeholder Meetings and Field Visits to Resorts

Stakeholder meetings and field visits to resorts provided an excellent opportunity to identify how present day weather and climate extremes and variability were impacting on resorts and their operations, and the actions they were taking to reduce the adverse consequences. The findings are summarized in Table 1. It is expected that more examples will be identified as a result of further in-country consultations.

The remainder of this section summarizes the key points arising from stakeholder meetings and field visits to resorts.

### **Ministry of Environment, Energy and Water (contact person: Amjad Abdulla, Director General)**

Many resorts are already adapting to the impacts of climate change (e.g. sea water used for cooling systems). Adaptation pilots and demonstration projects should include live aboard boats and resorts anticipating renovation. There is a significant

**Table 1**

**Examples of Current Coping Strategies Used by Tourism Operators  
in the Maldives to Reduce the Adverse Consequences of Present Day  
Weather and Climate Extremes and Variability**

<b>Climate Risk Events</b>	<b>Consequences of Significance to Tourism</b>	<b>Current Coping Strategies Practiced by the Tourism Industry</b>
Elevated sea level, including high wave incidents	Coastal erosion, land loss, flooding, inundation	Moveable groynes, coastal revegetation, open-structured jetties, beach nourishment, wave-breakers, seawalls, elevated structures
Changed ocean currents and/or wind patterns	Coastal erosion, land loss, changed surfing conditions, dangerous swimming conditions	Most of above, plus strengthened early warning, awareness and safety programmes
Elevated ocean and lagoon temperatures	Coral bleaching, algal blooms, fish morbidity	Coral gardens, beach and lagoon clean-up campaigns; changed marketing strategies
Elevated air temperatures	Heat stress for humans, plants and animals, vector- borne diseases	Activity options, education and awareness raising, shade plants and structures, deep ocean water cooling systems, upgraded health-care facilities, mosquito fogging, vegetation and water body management
Increased rainfall variability and greater extremes	Drought, flooding	Water conservation, storage and reuse, rainwater harvesting, improved storm-water management
Extreme high winds	Outside activities curtailed, structural damage	Early warning, strengthened safety programmes, alterative activity options, building design

gap between environmental policies and on-the-ground practices. Important background documents include the National Capacity Self Assessment. Health tourism (spas) is of growing importance. The Maldives Association for Travel Agents and Tour Operators (MATATO) and the Live Aboard Association of the Maldives (LAAM) are key industry stakeholders, along with the Maldives Association of Tourism Industries (MATI). Possible sources of co-financing include the industry sector, the World Bank and UNWTO's partners.

**Ministry of Tourism and Civil Aviation (contact: Mohamed Farshath, Assistant Director)**

The current Tourism Master Plan includes a proposal that all reports have an environmental management system (EMS). Most resorts have a healthy reef system and clean beaches. On the other hand, most inhabited islands have degraded reef systems (as a result of over fishing and contamination from waste), and beaches covered with litter. This contrast needs to be recognised in the project design.

The Ministry can assist the project in a number of ways, within the terms of the Tourism Master Plan, including:

- information;
- liaison with the private sector;

- assisting with securing support and endorsement by MATI and other industry players;
- providing a focal point within the Ministry;
- facilitate cooperation between relevant Government agencies, including the Atolls, Planning and Fisheries Ministries; and
- facilitating meetings etc during the preparatory phase of the project – these meeting should include deciding on roles and responsibilities as well as budgets (Ministry involvement should have no budgetary implications).

**United Nations Development Programme (contact: Mohamed Inaz, Assistant Resident Representative – Environment and Energy)**

The project should build on the Atoll Ecosystem-based Conservation project, in terms of implementation – e.g. multiple ministries involved. Tourism should be promoted as a change leader/driver in environmental management practices.

**Maldives Association of Tourism Industries (MATI) (contact person: Sim Ibrahim Mohamed, Secretary General)**

The industry is already proactive in terms of environmental management practices, and is working well beyond regulatory requirements. It should not be a target in isolation from other sectors for further improvements in environmental management. Other sectors and civil society should be improving their environmental management practices, to bring them to a standard comparable to those in the tourism industry.

However, the tourism industry recognizes the need to adapt to climate change, as well as exploit any opportunities. Thus MATI is supportive of the project. Possible industry partners for adaptation pilots and demonstration projects include those which have won the Green Leaf award. These include Banyan Tree and Sun Island. The latter has won the award twice and is a large resort. Paradise Island is small and on a man-made island, so may not be a good option. Similarly for Soneva Fushi – it is on a large island but has only 30 rooms. Soneva Gili is a possible option. The project should consider how to minimize the environmental impacts of reclamations undertaken when building some of the new resorts.

Major locally-owned resort operators in the Maldives are Universal, Villa, Champa, Sunland Travel, A.A.A and Sun Travel.

**Maldives Association of Travel Agents and Tour Operators (MATATO) (contacts: Mohamed Firaq and Yousuf Riffath)**

Safari boats are used for surfing and diving, with a focus on South Maldives. Currently there are 118 safari boats, with an average of 12 paying passengers each. The boats use people from inhabited islands to dispose of their waste and also for laundry and cleaning services. Muli Island (Meemu Atoll, South Maldives) and Fainu Island (Baa Atoll) are key islands for servicing safari boats. The boats generate large amounts of waste such as bottles and cans. Individual resorts transport their own waste to the garbage island, if it is within an appropriate distance. There is no service for handling the waste generated by the safari boats based at Hulumalé.

Transportation costs are high, with often large distances between populated islands. Weather and marine conditions are often quite rough. Thus a networked waste collection system is unlikely to be viable. Some waste composting is practices, as well as waste minimization (e.g. use of bulk containers for solids and liquids).

There is a need to raise awareness and provide incentives to avoid bad waste management practices for safari boats. Waste management facilities have large set up costs. The Government should tender out a collection service and give exclusive rights for a number of years. Otherwise operators are reluctant to enter into providing waste collection for fear that another operator will come in and undercut their price.

There have been major changes in the weather over the last four years, including changes in the rainy seasons – dry season had more rain and the rainy season was drier than normal. No changes observed in the incidence of high ocean swells. However, current patterns have changed around Malé due to construction of the waste island.

**Marine Research Centre (contact: Dr Mohamed Shiham Adam, Executive Director)**

The Centre has a marine research laboratory on an island south of Malé. The Centre is suffering from a lack of funding to develop the laboratory. The Centre has a very active coral reef research programme – reports are available on its web site.

**Banyan Tree Resort (contact: Abdul Azeez Abdul Hakeem, Director of Conservation)**

The company has been environmentally- and culturally-minded in the development of its resorts and Corporate Social Responsibility programmes from the initial planning stages of each location housing a Banyan Tree or Angsana Resort and Spa. For example, The Banyan Tree Maldives Marine Laboratories at Banyan Tree Maldives Vabbinfaru, Angsana Resort and Spa Ihuru and Angsana Resort and Spa Velavaru actively work to protect, conserve, conduct research within, and educate about the coral reef environments surrounding the resorts and adjacent inhabited islands. The main conservation projects include coral reef regeneration (through regrowing broken fragments of corals on three Electric Reef projects and 15 coral gardens), sea turtle conservation, and beach erosion monitoring and prevention (Figure 1).



Figure 1. Temporary (i.e. removable) beach protection works.

The Banyan Tree Maldives Marine Laboratory has removed nearly 2,000 kg of rubbish from local island reefs in the Maldives. It was the first to raise endangered green sea turtles from hatchlings, then tag and release them back into the wild. When the Maldives were facing a crisis of fish dying by the thousands in late 2007, Banyan Tree brought an internationally-recognized expert in algal-bloom-induced fish mortality to the Maldives to work in collaboration with the Maldivian government and the Banyan Tree Maldives Marine Lab. The Government passed a decree in 2007 that all resorts must now employ a marine environment officer to interact with guests and teach them about the importance of protecting the marine environment. This is an approach pioneered by the Banyan Tree Maldives Marine Lab

Besides performing coral reef conservation activities at Banyan Tree's and Angsana Resort & Spa's resort islands, all resorts have actively engaged locals in the environmental activities. Local associates actively participate in monthly reef cleanings – they are brought to local islands in order to conduct reef cleanings, removing nearly 2,000 kg of rubbish from local island reefs. Community stakeholders are engaged from the planning stages of all community projects. The Banyan Tree actively follows through and engages with local community stakeholders in order that they might continue the community projects once the company hands them over. The company also returns to the local communities for all projects on a regular basis to gauge the ongoing success of their work in terms of how the project has benefited their lives

The Banyan Tree Maldives Marine Lab is in the initial stages of developing a Maldives Marine Census by 2010 to catalog all marine research conducted in the Maldives and a checklist of marine flora and fauna for the Maldives in high resolution. As part of this initiative, the Marine Lab aims to conduct research across a broad range of atolls in the Maldives (sampling over 800 km in latitude) with a team of international scientists. The Banyan Tree Maldives Marine Lab aims to further develop institutional partnerships with Universities worldwide and to help coordinate marine research at all of the coastal Banyan Tree and Angsana Resorts & Spas worldwide.

#### **Kuda Huraa Four Seasons Resort (contact: David Emig, Recreation Manager)**

The resort undertakes coral gardening, marine conservation and solid waste management (sorting, reuse and recycling). The Ba Atoll resorts cooperated to eliminate shark fishing. They undertake manta ray tracking and whale shark research.

The resort is experiencing increased invasion of sea grass. This reduces the enjoyment of guests. Sea grass is not a native to the Maldives – it is an invasive species, probably from Sri Lanka. Increasing coverage of sea grass may relate to disturbance of the lagoon, as a result of dredging channels and building jetties. Placing coral frames on the lagoon bottom results in the die off of the sea grass under and adjacent to the frame.

The resort is experiencing increased incidence of diseases, notably chicken pox and dengue fever. Mosquito fogging is undertaken once per week. A neighbouring island has a large degraded mangrove area which is a breeding ground for mosquitoes. But the mangrove area is also critical to the island, for fishing etc.

Half the resort staff live on an adjacent inhabited island. The hotel built a sewage treatment plant and a desalination plant there.

Erosion management is practiced, including beach nourishment. Dredging has accelerated beach erosion in some parts of the resort (Figure 2).



Figure 2. Beach erosion at the Four Seasons Resort.

The Maldives has made significant advances, especially in terms of environmentally sound fishing practices – no nets, pole or line fishing, less by-catch and catch limits. The resort has strict limits on the size of fish it buys, and will not buy fish from a boat that has shark fins.

The three day weather forecast is very general and hence not that useful for planning recreational activities. A weather station for each resort might be useful. Tropical storms and large ocean swells are not a problem for resorts located inside the outer reef.

#### **Six Senses Resort and Spa (contact: Musab Anees, Social and Environmental Responsibility Manager)**

Several climate and other impacts are being experienced and addressed, including:

- beach erosion – the resort is spending heavily on erosion control; beach nourishment is a daily process (Figure 3); the resort has its own barge, which is used to dredge sand and deposit it on the beaches; another focus is on beach vegetation, including the use of creepers;
- degradation of reefs – artificial reefs are being constructed;
- sea grasses – the new fish plant that is adjacent to the resort has increased nutrient levels in the lagoon, leading to an increase in sea grasses;
- mosquitoes – fogging is undertaken every day, using linseed oil; mosquitoes are a bigger problem on Soneva Fushi; the resorts assist the neighbouring islands to fog; and
- waste – problem is lack of proper disposal, especially from the nearby inhabited islands.



Figure 3. Beach clean up at the Six Senses Resort. Sand is pumped onto this beach at frequent intervals.

From July 2008 Six Senses resorts will be plastics free. The company is working towards a sustainable purchasing policy, with a red list (e.g. endangered species – no caviar or local lobster is served) and a green list. The company is seeking Green Globe certification – Soneva Fushi is already certified.

Soneva Gili has an organic garden on the island. There is an even bigger one at Soneva Fushi. This allows the resorts to grow most of their vegetables. The rest of the vegetables are bought from adjacent islands. Similarly for fish. The company provides assistance with technology – e.g. worm farming at Soneva Fushi.

Soneva Fushi will become a zero waste resort by September 2008 as it is converting waste to energy. For example, all charcoal will be made in-house, biogas will be produced from waste, biofuel will be produced from waste cooking oil and mulching and composting will be practiced.

The resort uses deep ocean water for cooling – water is taken from 300m depth outside the reef and is pumped throughout the resort.

Six Senses operate a social environmental responsibility fund (SERF) – ½% of the revenue from all resorts globally goes into the fund. This represents approximately \$½ million per year. The funds are spent at the local level plus for some international activities. Some 65% of the revenue from the Soneva Gili resort is paid into the SERF. Soneva Fushi is going to become a carbon zero resort. It offers a carbon offset programme for guests, with Converging World sponsoring a wind turbine in an Indian village. The aim is to be a carbon neutral company. From July 2008 the resort will have a 2% carbon tax, to offset carbon emissions. The funds will also go to Converging World. Soneva Fushi is to host a symposium in June, organized by the Web of Hope, Sri Lanka and the United Kingdom. It will be a three day brainstorming session on the opportunities to address the consequences of climate change. The focus will be on opportunities, as the desire is to share positive stories.

Six Senses is working with the Ministry of Environment on the Atoll Ecosystems Conservation Project in Baa Atoll, including establishing a fund for the conservation

of marine ecosystems. Four Seasons and Six Senses cooperate in the Baa Atoll. A major problem is the decline in sharks in the Maldives. The resorts took leadership to ban shark fishing. They asked 80 resorts to sign a letter, but only 20 signed to show their support. More policy support is needed for such initiatives to be effective.

**Full Moon Resort (contact: Mohamed Abdulla, Duty Manager)**

Overwater bungalows were first built in 1993 (Figure 4). At that time there was no knowledge that the sea level is rising. Insufficient height was allowed between the ocean and the floors of the bungalows – guests complain of the noise from the waves hitting the floor. Connecting walkways were rebuilt in 2006, after the tsunami. It raised awareness of the risk of high sea levels.



Figure 4. Overwater bungalows and coastal protection at Full Moon Resort.

Weather patterns are changing – there is now greater inter-annual variability. In the past wind patterns were more consistent than they are now. There is now high variability in wind conditions. There are now stronger currents. This is a risk to guests who go swimming.

The kill off of trigger fish is now occurring – not observed before. The cause is unknown. Dead fish are washed up on the shore. Snorkelling and other activities are degraded.

Wave breakers were constructed after the resort was built – to try and protect the sand on the beaches. No beach nourishment is undertaken. There is no coral gardening. The house reef is very degraded – guests are taken to a nearby protected reef.

The resort managers are not committed to environmental management. There is thus a need for strong regulations and regular inspections, with enforcement. The Government needs to put pressure on the resort management (Universal, a local company). There is also a need for incentives. A resort exchange/cooperation programme would be useful. Staff need to be educated – they don't know about global warming and its implication for tourism. It would be useful to have awareness programmes for both staff and tourists.

### **Bandos Island Resort (contact: Mr. Dean, Owner and Director)**

Garbage disposal sites are full. Informal dumping of waste is a problem. Inhabited islands need budgets so that staff can be employed to manage the waste in a sound manner. The central Government provides funding to inhabited islands, but generally the funding is insufficient to cover waste management etc. In July 2009 island councils will have 100% elected membership. They will be responsible for waste management etc.

### **Villa Shipping and Trading Company (contact: Mohamed Khalid, Manager, Training and Development)**

Villa has four operating resorts. A fifth resort is currently being renovated. Resorts include Paradise Island and Sun Island.

A coral restoration project has been quite successful – now into its third generation. Villa uses “environmental clubs” made up of staff members. These were an initiative of staff. Villa also involves school children from neighbouring inhabited islands.

## **3. Summary of Stakeholder Workshop (21 May 2008)**

Mr Abdullahi Majeed, Deputy Minister of Environment, Energy and Water, opened the workshop. The agenda is provided as Annex 1. Workshop participants included representatives of numerous government ministries and of international organizations and other relevant stakeholders. The workshop was noteworthy for the large and active participation of representatives of the tourism industry (see Annex 2)<sup>1</sup>. A press release related to the workshop is provided as Annex 3.

### **a. Opening Remarks**

Mr Abdullahi Majeed, Deputy Minister of Environment, Energy and Water, highlighted that tourism is the main economic activity in the Maldives, and contributes about one third to the gross domestic product of the Republic. Tourism infrastructure of the 87 resorts, with 21,156 beds, makes up the bulk of economic infrastructure, in terms of both investment value and quantity. Each resort has its own power generation, water production and sewerage system. More than 1200 over-water structures have been developed as guest rooms, spas and restaurants in tourist resorts. The tourism sector is expected to grow significantly over the next few years, adding 53 new resorts with an additional 10,000 beds. Mr Majeed also noted that one of the projects on the Maldives' National Adaptation Programme of Action (NAPA) is “Enabling Adaptation of Tourism Businesses and Tourism Dependent Communities to Predicted Climate Change and Variability”. The goal of the project is to develop and implement adaptation initiatives that will reduce climate-related risks to the tourism sector, to tourism dependent communities and to tourism's natural resource base. He highlighted that the proposed project being discussed at the workshop would meet the requirements for the tourism-focussed project in the NAPA.

Dr Abdulla Mausoom, Deputy Minister of Tourism and Civil Aviation stated that, while climate change is a threat to the tourism sector of the Maldives, it is only one of several threats to the security of the industry. It can be addressed if an integrated approach is taken.

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<sup>1</sup> Other relevant contacts are also listed in Annex 2.

Mr Xu Jing, Regional Representative of the United Nations World Tourism Organization (UNWTO) for Asia and the Pacific, welcomed the opportunity for his organization to partner with such key players as the Government of the Maldives, the United Nations Development Programme (UNDP) and with the tourism industry. The lessons learned in the proposed project, and the demonstration projects themselves, will provide invaluable information and guidance to other countries in the Asia-Pacific region.

Mr Sim Ibrahim Mohamed, Secretary General of the Maldives Association of Tourism Industry (MATI) emphasized that the integrated effects of climate change will have far-reaching consequences for tourism businesses and destinations. Significantly, climate change will generate both negative and positive impacts in the tourism sector and these impacts will vary substantially by market segment and geographic region. The implications of climate change for any tourism business or destination will also partially depend on the impacts on its competitors. A negative impact in one part of the tourism system may constitute an opportunity elsewhere. Consequently, there will be 'winners and losers' at the business, destination and nation level.

Mr Sim announced that MATI is fully committed to the planned project and highlighted that, while the Maldives is not the cause of climate changes, it will be much affected. Indeed, the Maldives is a "double victim" – concerns about climate change are beginning to affect long haul tourism while the Maldives is already experiencing the direct, adverse impacts of climate change. Any reduction in tourism has widespread social and economic repercussions for the Maldives. He argued that the Maldives should not be penalized twice. It should continue to benefit from long haul tourism, but efforts must be made to reduce the consequences. Mr Sim also highlighted that the coral reefs of the Maldives are an important absorber of CO<sub>2</sub>. Similarly, at the Second International Conference on Climate Change and Tourism (Davos, Switzerland, October, 2007) Sri Lanka was described as an "Earth Lung", due to its ecosystems being significant absorbers of CO<sub>2</sub>.

## **b. Keynote Presentations<sup>2</sup>**

Mr. Gabor Vereczi, Chief of the Environment and Quality Section, UNWTO, started by detailing some of the main findings of recent key international reports, such as those produced by IPCC, UNDP, and the Stern Review on the Economics of Climate Change. He highlighted three important implications for the global economy and development, namely:

- Climate change has ceased to be an environmental issue; it has become a global development challenge;
- Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century; and
- Climate change is the greatest challenge facing humanity at the start of the 21<sup>st</sup> century; failure to meet this challenge raises the spectre of unprecedented reversals in human development.

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<sup>2</sup> Copies of the presentations are in Annex 4.

He also described results of a new study published by UNWTO, UNEP and WMO on climate change and tourism, including the numerous ways in which climate change is already impacting tourism, the ways in which those impacts are depicted in the media, the influence environmental and related considerations have on decisions made by tourists, and the responses of both the tourism industry and organizations such as UNWTO to the risks arising from climate change. Mr Vereczi also described the approach taken and lessons learned from a similar tourism and climate change project in the Fiji Islands (South Pacific) and how this experience could benefit the proposed project.

Mr Vereczi described some of the many benefits which would come from the proposed project, including:

- Integrated approach to policies and management actions;
- Part of a national portfolio of adaptation strategies;
- Dealing with impacts both at tourism resorts and at adjacent inhabited islands, including ecosystem and atoll management;
- Mainstreaming good practices in environmental management at resorts;
- Supporting the implementation of the new Tourism Master Plan;
- Positioning Maldives as an international leading destination in environmental management and climate response, highlighting that “Maldives is climate ready” in that it is already preparing for the unavoidable consequences of climate change; and
- Developing a model that can be widely disseminated and adapted at other small island tourism destinations.

He ended by underlining the strategic importance of this pilot project in the Maldives in the UNWTO action plan to implement the recommendations in the Declaration made at the Davos Conference on Climate Change and Tourism in October 2007.

The presentation made by Professor Hay described current and anticipated climate-related risks to tourism in the Maldives, the outcomes of the initial stakeholder consultations, a possible project concept and practical examples of project activities. He stressed that isolated responses to climate change are no longer appropriate. Such isolated responses include protection and beach nourishment to address coastal erosion; planting of heat tolerant corals to combat coral bleaching; flexible marketing and product diversification in response to changed weather patterns; desalination, water conservation and rainwater harvesting during periods of drought; and sound waste management practices to reduce degradation of reef ecosystems. While these are all appropriate responses in themselves, when they are implemented in isolation the benefits are often small and difficult to sustain.

Professor Hay reported that some of the key findings from the initial stakeholder consultations were:

- Climate change is not all negative for tourism in the Maldives – there are opportunities, not just problems and costs;
- An integrated approach is needed;
- Increased coordination between ministries and between operators (resorts, safari boats) is required;
- The proposed project can contribute to policy implementation, including the Tourism Master Plan and the NAPA;
- Many examples of good practice in responding to climate change already exist (Table 1);
- Key information gaps need addressing; and

- A priority is to build a knowledge and skill base, in both the private and public sectors.

In response to these and other findings, Professor Hay reported that the essential elements of the proposed project had been identified, as represented in the Figure 5.

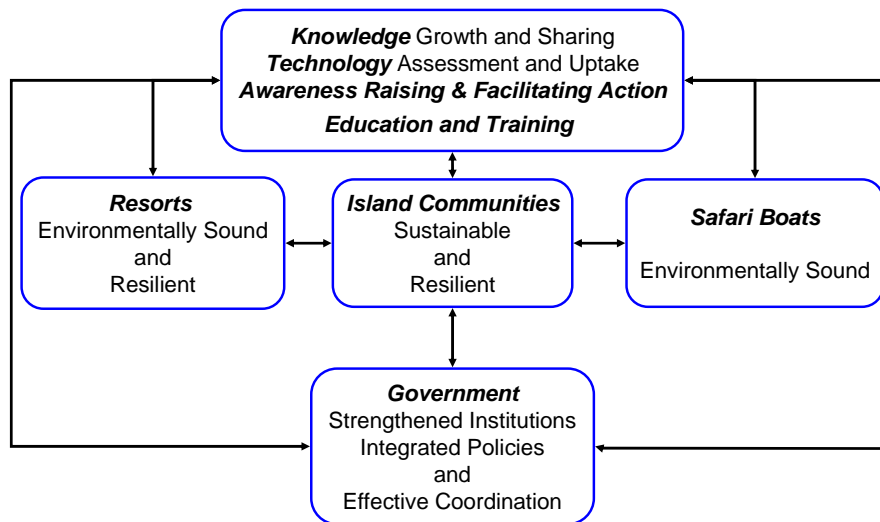


Figure 5. Proposed components of the project

Professor Hay concluded by presenting some practical examples of activities that might be undertaken in the proposed project, including:

- Documenting and sharing existing and emerging good practices:
  - Reef restoration
  - Erosion prevention and control
  - Improved environmental quality and livelihoods of island communities
  - Health of tourists and resort staff
  - Waste reduction, reuse, recycling and environmentally sound disposal
- Addressing the need for additional information:
  - Current patterns and sediment transport
  - Targetted short-term and seasonal weather forecasts
  - Environmentally sound waste management technologies
- National and Regional Knowledge Centre
  - Education and Training (e.g.)
    - Climate change topics infused in existing curricula of the Maldives College of Higher Education (MCHE)
    - Training programme for environmental officers
    - Training programme in environmental management systems (EMS) for tourism operators

A presentation by the Maldives Tourism Promotion Board was made by Ms Aishath Hameed, Marketing Executive. She noted that the size of the global green-tourism is growing by 20% - 34% per year, with an increase in the experiential tourism including nature-, culture- and eco-tourism. This reflects a shift in consumer demand, including:

- 20%-30% of travellers are now aware of the needs and values of sustainable tourism;

- 10%-20% of travellers look for 'green' options; and
- 5%-10% of travellers demand 'green' holidays

Ms. Hameed also described the many initiatives resorts in the Maldives are taking as they increase their focus on green and responsible tourism. These include:

- Deep water cooling systems;
- Reuse of organic wastes;
- Incineration for solid waste and use of bottle crushers and waste compactors;
- Heat recovery systems added to power generators;
- Use of buoys rather than anchors;
- Cleaning up the reefs around the resorts; and
- Building jetties so that the movement of sand and currents are not inhibited.

### **c. Discussions**

Considerable time was devoted to a discussion session facilitated by Mr Vereczi. Several key themes and suggestions emerged.

#### **Environmental Management in the Tourism Sector**

The Maldives is an international champion of climate change, as a key environment and development issue. For example, in 1987 the Maldives brought climate change to the attention of the UN General Assembly, for the first time. Nationally, the strong linkage between environment and development is exemplified by the tourism sector.

Environmental management in the tourism industry is highly self-regulated and is well ahead of government policy. However, practices vary greatly among resorts and there is a need for a more consistent application of EMSs for all resorts, with information on experience being collected in a central database and then disseminated. The Marine Research Centre offered to provide backstopping for an environmental database, including a web-based online system specific to the tourism sector. Such a system has been proposed as part of the World Bank Environmental Management Project. It should also include a component on strategic environmental assessment. QMS Maldives has the capacity to audit the EMS of a resort, to ensure that good environmental practices are in place and are not just ad hoc activities. QMS Maldives is assisting some resorts to gain ISO14,000 accreditation.

Resorts need to take a life cycle approach to dealing with waste issues, including purchasing policies and packaging requirements. The environmental commitment of resorts was questioned by some participants, including whether most resorts had staff with appropriate environmental qualifications.

Transport and safari boat operators should improve their compliance with the environmental regulations as well as adopting good practices on a voluntary basis. Regulations covering safari boat operators were issued in 2007 and are now being phased in. One problem is a lack of infrastructure for waste disposal – such infrastructure is lacking on most inhabited islands. The waste dumped on these islands often floats out to sea when there is a high tide. Safari boats need to change the engine oil regularly, such as on a weekly basis. However, there is no where to take the used oil for disposal. The problem is serious as the boats often operate in marine protected areas, yet oil is disposed in the ocean. Dhonis are often hired to take resort garbage to the "garbage island", but to save money and time the garbage may be dumped into the sea or on an uninhabited island.

There was a consensus that, in general, adequate environmental regulations exist for the tourism sector, but there is a lack of awareness of good practices and inadequate compliance monitoring. For example, environmental impact assessment (EIA) regulations are in place, but operators need to take responsibility for the quality of the reports prepared by their environmental consultants. In turn, environmental consultants are hampered by the lack of feedback on the EIA reports they submit on behalf of their client resorts, as well as on the annual environmental management reports. Improved feedback from government will encourage resorts to improve the quality and relevance of the reports they submit. There is no clear format and standards for the environmental monitoring reports

There should be an assessment of the strengths and weaknesses of the EIA process related to resorts, including documenting the lessons learned from EIA monitoring. The procedures should also be more streamlined. There was general agreement regarding the lack of a robust compliance monitoring mechanism to ensure that resorts comply with EIA requirements. Even if there are complaints there is no follow up. Thus there is a need to enhance compliance monitoring and enforcement, making use of the resulting monitoring information to build a better knowledge of environmental conditions. Participants agreed that the government should enhance its efforts to ensure compliance with EIA conditions, but it was also acknowledged that currently the government lacks the capacity to undertake this work. A suggestion was made to establish an independent implementation unit in government, with responsibility for follow up to EIAs, including compliance monitoring and enforcement.

Several participants made the point that the tourism industry is already burdened by an excessive number of regulatory and other requirements, including being expected to provide assistance to adjacent inhabited islands. Thus, integration efforts need to be handled with sensitivity. Another example of the burdens placed on resorts is that over 80 have waste incinerators while an island (Malé) with a population of over 100,000 lacks an incinerator. However, several participants questioned whether waste incineration is appropriate, given possible health problems.

Many participants argued that resorts should not be expected to manage the waste produced by adjacent inhabited islands – people paying, say, \$1,000 per night, do not want to see waste coming on to the resort island. Such a practice places too much burden on a resort.

## **Adaptation**

Adaptation activities need to be placed within an adaptation framework, such as the one developed by UNDP. This would encourage other projects to take up suggested adaptation initiatives even before the proposed project starts officially.

EIA requirements provide an excellent entry point for adaptation, by ensuring that development takes climate change into account. There is a need to clarify what is meant by building the resilience of a resort, a reef, etc. Some resorts have a five to ten year perspective so they do not consider sea-level rise as an issue for their resilience. However, it was pointed out that extreme high sea levels are increasing at a far greater rate than is the mean sea level. This, and the evidence of rapid increases in the frequency of other weather extremes, means that climate change has greater immediacy and urgency than many people believe.

Spatial planning of resorts is important – for example, beach garden villas might not be suitable in all situations. Some islands are not at all suitable for resorts as their

coastlines are too dynamic. This needs to be taken into account, perhaps even before an EIA is prepared, and there is a need to apply Strategic EIA, which takes a step ahead of usual processes, determining feasibility and potential aspects of resort development at early stages of spatial planning.

A key question relates to the knowledge gaps for adaptation. For example, what adaptation interventions are relevant to an atoll ecosystem and, with regard to coral recovery, what are the strategies for seeding of atolls by polyps? Will the proposed project provide support for science-based research? Research has shown that some reefs are much more resilient than others – e.g. to coral bleaching. There are large differences between north and south Maldives. It was explained that GEF funds can be used only for targeted research, but the research component will be a key part of the project, given that effective adaptation responses need to be based on sound science and information.

### **Demonstration Activities**

Advice was sought on possible representative study areas for demonstration activities. The following suggestions were offered:

- Study the atoll reclamation resort project, including developing lessons learned that can then be replicated – but only if such atoll reclamations are going to be government policy in the longer term;
- Study a new resort development, which is at the design stage – e.g. Lam Atoll in south Maldives or a resort planned for the northernmost atoll development area, such as Hulagem Atoll, where there is a large island with half designated for resort development and half for the local population;
- Study an established resort for which renovations are planned – e.g. near Malé;
- Study the Four Seasons Resort in Malé atoll along with an adjacent inhabited island that has a marine protected area, a mangrove protected area and good dive sites;
- An area of high biodiversity, including freshwater lakes; and
- Integrated transport initiatives, including reducing the number of trips between a transport hub (e.g. an airport) and a resort.

Participants suggested that it is preferable to consult with stakeholders on potential study areas, and then make a selection.

### **Improving Integration**

A general consensus was that many things are happening to improve the environmental performance of the tourism industry, but there is an urgent need for these individual initiatives to come together in a more integrated approach. One opportunity is to build on the goodwill that was built during development of the NAPA, and especially the Technical Committee on Climate Change. For example, its membership facilitates institutional coordination and hence integration. There needs to be incremental improvement in addressing climate change. Building on existing capacities is the best way to do this. Thus the Technical Committee could function as the steering committee of the proposed project, with additional members included if needed.

When tourism development proposals are assessed there is a need to consider more than just the resort and its lagoon and reef. There is a need to also consider impacts on adjacent islands and to also consider the opportunities provided by them. For example, an adjacent island may already have a harbour. A new resort should be

required to use that, rather than building a new one. Local islands can also be used to house the families of resort workers. Initiatives such as these will help ensure that environmental management extends beyond the resort island and includes adjacent islands.

Integration should include ensuring there are effective linkages with other projects (e.g. the World Bank's Environmental Management Project) and that full use is made of the information generated in the EIAs undertaken by resorts and other entities.

An overall suggestion was that for the selection demonstration areas and activities an ecosystem approach should be used by focussing on a cluster of islands. There should be good access to the cluster, to reduce logistic requirements. Further suggestions were made to consider demonstration areas with different stages of tourism development (e.g. one in the central area, and others in the south or north).

### **Capacity Constraints and Enhancement**

The National Capacity Self Assessment (NCSA) showed that there is a major need for capacity building. For example, in the Maldives everything is centralized. A meeting such as the present one would never be held outside Malé. There is a need to expand capacity building to the more distant atolls. Holding a similar meeting in one of the more distant atolls would require capacity to be built in advance of the meeting, but capacity would be built even further as a result of people participating in the meeting. It is important to have increased capacity in the more distant atolls, so that people have the ability to both make informed decisions and to implement them in a manner that best suits the local situation. At present all decision making is centralized.

How might training be best conducted outside Malé? There was general support for a mobile training facility. This would build on previous experience with such an approach.

There is a need to build capacity in the Ministry of Tourism, so it has the ability to ensure high quality EIAs are undertaken. This would be helped by improved liaison with the Environment Ministry. Environmental consultants based in the Maldives are very busy, and often lack the capacity to meet the large workload. There was general agreement that the number of qualified environmental consultants is such that they are unable to address all the environmental management needs of the resorts.

There is considerable variation between the resorts in the level of integration of EMS practices. Some resorts have well-developed systems, others lack the capacity to achieve good practices in environmental management. Most tourists know that humans can damage the environment, but many do not see their behaviour as environmentally damaging, even when it is. However, in general tourists have a high environmental awareness. Nevertheless, resorts should provide environmental managers who can advise tourists on how to avoid adverse impact on the environment. The support of resort owners is needed if this is to happen.

There is a need to link awareness and responsible behaviour, by using behavioural change tools, including behavioural change communication. Awareness raising needs to focus on the school level as well. It is important to connect awareness and action.

## Needs

During the discussion several further specific needs were identified, including:

- Commitment to implementing policy, including integrated policies and cooperation between ministries;
- Infrastructure such as that for waste transport and disposal, to facilitate sound environmental management;
- Additional information on current and sediment patterns as these are changing, and the knowledge is important for diving - experts from Italy have been coming to the Maldives for more than a decade; a book on ocean conditions in the Maldives will soon be published; sediment transport patterns have been studied in detail by research institutions in Australia, and possible linkages can be explored;
- Improved (more accurate and area specific) short range weather forecasts as well as wave/swell forecasts and improved long range weather and climate forecasts;
- Information that is packaged in ways that make it easier to use, and there are people trained to interpret data in ways that ensure its optimal use; and
- Long term approach to human resources capacity building, with a focus on in-country training, including strengthening the MCHE.

To date, the problem with weather forecasts has been low accuracy and over-reaction to forecasts of bad weather. Information needs to be packaged in ways that make it easier to use by tourism stakeholders.

In summary, capacity building should have the following components:

- EMS in resorts;
- Information sharing;
- Training for government officials on EIA, EMS and related issues, including public-private partnerships
- The use of climate and weather information in the tourism sector (collaborations with the MET Service)
- School programmes that raise awareness and encourage responsible behaviour;
- Formal education and training at the MCHE.

## Greenhouse Gas Emissions from Tourism

Emission issues are normally considered as mitigation issues, but in tourism in fact these are inherently linked with adaptation strategies for the following main reasons:

- Energy management is part of integrated EMS practices at tourism resorts and operations. Applying alternatives to electricity generation by burning fossil fuels can reduce environmental contamination, enhancing resilience of ecosystems, and can also boost the image of responsible operations
- The adverse effects of mitigation policies is becoming a main concern of tourism destinations, especially in light of measures planned, programmes and media targeting consumers about emissions associated with long haul flights. As it was stated in key policy documents issued at the Davos, London and Cartagena meetings organized by UNWTO and partner UN agencies, mitigation policies should not jeopardise poverty reduction aims of developing countries, especially where tourism means a lifeline for the countries' economy. The concept of carbon-neutral destination is relevant to the Maldives, similar to the Earth-Lung concept developed in Sri Lanka, given that its terrestrial and marine ecosystems are important absorbers of greenhouse gasses. The application of this concept can be explored for the Maldives.

## **Annex 1**

### **Workshop Agenda**

8.00 – 8.30	Registration
8.30 – 8.45	Welcome and self introductions
8.45 – 9.15	Opening remarks by Ministry of Environment, Ministry of Tourism, UNWTO, and Maldives Association of Tourism Industry (MATI)
9.15 – 10.30	Keynote Presentations: <ul style="list-style-type: none"><li>▪ Integrating Tourism into Adaptation to Climate Change in the Maldives (G. Vereczi)</li><li>▪ Climate related risks and possible responses (J. Hay)</li><li>▪ Green – Destination (Maldives Tourism Promotion Board)</li></ul>
10.30 – 10.45	Coffee/tea break
10.45 – 12.30	Discussions leading to definition of key project components, action areas and implementation mechanisms, including: <ul style="list-style-type: none"><li>▪ capacity building in the public and private sectors;</li><li>▪ strengthening policies and coordination;</li><li>▪ on the ground actions including demonstration projects;</li><li>▪ implementation plan;</li><li>▪ institutional arrangements and coordination;</li><li>▪ sources of support including co-financing (cash and in-kind)</li></ul>
12.30	Close of Workshop, followed by Lunch

## Annex 2

### List of Participants and Contact Details

Name	Affiliation	Contribution	Email Address	Phone Number
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Hassan Samir	Asst. Director General, Department of Public Health	Partner Government Agency		
Hinna Khalid	Asst. Executive Director, Ministry of Atolls Development	Partner Government Agency		
Ahmed Musthafa	Secretary, Ministry of Economic Development and Trade	Partner Government Agency		
Hussein Rasheed	Assistant Planner, Ministry of Housing and Urban Development	Partner Government Agency		
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Ahmed Muslim	Assistant Climate Officer, Department of Meteorology	Partner Government Agency		
Ms Aishath Hameed	Marketing Officer, Maldives Tourism Promotion Board	Industry Stakeholder		

Mohamed Aslam	Director of Surveying, Land and Marine Environmental Resources Pvt. Ltd	Industry Stakeholder		
Ali Manik	General Secretary, Maldives Fishermans' Association	NGO Stakeholder		
Mohamed Shaheeb	Member, Maldives National Chamber of Commerce and Industries (MNCCI)	Private Sector Stakeholder		
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Abdul Shukoor	Manager, Paradise Holidays Pvt Ltd	Industry Stakeholder		
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## Annex 3

### Press Release

#### Small island destination is getting ready for climate change

Initial stakeholder consultations has been held to develop a project on **Integrating Tourism into Adaptation to Climate Change in the Maldives**. This project is part of the UNWTO strategy to implement the recommendations of the Davos Declaration. It aims at carrying out a series of policy, capacity building and on-the-ground adaptation measures, in order to generate an international reference and adaptation model for small island destinations.

The project is being executed by UNWTO through funding from the Global Environmental Facility, and in collaboration with UNDP, the Ministry of Environment, Energy and Water, and the Ministry of Tourism and Civil Aviation of the Maldives. The initial workshop held in Male on 21<sup>st</sup> May brought together representatives from key Ministries, tourism private sector associations and companies, research and education institutions, and served to identify the main project objectives and action areas. Unanimous readiness has been expressed by the participants to take actions, further enhance and mainstream environmental practices in the tourism sector.

“The Maldives, as most island nations, is highly vulnerable to the unavoidable impacts of climate change. This project can greatly enhance adaptive capacity of the tourism sector, which forms the backbone of our economy. We will coordinate closely on this project with the Ministry of Tourism, to ensure effective preparation and implementation” – said the Mr. Abdullahi Majeed, Deputy Minister of Environment.

The Maldives has been identified by UNWTO, as one of the most successful tourism destinations in the World, considering its tourism development process and the high quality of its offer.



Dr. Abdullah Mausoom, Deputy Minister for Tourism stressed that “The pristine environment, the atolls, coral reefs and lagoons form the very basis of our unique tourism product. The tourism industry is highly aware of the need for their conservation and is taking actions. This project will support the implementation of our new Tourism Master Plan, especially considering its component to apply environmental management systems in resorts, integrating also nearby island communities”

The current project development phase is expected to be completed by October this year, and upon successful submission and approval by GEF, it will be implemented

through a 2-3 years project cycle. Among the main objectives, it will aim at developing an information exchange mechanism among resorts on good environmental practices, develop partnerships with inhabited local islands, streamline national policies, train environmental officers of tourism operations and resorts, integrate climate change issues in the curricula of hospitality and tourism training, and implement pilot projects in demonstration areas, ranging from erosion control and waste management to coral conservation and water management, among others.



*Various resorts have designated environmental officers, operate marine labs, and collaborate with marine biologists to run reef restoration projects and other environmental actions.*

“It was especially encouraging through the consultations to talk with resort managers working on the ground, see their high awareness of environmental issues and high interest to collaborate in this project. In this early project stage we have been already identifying some practical examples and methods on how the tourism sector can respond to climate change, and there the Maldives is a very emblematic island destination in this context” – said Gabor Vereczi, project coordinator at UNWTO’s Sustainable Development of Tourism Department, “This project will also serve to reinforce Maldives as an international leading destination in environmental management and climate response. We have to send the message that Maldives is getting climate-ready, its low-lying atolls are there to stay and welcome tourists for many generations to come”, he added.