

Introduction

- * Maldives is a small island nation, having 90 percent of its territory covered in water. The country comprises of 1192 low-lying islands which make up less than 2 percent of the total area. Its population of 338, 442 (2012) inhabits 192 of its 1,192 islands.
- Maldives atolls encompass a territory spread over roughly 90,000 square kilometres, making the country one of the world's most geographically dispersed.
- * The Maldives is the smallest Asian country in both population and land area. With an average ground level elevation of 1.5 metres (4 ft 11 in) above sea level, it is the planet's lowest country. It is also the country with the lowest natural highest point in the world, at 2.4 metres (7 ft 10 in).
- * Tourism, fishing and shipping are the most vital sectors of the economy. Tourism accounts for more than 30 percent of GDP and over 60 percent of foreign currency earnings.

Tourism in the Maldives

- In the late 1960s a team of experts from the United Nations
 Development Programme went to Maldives and concluded their
 report on the prospects for tourism in the country by mentioning
 that tourism prospects in the Maldives were non-existent (as
 there was no bank or an airport or electricity on the islands. And
 the only way to get around was by sailing, very slowly, in a
 traditional dhoni). However, tourism has flourished since the
 opening of the first resort in 1972.
- Currently there are 106 resorts, 20 hotels, 132 guesthouses, 143 safari vessels and 12 picnic islands and yacht marinas
- In November 2013 Maldives has achieved the target of 1 million tourist arrival
- In the Maldives Visitor Survey 2013, the main reason visitors came to Maldives was honeymoon (23%), health & wellness (22%), diving (19%) and Holiday/relaxation (17%). The main reasons for choosing the Maldives as a holiday destination were the beach (21%), underwater beauty (21%) and the weather (15%)

Challenges

Maldives being a fragile island ecosystem is extremely vulnerable to environmental threats such as:

- 1. Rising sea level due to global warming (Approximately about 80 percent of the land area is less than a meter above sea level)
- 2. Declining quantity and quality of the freshwater
- 3. Beach erosion
- 4. Water Pollution
- Loss of natural vegetation
- 6. Natural and man-made degradation of the coral reef system
- Coral Bleaching & Crown of Thorn (COT) Starfish Infestations,
 Coral Mining
- Coastal protection of islands and beaches- jetty to access into islands, dredging of the inner lagoon for harbor development, shoreline development, beach reclamation, reef blasting affects the existing current movements and wave climate and destructs the habitat of many marine creatures

- Sewage and liquid waste disposed on the island seep through the aquifer and into the lagoon
- 7. Problems associated with waste
- 8. Geographical challenges such as smallness of the islands, connection challenges such as transportation difficulties, natural coastline, size and location of the inner lagoon, location of the island on the reef and the atoll, wave climate, current flow patterns of the coast, size and type of island, health of the island vegetation
- 9. Multi_Use conflicts- In the Maldives, the multi-use conflicts in the reef areas are primarily between the two major uses tourism and fisheries. To solve problems that arise due to conflict of interest between the tourism and fisheries sectors in exploitation and use of the marine resources, 15 dive sites have been declared as protected areas since June 1995 and 10 more divesites have been declared as protected areas in aince 1999. In these areas anchoring, and fishing except for traditional bait fishing, is strictly prohibited.

4th Tourism Master Plan 2013-2017

- Improving waste management practices of local communities.
- Assist inhabited islands near resorts to establish a self-sustaining waste management system

Increased number of inhabited islands with a functioning sustainable waste management system, waste collection, awareness programmes, re-cycling and proper disposal.

- Support government in establishing a proper waste management system on Thilafushi Island.
- Work with local councils to establish proper waste management facilities in selected inhabited islands for live-aboard vessels.

2. Develop management plans for marine protected areas and designated sensitive environments

The Environment Protection Agency (EPA) has identified a number of marine protected areas (MPAs) and sensitive environments across the Maldives and some have been established. These marine and terrestrial biodiversity hotspots are crucial for the environmental protection and nature conservation. However, efforts to manage these areas have been hampered due to the lack of proper management plans and mechanisms to enforce management plans. This has in some cases led to site overuse and resource sharing conflicts between tourism industry, fishermen and sand miners. A pilot management programme has been implemented in Baa Atoll involving the tourism industry in key roles. Similar programmes need to be introduced across all MPAs and sensitive environments, especially in places where the tourism industry is active.

- Properly managed marine protected areas and designated sensitive environments to minimise human impacts with management plans developed in consultation with government agencies, related private sector industries and the public.
- Establish a Tourism Planning Committee at national level with a mandate to assist the preparation and enforcement of MPA management plans and to settle grievances over natural resource use involving the tourism

3. Establishing marine managed areas in resort house reefs

* The Maldives has announced a national level policy to make the entire country as a 'biosphere reserve'. The house reefs of most resort islands are already well managed due to their importance to the tourism product, particularly in relation to aesthetics, snorkeling and diving. The tourism industry leads the way in environmental management and conservation in the Maldives. The announcement of the 'biosphere reserve' concept provides an opportunity for industry leaders to spearhead policy implementation that will help resorts manage house reefs. With this programme we can conserve and manage the marine environment around resort islands and tourism sector should help drive the national 'biosphere reserve' programme.

4. Implementing a "Responsible Visitor Programme"

Damage to coral reefs, high levels of energy consumption and increasing waste are examples of impacts that are affected by tourist behaviour. Thus, a national level campaign to guide visitor behavior in line with the environmental standards of the industry is required. This strategy will also assist the reputation of Maldives as a premier ecofriendly destination.

5. Implementing climate change adaptation programme for the tourism industry

* The Maldives is considered one of the most vulnerable countries to predicted global climate change and its long-term survival has been questioned. In the medium term, impacts could include: seas may frequently inundate low lying islands; sea surface temperatures combined with sea level rise may affect the growth of corals and their natural adaptation abilities; and increasing severe weather may affect the ideal climatic conditions in Maldives. The tourism sector has been identified as being particularly vulnerable since resort islands are generally small, geomorphologically unstable, depend on healthy coral reefs and much of their infrastructure is located within 100 m of the shoreline.

6. Implementing a low carbon programme for tourism industry

In 2009 the government announced an ambitious plan to become carbon neutral by 2020. The motivations in this announcement were to show the world that it is a possible for a country to become carbon neutral and to reduce its high dependency on imported fossil fuels. The tourism industry is at the forefront of interactions with the outside world and depends heavily of fossil fuels. A long-term focus on adopting reliable and affordable energy from renewable resources (like sun, wind, sea and biomass) provides an opportunity to enhance our tourism development model, already well known for its sustainable practices. A low carbon path for development has been identified as key development strategy in Maldives as a whole

7. Strengthening environmental monitoring for evidence based decision making

* The impact of tourism development on the environment has been heavily debated but there is a lack of data to determine for sure the extent of this impact. At present, since 1993, there are requirements as part of environmental impact assessments (EIAs) for detailed analysis of environmental conditions before constructing a tourist facility. There are also requirements for environmental monitoring for a specified period of time following construction, but this is rarely followed up. Apart from the regulatory requirements, there is also a need to continuously gather data on critical environmental aspects such as coral reef health and coastal erosion. Regular environmental monitoring data are required to make evidence-based planning decisions on proper environmental management and conservation measures.

Coastal Management Measures Implemented

The economy and environment in which it operates are subject to a high degree of mutual dependence, and, therefore conservation of the coastal resources of the country is vital. Measures taken by government includes:

- 1. Tourism activities are currently confined to certain atolls and its expansion is limited to selected islands.
- 2. Resort Development Controls
- * The Tourism Ministry imposes strict regulations and guidelines for resort construction and Operation and In facility development.
- * Limiting the maximum built up area to 20% of the total land area.
- * The maximum height of the building has been limited to two stories provided that there is vegetation in the island to conceal these buildings.
- * In construction of tourist accommodation, all rooms should face the beach and 5 linear meters of beach line has to be allocated to each tourist in front of their rooms. Only 68% of the beach length can be allocated to guestrooms, as 20% has to be allocated to public use and 12% left as open space.
- * Constructions on reef flats and lagoons are discouraged. However, as over-water bungalows are very popular among tourists, they are permitted construction provided equal open space is left on the land for each building developed on the lagoon.

- 3. Environmental Controls
- a) All coastal works and larger projects have to be commenced after a thorough Environmental Impact Assessment (EIA).
- b) Control and mandatory replacement for each tree that is cut down. Certain rare and large trees have to be avoided when constructing buildings.
- c) All buildings have to be located well away from the peripheral vegetation with a setback distance of at least 5 meters away from the shore line to ensure that the peripheral vegetation most important for coastal protection is preserved;
- d) Allocating space for vegetation between buildings. This is to ensure that substantial areas of indigenous vegetation are left untouched;
- e) Construction of rock-filled jetties, groynes, seawalls and detached and submerged breakwaters are restricted. Instead, promotion of greater coral colonization on the peripheral reefs and other natural methods to protect shorelines are encouraged;

- f) Coral and sand mining from resorts and inhabited islands and from their house reefs are strictly prohibited. Specific locations have been allocated for sand and coral mining. Construction of structures with coral is controlled;
- g) Tourists are prohibited to fish from the house reefs of resorts, and to remove material from the reefs. Spear, poison and dynamite fishing are strictly prohibited. Net and trap fishing are controlled and confined to certain areas. Removal of shells, fishing of turtles and tortoise, juvenile and gravid lobsters are strictly prohibited;
- h) Mandatory requirement of incinerators, bottle crushers and compactors for resort islands.
- i) Sewage disposal through soak pits into the aquifer is discouraged. Appropriate technology for the treatment of sewage is encouraged.
- j) To preserve the aesthetic integrity of resort islands, height of buildings is restricted to the height of the vegetation profile of the island.

