Tourism Sector: Shoreline and beach protection

Introduction

Climate is the first thing on a tourist's mind when packing and before boarding on to fulfill their dream holiday. Tourists want to make every penny worth it by spending the most perfect holiday. The "sunny side of life", Maldives is blessed with a gratifying climate, making it one of the most perfect destination for holiday makers. However, climate change could have serious impacts on the tourism sector and the economy of Maldives.

In a climate vulnerable environment like the islands of Maldives, increasing the resilience of the tourism sector to climate shocks is very crucial. Hence, TAP (Tourism Adaptation Project), has focused these information guides on the climate change vulnerabilities of the tourism sector and the adaptive capacity with investment opportunities for the sector to build such resilience against climate change impacts.

Climate change related initiatives in Maldives

The first country to ratify the "Kyoto Protocol", the international agreement to minimise emission of greenhouse gases (MEE), causing climate change

Campaigning on climate change has involved holding an underwater cabinet meeting in 2009 (NBC news)

Intended Nationally Determined Contribution (INDC) submitted to UN in 2015, targets a 10% decrease in country's emissions by 2030 (MEE)

Objective

Providing information on Climate Adaptation in Maldivian Tourism Sector to FACILITATE INVESTMENT!

A Sea walls

Seawalls are common hard engineered adaptation measures in the Maldives, and used by 65% of resorts as a coastal protection measure. Seawalls are located onshore and parallel to the shoreline. The most common materials used for sea walls in Maldives include coral mounds, cement bags, sheet piles, rock boulders etc.

Cost

Type of sea wall	Direct cost
Tetrapods	US$ 10,380 per linear meter
Rock boulder	US$ 2, 360 per linear meter
Coral mound	US$ 210 per linear meter

Cost-benefit

They help absorb wave energy, to mitigate coastal erosion and protect infrastructure.

Additional benefit

seawalls can provide temporary protection of part of an island to the provision of recreational fishing opportunities and locations for small enterprises, such as small restaurants.

Success stories

6 million dollar tetrapod sea wall around capital Male' funded by "The Japan Grant Aid Project" provided a sound protection against Indian Ocean Tsunami in 2004, saving more than 200,000 lives.

Holiday Inn Resort Kandooma, invested US$ 100,000, to raise the height of its existing coral gabion (made from steel baskets encasing coral) built after the 2004 Tsunami. Increased height of approximate 1.4m (6 feet) can now mitigate damage from future storm and wave events. The sea wall also has reduced labor costs to renovate and restore damaged villas & other facilities at approximately US$330 per garden villa (2014 USD)

B Beach nourishment

Artificially placing sand along the coast to nourish or replenish an island's sand budget as an adaptive measure against beach erosion. A soft adaptive measure adopted by about 60% of Maldivian resorts. This is of most necessity as Maldives is one of the lowest lying nations.

Cost

US$ 100 per linear meter

Cost-benefit

Beach nourishment increases width of the beach. It also helps to decrease wave energy and protect infrastructure.

Additional benefits

More beach space for recreational activity

C Land reclamation

The process of creating new land from sand or other materials. In tourism resorts or inhabited islands of Maldives, this is used to increase the size and height of low lying islands.

Cost

US$ 5 per cubic meter

Cost-benefit

helps elevate island height.

Additional benefits

Provides more land for infrastructure development such as villas & restaurants.

Success story

The most ambitious land reclamation project in the Maldives is Hulhumalé Island, a totally reclaimed island. A total cost of US$ 60 million (1st phase) invested to fill 188 hectares of land, elevated 1 meter higher than other islands. This elevation is an advantage to predicted future sea level rise.

D Groynes:

Is hard adaptation measures that are perpendicular structures placed on the shore to trap sand as it flows around the island. They are constructed out of several types of materials, such as sand, coral, or boulders.

Cost

US$ 25,000

Cost-benefit

help prevent beach erosion by trapping sand

Additional benefits

Reduced labor costs compared to pumping sand onto the beach. Healthy coral reefs and sea grasses as sedimentation of the surrounding water is reduced, with no sand pumped.

Success story

Cocoa Island Resort, invested US$ 25,000 to place five groynes around its island. With a maintenance cost of US$4000 for a five year period. Groynes proved to be more cost-effective, with reduced labor cost, better protection against erosion and maintaining healthy reefs and sea grasses.

THE TOURISM ADAPTATION PROJECT The Maldives Tourism Adaptation Project (TAP) (2011 – 2015) was run by the Ministry of Tourism, in collaboration with the United Nations Development Program (UNDP) and funded by the Global Environmental Facility (GEF). The project supported the tourism sector in the Maldives to set up the required policy environment, regulatory guidance, technical skills and knowledge to ensure that climate change- related risks were systematically factored into day-to-day tourism operations.

This booklet is a collection of 6 booklets, which identifies potential areas for investment to strengthen climate resilience and adaptation in the tourism sector.

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Ministry of Tourism

TOURISM ADAPTATION PROJECT
for a climate resilient future

UNDP
Empowered lives.
Resilient nations.

gef