

Tourism sector: Water conservation & waste water management



Introduction

In the Maldives, towards the end of the nineties, 90% of the Tourism Resorts were relying on desalinated water for all tourist needs. On an average, a tourist resort consumes 550 cubic meter of fresh water per day. This water is produced by an RO desalinated plant and stored in tanks of the above volume to be pumped at 72litres per second. This amount when totaled annually adds up to an estimated 2,240 million litres (2240×10^3 cubic meters) of fresh water requirement for the tourism industry.

Apart from desalinated water, resorts also harvest rain water in water reservoirs of 250 cubic meter, to be used in the kitchen, washing and for staff requirements. Tourism Resorts also treat their grey water, in an STP with bubble air process, reusing at a rate of 100% for flushing, gardening and irrigation of Golf courses. It is estimated with the above mentioned usage of fresh water within the tourism industry, an estimated amount of 1,904 million litres (1904×10^3 cubic meters) of waste water would be generated annually. Currently this waste water is not managed on any island of the Maldives.

A Desalinated water (Reverse Osmosis)

Using reverse osmosis (RO) plant to remove salt from sea water producing fresh water.



Cost

US\$102,000 for 50m³ / day plant (2002)



Cost - benefits

Reduces the dependency on the thin layer of ground water and helps preserve it.



Additional benefits

Easy installation and maintenance of the RO plant.



Success story

Male' Water and Sewage Company (MWSC), provides approximately 4,000 tonnes of desalinated water to a population of about 74,000 people. MWSC also set up 50m³ per day plants in Kandholhudhoo and many other inhabited islands since 1999.

B Rainwater harvesting

Capturing rain water using open roofs and other infrastructure and storing in reservoirs.



Cost

US\$142,600 (2015)



Cost - benefits

water can be used as a source for kitchen, washing and for staff requirements



Additional benefits

Reduces cost of fuel and electricity expenditure on the RO plant to generate water for uses other than drinking.



Success story

The Taj Exotica Resort and Spa recently installed a rainwater catchment system that collects 900,000 liters of rainwater every year.

C Integrated Water Resource Management (IWRM)

It combines rainwater harvesting, desalination and groundwater recharge as a tripartite solution.



Cost

US\$ 8,285,000
(2011 – 2015)



Cost – benefits

Provides a continuous supply of fresh water all year through, without water shortages.



Additional benefits

Provide a collection network for public and private buildings that normally discharge excess rainwater.



Success story

With support from UNDP, a pilot project of IWRM has been initiated in the islands of Ihavandhoo, with similar projects in the works on Mahibadhoo and Gadhdhoo.

Maldives GCC, with funding from USAID has initiated an IWRM in Lhaviyani Atoll, Hinnavaru.

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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.

Tourism Adaptation Project (TAP)

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Ministry of Tourism



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