

# **SUMMARY**

## **Introduction**

Tuvalu is poor, vulnerable and mainly composed of low lying Islands – barely rising 3m above mean sea level (msl). In addition, Tuvalu’s capacity to address impacts of Climate Change is low, therefore Tuvalu should effectively implement adaptation measures **now** as it will lower adverse impacts of Climate Change.

Provision in the United Nations Framework Convention on Climate Change (UNFCCC) is an additional positive action to advance adaptive capacity of least developed countries, such as Tuvalu. However, the UNFCCC provision will not prevent all damages, yet promote beneficial impacts.

This paper briefly examines adaptation measures in three priority areas, that is Coastal Fisheries Management, Freshwater Management and Shoreline Protection. It also briefly identifies success and failures of adopted adaptation measures. These sectors were also included in the National Implementation Strategy (NIS).

### **1. Coastal Fisheries Management:**

The adaptation option currently being employed is the traditional access restriction (‘sai or hai’)<sup>1</sup> to coastal resources, a conservation type of practice. It should account not to have adverse impacts on the livelihood of the population and our subsistence and traditional way of living - the Tuvaluan way and be able to gratify the subsistence demand. This option can only effected as long as there is Land on Tuvalu above mean sea level (msl) and people dwelling on it, then this traditional access restriction can be practised.

Three adaptation measures to coastal systems that we have undertaken in the past were addressed here Clam and Trochus replenishment, Freshwater Management and Coastal Erosion.

#### **1.1 Giant Clam / Trochus Replenishment:**

Population congregation, demand for Coastal Resources and impact of Climate Change resulted in over-harvesting of the Giant Clam, therefore replenishment is a necessity. Giant Clam’s were implanted in several reefs in the Lagoon. Access restriction to selected sites were imposed.

Now there is success sign of the Giant Clam breeding and dissemination onto other reefs is a possibility. Similar adaptation measure for Trochus has been adopted and observers has reported seeing juvenile Trochus on several areas. Increasing technical expertise of local will further boost these coastal fisheries.

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<sup>1</sup> (‘sai / hai) – Local words for access restriction to an area with the aim of conserving or preventing the loss of mostly a resource or something that is highly valued in the community.

## **1.2 Funafuti Conservation Area:**

The aim of the Funafuti Conservation Area (FCA) is to conserve terrestrial and coastal marine species in the area. As in the past, the area is becoming nude of birds and reef fishes, overexploitation is further blamed for the crisis.

There has been a changed in the species biomass in the area due to effective adaptation measures implemented. Birds returning to their nesting sites, schools of fishes are encountered more frequently and coconut crabs were reproducing well.

## **2. Freshwater Resources:**

Climate Change shifts weather patterns globally. Weather extreme phenomenon becoming more frequent. The 1997 to 1998 drought hit Tuvalu badly, and the Government of Tuvalu responded with the importation of Desalination Plants. This partly address the demand on Funafuti.

A project by the Tuvalu National Council of Women on increasing rainwater storage area on all Islands. This can be seen as an adaptation measure as rainwater main source for human consumption. However, groundwater needs to be promoted, uncertainties in the degree of contamination contained in it, renders it less portable as compared to rainwater. The climate change office is currently promoting this concept of increasing water storage area.

## **3. Coastal Erosion:**

Coastal erosion results in intrusion of saltwater into *Cystosperma chamissonnis* plantation on Nanumaga, and on Vaitupu from blowholes. This is a one-off problem but two separate adaptation measures needed. The response to the former is the construction of the seawall which failed to control saltwater intrusion, and for the later, to control groundwater extraction. The thinning of the groundwater table was inferred as the cause that lead to the upwelling of saltwater from the blowholes.

Although adaptation measure in various settings will lower adverse impacts of Climate Change and promote beneficial impacts, yet incur costs and will not prevent or control all damages. Benefits of initiating adaptation measures now outweighs adverse impacts of climate change in all Nations of the World.