

State Reporting Period: October to December, 2017

Key Stakeholder: Research Unit, Fisheries Division, Ministry of Fisheries and Marine Resources Development

Name of Key Contact: Rateiti Vaimalie

A. PLANNED ACTIVITIES

List all activities to be undertaken during the period as stated in AWP and in your Activity Framework/Costed Work plan

- Nonouti Island trip- conducting marine survey including PIT, coral monitoring, recreational site identification, ciguatera monitoring and biological sampling for bonefish
- Conducting creel survey for Nonouti and South Tarawa

B. ACTIVITY PROGRESS TO DATE

Give detailed explanation of the status. Provide justification if delayed and new schedule planned and provide response strategy if any

- Creel survey on South Tarawa was conducted by fisheries staffs targeting reef fisher for Teoraereke, Abarao and Nawerewere. The survey was carried out twice a week i.e for every Tuesday and Thursday but could be done on other days if no data obtained within those selected days.
- Nonouti Island was visited within 18 days starting from 23rd November till 3rd December 2017. The team comprised of staffs from Culture Division, an Account Officer from MELAD and Fisheries staffs including 5 from Research Unit (FO Rateiti Vaimalie, SFA Toaea Beiateuea, SFA Aranteiti Tekiau, FA Max Peter, and Handyman Tebwi Tererei). On the island, various activities conducted by the Research staffs which include the following;
 1. Conducting marine survey – PIT and coral monitoring for determining resource and habitat or coral status
 2. Recreational site survey- for identifying potential sites for recreational activities
 3. Ciguatera monitoring – for identifying ciguatera sites especially at areas closed to coastal development such as causeways, etc
 4. Creel survey – for obtaining information on fisher demographic and behavior (fishing area and distance), catch composition, catch per unit effort and fishers’ perceptions on resource status. Such information vital in the development of marine resource management plans.

C. RESULTS ACHIEVED

Describe concrete, key results (policy, publication, key event etc.) achieved so far, vis-à-vis the specific targets set in the AWP and SRF (ie. achieved or on track or off track)

Key results that achieved are in lined with our assigned goals of determining the status of the coral reef, providing a baseline data on finfish and invertebrates, identifying breeding and nursery zones for common seafood, selecting potential sites for recreational activities to support tourism, monitoring of ciguatera to determine the impact of the coastal development and obtaining information on the creel survey as per discussed below.

The following achievements had shown a great progressive to our obligations given under this project in Nonouti Island.

Status of the Corals

PIT Survey

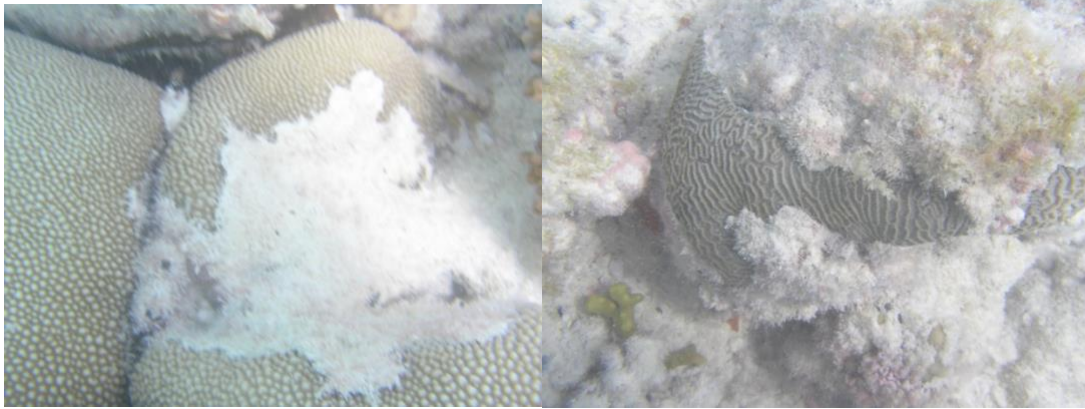


Figure 1: The Pavona sp coral which is smothered by sand and silt (Left) and the Platygyra sp coral (Right) which is almost buried with sand, silt and turf alga. Picture taken in the Northern Backreef site

The substrate in our selected sites:- North Backreef, North Outer-reef, North Lagoon, Central Backreef, Central Outer-reef, Central Lagoon, South Backreef and South Outer-reef, showed a greater variation by the abundance and distribution of the recently killed corals, rubbles, sand, living corals and algae species. The Outer-reef site for the North, Central and South showed greater complexes of substrate type than the Lagoon and Backreef site. Coralline algae have the highest abundance and distribution throughout the three sites followed with rocks and rubbles. This represents a good habitat for any new coral polyps' species to settle easily and grow into large colony. The major constraint in this site was found to be the competition between the Zooanthids and corals, coupled with Predation from the Scaridae group (Parrotfishes). However, the living corals are much diverse in terms of their species and morphologies which some stations showed a potential area for recreational activities (mainly scuba diving and game fishing) and the presence of the Grey reef shark

The Backreef sites for the North, Central and South showed a least abundance of living corals, while sand was dominating. This showed an adversely impact to the coral growth putting stress on the observed corals, as showed in **Figure 1**, by smothering them and eventually die. However, some of the stations under this site were found to be abundant by juveniles finfishes such as red snapper (*Lutjanus, gibbus*). Also the present of clams (*Tridacna* species) were more abundant than the Outer reef and Lagoon

The lagoon sites for the North and Central found to be dominated by sand which is comparable to the back reef sites and the distribution of the living corals are greatly varied from station to station. This indicates that the site could be impacted from the people due to the closer proximity to the land and the turbidity is high within such environment. Also, it is found that reef patches in the lagoon sites closer to the land have less abundance with living corals while greater diversity of corals in reef patches closer to the ocean.

Potential Site Survey for Recreational Activity



Figure 2: One of the potential sites discovered during the survey named Tebwereuri sandbank (Lat: S 00. 683,82 Long: E 174. 338,52)

The sites constituted the wide subtidal zones with shallow water ideal for snorkeling and game fishing as showed in **Figure 2** on the left. A giant trevally was caught around the sandbank to determine the type of fishes caught when using trolling. Other potential sites discovered, Central Outer-reef 3 where the presence of shark was abundant, Noumwatong Backreef indicates the abundance of snappers (Lutjanidae) and the complexity of the corals. Mwakauro Sandbank which is ideal for snorkeling and game fishing, due to the abundance of trevallies (Caranidae).

Ciguatera Monitoring

The following sites that were tested for ciguatera:-

Site Description	Latitude	Longitude
Ciguatoxic Sample 1	S 0°34'36.15"	E 174°18'13.86"
Ciguatoxic Sample 2	S 0°34'54.92"	E 174°18'53.02"
Ciguatoxic Sample 3	S 0°45'16.05"	E 174°18'19.40"
Ciguatoxic Sample 4	S 0°41'5.74"	E 174°20'10.07"
Ciguatoxic Sample 5	S 0°38'37.31"	E 174°19'12.71"

Based on information obtained from islanders, ciguatera was not commonly exists as no cases reported on ciguatera at Nonouti. However the samples were collected at sites closed with the two causeways (between Teuabu and Matabou) and (Matabou and Tebuange) for identifying ciguatera sites at areas closed to coastal development.

Creel Survey and Biological sampling

The survey was conducted within Tabiang, Makauro, Matang and Temwanoku villages in which fish weight and size measured as well as interviewing fishers (lead fishers) for information on fisher demographic, catch amount per fisher per trip, catch composition and more importantly fisher perception on resource status. As obtained from the 15 creel survey, gillnetting was commonly practiced in which most of the catch dominantly comprised of bonefish (*Albula glossondota*). Other fish caught include surgeonfish, parrotfish, goatfish, trevally, silverbiddies, etc. Based on fisher perception, more than 50% mentioning that there was a decrease in resource compared to 5years back, however the others reporting that there were no changes in the catch size and number. The team also managed to

conduct biological sampling for bonefish for determining sex and maturity age in which otolith and fin clip samples preserved with ethanol for lab analysis



Figure 3; Research staffs doing biological sampling of bonefish (*Albula glossandota*)

D. BENEFICIARY

The beneficiaries of the project will be;

E. Extra activities not reflected in the work plan

F. Challenges/Problems encountered and recommended actions.

An issue faced during the creel survey in which fishers from Temwanoku village avoid the team to conduct their survey as they mentioned that it would take their time to wait and could cause delay in serving their customers

G. Activities aligned to Strategies of KDP 2016-2019