

**Operation and Development Trip Report**

**Central Island (Nui & Nukufetau)**

**FAD Programme, Data Collector Training,**

**Shallow Reef Survey**

**&**

**Fishing Techniques Training**

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## Summary

The team consisted of 4 staff of the Tuvalu Fisheries Department, who travelled on FV Manau I to the Central Islands (Nui and Nukufetau) to fulfill its planned activities. The FV Manau I departed on the 20<sup>th</sup> October and arrived Nui the next day. The team departed Nui on the 1<sup>st</sup> of November and arrived Nukufetau at the same day at night. The team departed Nukufetau on the 5<sup>th</sup> November at noon time and arrived Funafuti at the same day in the evening.

The Operation and Development Section had visited central Islands as part of the Tuvalu Fisheries Department Corporate Plan tasks to support sustainable development of small-scale fisheries for livelihoods, food security and healthier diets. The training was prepared to achieve objective 4 in order to build and improve capacities of the people to improve and sustain food security and socio economic benefits through the improved potential fish catch. The trip was funded by the TFSP under the Tuvalu Fisheries Department and in collaboration with OFCF Japan.

The trip had successfully achieved certain primary objectives that empower and provide an increased knowledge and skills on the activities implemented on each island. The following were the targeted objectives that were achieved during the implementation of this training;

1. Distribution of fishing gear from OFCF to the selected 20 participants from each association,
2. Trainees able to understand the new fishing method (mid-water trolling),
3. To build their capacity and extend skills and knowledge on fishing techniques to the young generation,
4. Increased economic benefits and employment opportunities for young people, women and school leavers.
5. Deployment of FADs – Nui only
6. Data collector training – Nui only
7. Shallow reef survey – Nukufetau only

A good number of participants turned up (refer to appendix 1) were well trained and 20 sets of fishing gears (mid water trolling) for each association were donated. Evaluation of the training was done straight after practical session by a selection of key participants (youths and experienced fishers) to evaluate how successful was the training and how important would the training be to them in their daily lives. The following were the positive feedback from these 3 island associations;

- 1) Participants acknowledged that these new fishing techniques could improve socio-economic benefits based on the potential of the improved fish catch and diversified opportunity for value addition.
- 2) Participants would like TFD to maintain and sustain this type of training as it encourages young people to learn and gain skills and knowledge which supports and improves their livelihoods,

Some of the main issues encountered during the implementation of this training included the following. A more comprehensive list is given in the main body of this report.

- During the practical sessions, there were no protective gears to protect participants and officers from the sun,
- The timeframe given for the implementation of the training is too short, and more time is needed to extend this new fishing method to all local fishers,
- Some of the participants didn't turn up for the fishing practical lesson,
- No good transportation in Nui that can lift and transport FAD to the wharf and to the work boat,
- The need to develop a national FAD management plan and enforce it,
- Gears from the previous OIIC not fully handed-over to the new appointed OIIC
- Batteries (3A) need to be procured for the weighing scale and also 1 tray scale

- The OI DC has requested to procure two VHF to help him communicate with the CFO when needed to assist in creel survey
- OI DC has been advised to continue to carry out creel survey by only measuring the length of fish species while batteries are procured for the weighing scale from Funafuti.

As a result the following recommendations were made for future improved the implementation of fisheries work:

- TFD to provide proper protective gears for both participants and TFD officers to minimize or avoid any poor circumstances during the practical training;
- Encourage participants and to make sure each participant attends all the necessary training sessions,
- Participants were required to make use of this training methods

## 1. Introduction:

The Fisheries sector through artisanal fishing is very important to the people in Tuvalu as their main source of living. The Operation and Development section is devoted to helping artisanal fishers and the people in Tuvalu to ensure sustainable fishing operations, good catch returns and ability to produce healthy fish products, which can preserve their catches for future use, sale and possibly export. These skills are needed to train our people in Tuvalu to enable them to increase economic benefits to support their families financially, their food security, livelihoods and improved safety at sea of fishermen.

Through the support of the Overseas Fishery Corporation Foundation of Japan (OFCF) the department of Fisheries managed to implement and deliver fishing gear (mid water trolling gears) to Nui and Nukufetau fishermen. The OFCF will continue to work closely with the department in supporting artisanal fishing activities through the funding and procurement of fishing gear and introduction of new fishing methods.

The trip to the central island (Nui and Nukufetau) was funded by the TFSP (Tuvalu Fisheries Support Programme) and the contribution of the OFCF in supplying of fishing gears (mid water trolling gears). These funds were proposed by the team to meet financial expenditure and other requirements in the implementation of activities to these two islands.

This report covers the activities of the "Fishing Techniques Training," FADs and Data Collector Training to the Central Islands that was implemented by the department. The overall aim of this training programme was to contribute to the sustainable development, improved skills and strengthening of local fishing skills. The trip had certain specific results/objectives to achieve.

8. Distribution of fishing gear from OFCF to the selected 20 participants from each association,
9. Able to understand the new fishing method (mid-water trolling),
10. To build their capacity and extend skills and knowledge on fishing techniques to the young generation,
11. Increased economic benefits and employment opportunities for young people, women and school leavers.
12. Deployment of FADs – Nui only
13. Data collector training – Nui only
14. Shallow reef survey – Nukufetau only

The fishing techniques training was attended by 20 active fishers with boats and canoes from each island (Nui & Nukufetau). It is anticipated that this training will empower and prepare participants to effectively use new fishing skills to create opportunities, improve livelihoods, food security and economic growth from the wise use of our marine resources.

As part of the trip activities, the team also reached out to the newly appointed data collector of Nui to conduct a training, as collection of data is very important to the department in forecasting the status of marine resources of Nui Island. The training mainly focused on the following:

- Going through the contract and discussed with the OI DC what roles and responsibility he has;
- Discussed how to fill the fortnightly report and submit to the responsible officer in Funafuti; and
- Finally discussed how to use the creel form.

## 2. Methodology:

The excursion commenced on the 20<sup>th</sup> September 2022 and was successfully completed on the 5<sup>th</sup> November 2022 using the Fisheries research vessel, the FV Manau II. The training was designed to build skills and knowledge of local fishers and encourage youth to acquire these skills as it's really important for their daily lives.

The preparation of the trip with each island was arranged prior to the departure for the central Islands. These were the formal protocols to be followed by any department of the government before departure. The team had worked with the Local Government department and each island council (Nui and Nukufetau) on the program and activities for each island. Upon arrival and departure of the team, the team had to meet with the Kaupule to discuss the programme and a summary report of the activities that were implemented in these 2 islands.

Fishing techniques training was one of the key performance indicators to increase skills and knowledge of our local fishers, which improves livelihoods, food security and socio-economic growth. The team planned this training for 3 days, one day for rigging of fishing gears and two days for fishing practical. Selected participants were urged to participate in both the training areas. Participants were divided into two groups of 10 people for the practical that demonstrated this type of fishing. Evaluation is part of the training activities which required all participants to evaluate the training being implemented by the Fisheries department.

FAD deployment was one of the selected priorities under Nui's Fisheries Management Plan that was developed by the Ridge to Reef project to be funded under TFSP. This year, the Operation and Development unit organized the overall plan in the deployment of this FAD. There was an awareness raising to all fishermen of Nui which simply explained the importance of the FAD, construction and deployment operation of the FAD. The second day focused on show - casing on the construction of the FADs. Lastly, the team briefly discussed with the fishermen and crew of the FV Manau II the operation for the deployment of the FAD.

Data collection is one of the very important activities by the department of Fisheries and the team had planned to also reach out to the data collector of Nui to conduct training. The training is for one day only, which primarily focused on the discussion of his contract and his responsibilities.

Prior to departure, the team had a final discussion with each island council in presenting the finding and outcomes of the activities that was implemented in these two islands.

## 3. Results and Findings:

### 3.1) Kaupule Courtesy Visit

The team consulted with each island council on the programme activities allocated for the specific timeframe of one week in Nui and 3 days in Nukufetau. Upon arrival, the team found out that these two islands were busy as they were bidding farewell to their island pastors. The team consulted with each group of Kaupule members and worked as advised by each Kaupule in the implementation of activities. During the Kaupule consultation, there were several issues raised by Nui Kaupule members;

- 1) Programme in Nui to start after lunch around two in the afternoon as the island had its planned activities in farewell their island pastors,
- 2) Relocation of Nui Land base VHF was raised during the consultation, and the Kaupule urgently asked the department to complete this activity as it has been asked several times,
- 3) Welding is one of prerequisite of fishermen for their aluminum boats, as this is very important in improving safety of fishermen while on fishing operations.

### 3.2) Nui Data Collector Training

Collection of data is very important to the department in forecasting the status of their marine resources. The data collector of Nui was a newly appointed officer, hence the team conduct such training as it will benefit him and improved his work in the collection of data. The training was mainly focused on the following;

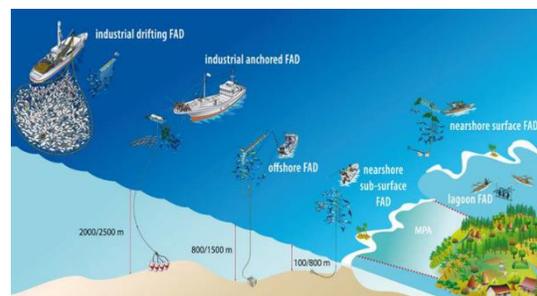
- Going through the contract and discussed with the OI DC what roles and responsibility he has,
- Discussed how to fill in the fortnightly report and submit to the responsible officer in Funafuti and
- Finally discussed how to use the creel form and provided 2 practical sessions in the field

### 3.3) FAD Programme

#### 3.3.1) FAD Awareness

FAD deployment was one of the priorities under Nui's Fisheries Management Plan that was developed by the Ridge to Reef project and to be funded by the TFSP. The TFSP had allocated ten thousand dollars (10,000) to fund this priority and successfully achieved it in this trip. On the 24<sup>th</sup> October an awareness was made to all the fishermen of Nui on the importance of FAD to all fishers and the community as a whole. The awareness was mainly focused on the following;

- 1) Discussion of the whole picture of the different types of FADs (refer to the picture)
- 2) Importance of the FADs to all local fishers and the community,
- 3) Construction process of the FAD,
- 4) Deployment operation of the FADs and
- 5) Site selection for the FAD deployment.



Picture 1: Categories of FADs

#### 3.3.2) FAD Construction

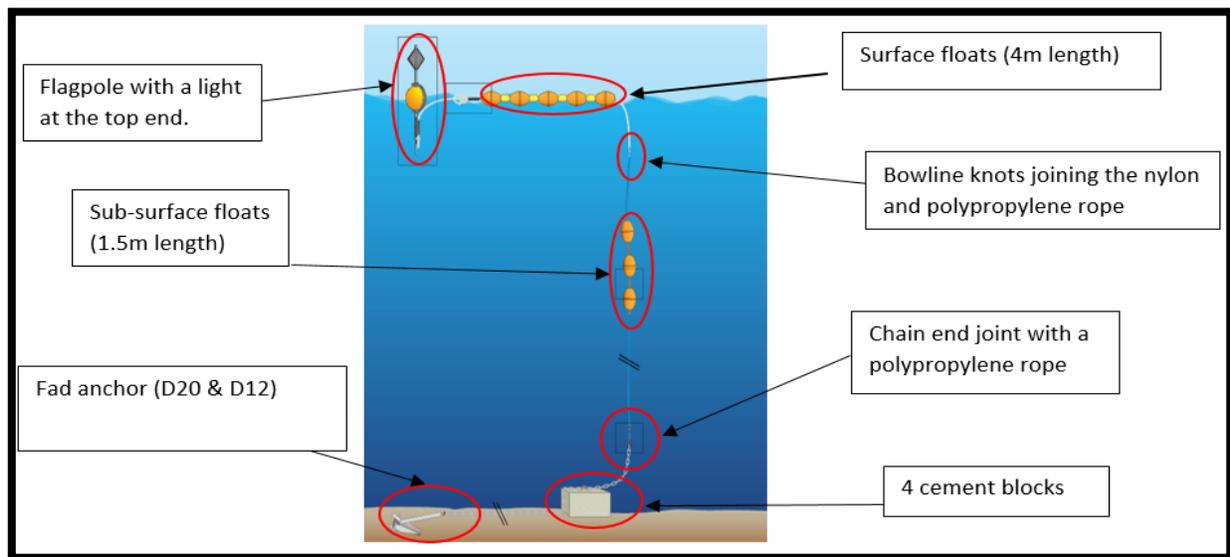
On the 25<sup>th</sup> October, the FAD construction was conducted for one day in Nui. Members of the association were asked to participate and were involved in the construction of the FAD. A total more than 20 members attended and involved themselves in the construction of the FAD. The construction of the FAD was successfully completed within one day. The following were the main objectives were followed;

- i. Fishermen to learn and experience the construction of the FAD.

- ii. Enable for fishermen to acknowledge the cost and financial issue that may arise when vandalism occurred, and encourage FAD ownership.
- iii. Promote cooperation between fishermen and
- iv. Help with the transportation of the FAD to the FV Manuai.

### 3.3.3) FAD Deployment

On the 29<sup>th</sup> October, the FAD was deployed after the Mid-water trolling practical session in the morning and it was a successful operation. The FAD was deployed with the coordinates of **7°13.537'S and 177°08.073'E** with a depth of **404 meter**. Aggregators of the FAD were green coconut leaves; and scuba divers checked the amount of slack rope of the sub-surface FAD. This was completed on the 31<sup>st</sup> October 2022. The aggregators of the FAD were made to provide shade for small fishes to shelter underneath these coconut leaves thus attracting big fishes to the FAD. The team also found out the depth of the slack rope was about 17.7 meters, which safe for fishing boats while fishing at night or day time.



**Picture 2: Lizard FAD after deploying**

### 3.4) Fishing Techniques Training

The training targeted 20 participants for each island (Nui and Nukufetau) to introduce them to the new fishing technique of mid-water trolling. This new method was believed to help local fishers from these 2 islands to improve catch, food security and a contribution to the socio-economic growth.

#### 3.4.1) Selection of participants

Selection of participants was based on the limited funds and available resources for this training. The selection of participants was done by the Fishermen’s association and the community fisheries officer of these 2 islands. Effective participation of the 20 selected fishers from each island was ensured through close monitoring and observation by the team during the 3 days training. The following were the numbers participants that showed up for this training,

Island Name	No. Local fishers	Total
Nui	20	40
Nukufetau	20	

**Table 1: Participants attending training**

### 3.4.2) Training objectives and outcomes:

The training had certain target objectives to achieve. The following were the set objectives of the training;

- 1) Distribution of fishing gears from OFCF to the 20 selected participants/local fishers from each island,
- 2) Participants able to understand the effectiveness of the new fishing method (mid-water trolling),
- 3) Increased economic benefits and employment opportunities for young people, women and school leavers.

After completion of this training, it was expected that each participant from each islands would learn the following

- 1) Improved fishing technique skills and knowledge in addition to what they had acquired,
- 2) Strengthening of local fishing skills and encouraging people on each island share knowledge and experience to the young generation of different types of fishing skills.

### 3.4.3) Introduction of Mid-Water Trolling Method

The mid-water trolling was started on the 28<sup>th</sup> October in Nui while in Nukufetau on the 2<sup>nd</sup> of November 2022. The training started off with a classroom session, where participants participated in the construction and rigging of their mid-water trolling line. The table below shows materials needed, and each participants needs these materials in the construction and rigging of this fishing line.

Stainless double hook	Bait head
Sinker weight	Single swivels
Polyethylene tube	Nylon line
Double clip	Super cord
Cable wire	Nylon with sinker
Pink octopus	Shock absorber
Hand presser	

**Table 2: Materials needed for mid-water trolling**

During the training, the team closely monitored and assisted each participants on the given instructions and steps of the rigging of this fishing method line. The following were the given instruction and steps to be followed;

- 1) Connecting of the cable wire (1.5mm) to the stainless double hook using 2 clips (4N) together with the sinker and crimp to tighten them. After connecting cable wire and double hook, insert the pink octopus with the bait head through the double hook.
- 2) The other end of the cable wire, connect it with the nylon line (100X20m) using 2 clips (4N) and swivel. Participants were asked to tie it, not using clips.
- 3) After joining nylon line with the cable wire, joined the other end of the nylon line with the sinker (100X5m). Joining them by using swivel and tighten both ends.
- 4) After connecting nylon line with sinker, the other end of the sinker has to connect with the polyethylene line using swivel and tighten it.
- 5) After connecting of sinker and polyethylene line, the other end of the polyethylene line has to connect to it with the absorber (8mmX50cm) using the swivel and tighten both ends well.
- 6) After installation is complete, roll up the fishing line using the super cord (100X50cm)



Picture 3: Nui Fishermen – fishing gear rigging



Picture 4: Nukufetau Fishermen – fishing gear rigging

### 3.4.4) Fishing Practical and Experience (Nui and Nukufetau Island)

Fishing practical was made to show case and demonstrate to fishermen (participants) this new fishing method. Participants from both these islands were divided into 2 groups with 10 members in each group. Fishing practicals were made on the 29<sup>th</sup> and 31<sup>st</sup> of October in Nui, while in Nukufetau on the 3<sup>rd</sup> and 4<sup>th</sup> of November. FV Manui II was sailed at a speed of 4 to 5 knot and in an area with a depth of 80 to 100 meter during the fishing practical. Demonstration of the new fishing method was shown by the team on the vessel and then participants used their lines. After each practical lesson, individual feedback was evaluated based on the impact of this new fishing method for them.



Picture 5: Nui participants during practical lesson



Picture 6: Nukufetau participants during practical lesson

### 3.4.5) Catch during Practical lesson (Nui and Nukufetau)

The table shown below, showed the number of catch from these 2 islands during fishing practical.

Island	Name of fishing method	Name of species	Total
Nui	Mid-water trolling	Paala – wahoo	1
		Kasi – yellow fin tuna	2
Nukufetau	Mid-water trolling	Paala – wahoo	1

Table 3: data analysis of catch

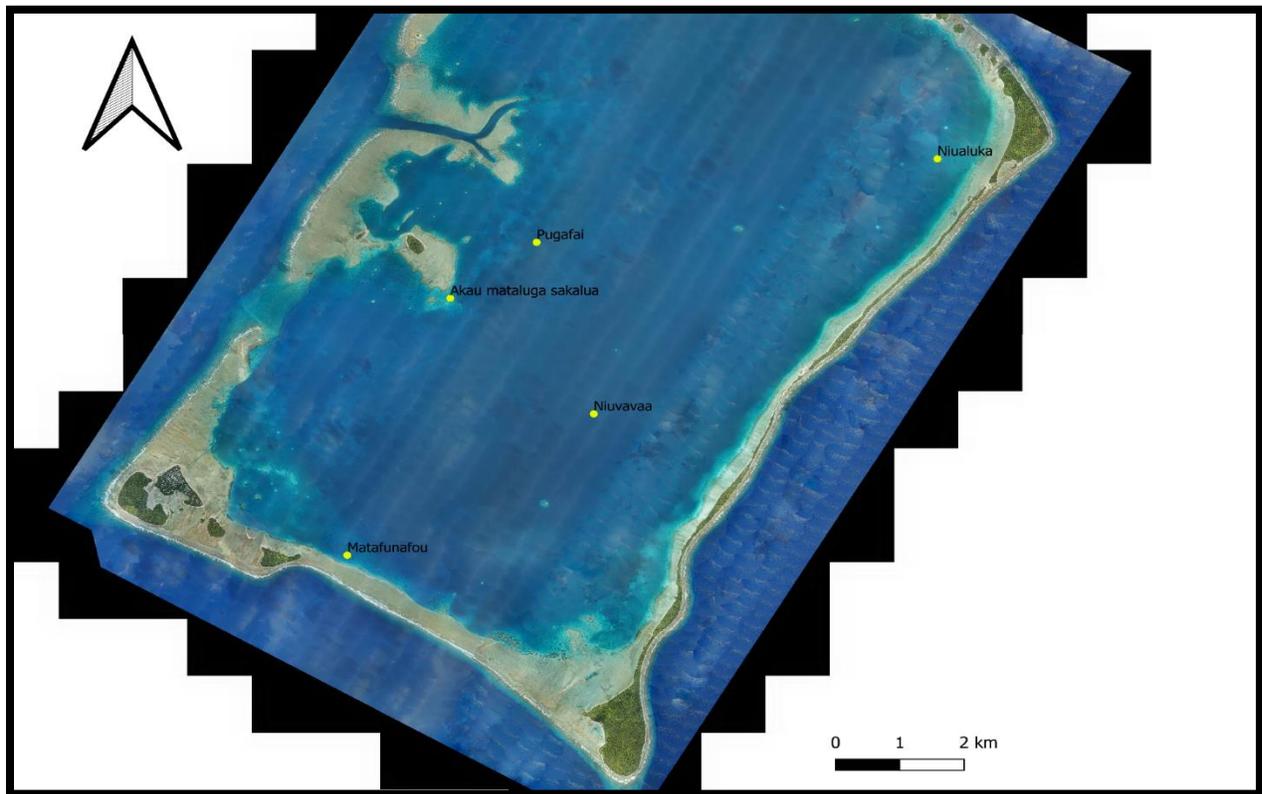
### 3.4) Survey of shallow patch reef in Nukufetau

Demarcation of shallow patch reefs was one of the priorities under the Fisheries management plan that was being developed by the Ridge to Reef project, and Nukufetau selected this priority to be funded by the TTFSP. The survey had to focus only on 5 shallow patch reefs which needed to be demarcated with a buoy mounted with a light for ease of navigation of the local fishers at night time. The table below shows shallow patch reef surveyed in the lagoon.

Surveyed Reef Name	Reef Name	Position	Depth (m)	Distance (m)	Deployment Site
Nuku 1	Matafunafou	08 03932'S, 178 33844'E	14.4	6-8	North
Nuku 2	Niu vavaa	08 01673'S, 178 37317'E	20	6	South
Nuku 3	Niualuka	07 97603'S 178 42157'E	16	6-8	North West
Nuku 4	Pugafai	07 98949'S 178 36501'E	20	8-10	West
Nuku 5	Akau mataluga sakalua	07 99842'S 178 35283'E	10	12	East

**Table 4: Shallow reef survey**

The picture below illustrated actual points where shallow reef needed to be demarcated,



**Picture 7: Nukufetau lagoon shallow reef**

#### 4) Issues and challenges

The team had encountered some issues during this trip and in the implementation of activities. Also there were some of the recommendations made which could improve or mitigate these issues and challenges to improve the training and the implementing of activities in the future;

##### **Issued and Challenges faced**

- During the practical sessions, there were no protective gears to protect participants and officers from the sun,
- The timeframe given for the implementation of the training is too short, and needed enough time to do and extend this new fishing method to all local fishers,
- Some of the participants didn't turn up for the fishing practical lesson,
- No good transportation in Nui that can lift and transport FAD to the wharf and to the work boat,
- The need to develop a national FAD management plan and enforce it,
- Gears from the previous OI DC not fully handed-over to the newly appointed OI DC
- Batteries (3A) need to be procured for the weighing scale and also 1 tray scale
- The OI DC has requested two VHF radios to help him communicate with the CFO when needing to be assisted in creel survey work
- OI DC has been advised to continue to carry out creel survey by only measuring the length of fish species while batteries are procured for the weighing scale from Funafuti.

##### **Recommendation**

A number of recommendations were made to improve these issues and challenges face that were raised during the implementation of the training. The following were the recommendation for future training:

- 1) TFD to provide proper protective gear for both participants and TFD officers;
- 2) Encourage participants and to make sure each participant attends all the necessary training sessions,
- 3) Participants were required to make used of this training methods.

## 5) Appendix

### 6.1) Questionnaire

#### **Evaluation questionnaire on Fishing training Techniques.**

1. What do you think of the training, are you satisfied/happy or not, and also state what did you learned from this type of fishing method?
2. Are you satisfied with the learning materials provided for the training, explained your reaction to the fishing method training provided?
3. In your own opinion, explain some of the influence of this type of fishing method toward the community livelihood? For instance, food security, financial issues and so forth.
4. In your own opinion, state some of the issues and recommendation toward the fishing training that were provided by the Fisheries department?

6.2) Photos taken during the trip

**Nui FAD Programme**



*Nui FAD construction and deployment*

**Nui Fishing Techniques Training**



*Nui participants - mid water trolling training*

**Nukufetau Fishing Techniques Training**



*Nukufetau participants - mid water trolling training*

**Nui Data Collector Training**



*Nui DC Training conducted by the TFD*

