



Fisheries Department
Ministry of Natural Resources
Government of Tuvalu

ANNUAL REPORT





Pacific
Community
Communauté
du Pacifique

Prepared for publication at the Pacific Community's headquarters in New Caledonia and printed by Star Printery in Fiji, 2017.

Annual Report 2016



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Ministry of Natural Resources
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Funafuti, Tuvalu
March 2017

Acronyms & Terms

AA	Access agreement
AG	Attorney-General
ALB	Albacore tuna
AUD	Australian dollar
AWP	Annual Work Plan
BDM	Beche-de-mer
BET	Bigeye tuna
CFC	Community Fishing Centre
CFP	Ciguatera fish poisoning
CMM	Conservation and Management Measure (of the WCPFC)
CP1	TFD first Corporate Plan (2014–2016)
CP2	TFD second Corporate Plan (2017–2019)
EEZ	Exclusive economic zone
EU	European Union
FAD	Fish aggregating device
FCA	Funafuti Conservation Area
FFA	Forum Fisheries Agency
FFV	Foreign fishing vessel
FIMS	Fishery Information Management System
FO	Fisheries Officer
FSMA	FSM Arrangement (for concessional fishery access between PNA domestic purse-seiners)
GEF	Global Environment Facility
GIS	Geographic Information System
GOT	Government of Tuvalu
GRT	Gross Registered Tonnage
HRD	Human resource development
IFA	Inshore Fisheries Advisor
IMO	International Maritime Organisation
IT	Information technology
IUU	Illegal, unregulated and unreported fishing
LL	Longline
MCS	Monitoring, control & surveillance
MCSWG20	MCS working group, FFA
MFED	Ministry of Finance and Economic Development
MNR	Ministry of Natural Resources
MRA	Marine Resources Act
MSC	Marine Stewardship Council
MT/mt	Metric tons
MTU	Mobile transmission units
NAFICOT	National Fisheries Corporation of Tuvalu
NAPA	National Adaptation Programme of Action
NFD	Non-fishing days
NPOA	National plan of action
NPOA	National plan of action on IUU fishing

O&D	Operations and Development Section (of the TFD)
OFCF	Overseas Fishery Cooperation Foundation, Japan
OI	Outer Island
PADI	Professional Association of Diving Instructors
PAE	Party Allowable Effort (under the VDS)
PERMU	Public Enterprise Reform Management Unit
PFO	Principal Fisheries Officer
PIRFO	Pacific Island Regional Fishery Observer
PL	Pole and line
PNA/O	Parties to the Nauru Agreement / Office
PROP	Pacific Regional Oceanscape Programme
PS	Purse seine
PWD	Public Works Department
R2R	Ridge to Reef Project
RFV	Register of Fishing Vessels
RIMF	Regional Information Management Framework
SDF	Special Development Fund (of the Government of Tuvalu)
SDG	Sustainable Development Goal
SFO	Senior Fisheries Officer
SKJ	Skipjack tuna
SMC	Senior Management Committee
SOP	Standard operating procedures
SPC	Pacific Community
SRP	Sub-Regional Pool (of the VDS)
TDF	Tuvalu Development Fund
TFD	Tuvalu Fisheries Department
TFSP	Tuvalu Fisheries Support Programme (MFAT)
TKIII	Te Kakeega III: National Strategy for Sustainable Development 2015-2020
TMTI	Tuvalu Maritime Training Institute
TNOP	Tuvalu National Observer Programme
TOR	Terms of reference
UNDP	United Nations Development Project
UST	United States Tuna Treaty
UVC	Underwater visual census
VD/ VDS	Vessel Day/ Vessel Day Scheme
VMS	Vessel Monitoring System
WB	World Bank
WCPFC	Western and Central Pacific Fisheries Commission
YFT	Yellowfin tuna

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1 Background

1.1 The Tuvalu fisheries sector

Tuvalu is situated in the South Pacific Ocean between latitudes 2 and 13 degrees South and longitudes 172 degrees East and 177 degrees West, encompassing an Exclusive Economic Zone (EEZ) of 900,000 sq. kilometres and a land area of 26 sq. kilometres. The islands of Tuvalu, all low lying atolls, are homes to around 11,000 persons with over half living on the capital Funafuti.

Subsistence activities dominate Tuvalu's fisheries sector. A wide variety of techniques are used throughout the group to collect fish, crabs and shellfish which are consumed, shared or informally bartered. In the past Fisheries Centres were established on most outer islands with the intention of providing fishers with income earning opportunities, but most of these are no longer functioning. On the main island, Funafuti, artisanal fishing is limited to a small fleet of 4-5 meter outboard powered skiffs which mostly fish by trolling for tuna and by line fishing for reef fish.

About 75 percent of the fish landed in Tuvalu are ocean species, predominantly two species –skipjack and yellowfin. The remainder is made of reef and lagoon species, with smaller amounts of bottom fish from deep slope areas. From census data it has been determined that 74 percent of households participate in reef fishing and 63 percent in ocean fishing. Studies in fish consumption over the past decade have resulted in estimates in fish annual per capita consumption of between 85 to 146 kilograms. Current annual fishery production, estimated at approximately 1,100 tonnes, indicates that per capita fresh fish consumption in Tuvalu is of the order of 100 kilograms per year.

Tuvalu engages in the two key industrial tuna fisheries of purse seine and longline. Fishing is generally undertaken by foreign vessels under access agreements and skipjack tuna make up the bulk of the catch. Fisheries licensing is now the major source of Government revenue with a contribution to the nation's GDP of around 42% (A\$33 million in 2016) based on the combination of license fees, selling of vessel days, transhipment fees, observer fees and joint venture dividends. So far it is also providing employments to young school leavers through the Tuvalu National Observer Program and (to a lesser extent) employment of Tuvaluan crew on fishing vessels.

1.2 Purpose of this report

This report describes the objectives, activities and results of the Tuvalu Fisheries Department (TFD) within the Ministry of Natural Resources (MNR) during 2016.

In September 2013 the Tuvalu Cabinet approved the Department's first 3-year Corporate Plan (CP1) and associated reorganisation, effective as of January 1st 2014. The reorganisation led to significant changes in the Department's structure and functions. By the end of 2014 a new staff structure had been put in place (Figure 1), key corporate and operational documents had been developed, and a revised set of priority activities had been agreed.

In 2015 the Department prepared its first Annual Work Plan (AWP), consistent with CP1, to guide its activities during the year. The Plan proved over-ambitious, and was not fully delivered in 2015, hence continued to be used to guide the Department's work programme in 2016.

At the end of 2016 Cabinet approved the Department's second Corporate Plan (CP2), covering the period 2017-2019, as well as a new AWP for the 2017 calendar year. The present report summarises the main achievements of the Department during 2016, as well as the challenges it faced during that year, and in some cases continues to face. Where possible, activities are reported against the thematic areas identified in the 2015 AWP which, as noted above, continued to guide the Department's work programme in 2016.

1.3 Vision

The guiding vision of the Department can be stated as:

- Bountiful inshore fisheries supporting livelihoods and providing healthy local food
- Sustainable oceanic fisheries providing strong revenue and satisfying jobs

The physical and economic health of the Tuvalu population depends upon the health of its inshore and oceanic fisheries, which can be managed by Tuvalu. The health of oceanic fisheries cannot be managed by Tuvalu alone but requires regional and sub-regional co-operation.

1.4 Mission

The Department's mission is:

- To maximise social and economic returns to the people of Tuvalu through the sustainable management and wise use of Tuvalu's living marine resources.

On behalf of the people of Tuvalu, the Government, through its Fisheries Department, will act as a responsible custodian of oceanic or designated inshore fishery resources and fisheries rights so that they generate national revenues and sustainable employment opportunities. The Department will also support Kaupule/Fale Kaupule to manage inshore fisheries to support livelihoods and provide local food security.

1.5 Objectives

The objectives of the Department were stated in the first Corporate Plan as:

1. Transform the existing relationship between the Fisheries Department and Kaupule/ Fale kaupule to one where Kaupule regulate local food fisheries used by local people to supply local needs and the Department provide support as requested in the form of data analysis services and fisheries management advice only.
2. 'Designate' inshore fisheries unsuitable for management by Kaupule/ Fale Kaupule (including all beche de mer species) for management by the Fisheries Department under Fisheries Management Plans. Develop and implement Management Plans prior to future commercialisation of utilisation of those fisheries.
3. Secure and protect national rights for Tuvalu within the regional purse seine and longline Vessel Day Schemes and promote the integrity and development of those schemes through co-operation with other participating coastal States.
4. Improve fisheries revenues to Tuvalu through the optimum allocation and pricing of Tuvalu's Vessel Days and associated purse seine and longline licences.
5. Increase 'at sea' employment for Tuvalu citizens as fishing crew and observers through the provision of appropriately trained personnel and the fullest application of local crewing licensing conditions.
6. Implement the new Departmental organisational structure and associated resourcing as outlined in this Corporate Plan.
7. Implement the Human Resource Development Plan prepared as an adjunct of this Corporate Plan and which has been designed to support the optimum performance of the new organisational structure proposed for the Fisheries Department.
8. Restructure NAFICOT so that it can fully comply with the provisions of the Public Enterprises (Performance and Accountability) Act 2009.

Most, but not all, of these objectives were achieved during the CP1 Plan period (2014-2016). However objective 5 continued to be blocked by regional fishery politics within the Parties to the Nauru Agreement (PNA), while objective 8 faced a number of internal delays. Both objectives will be carried forward to the next Plan period.

The fisheries sector is dynamic and fast-evolving: since Cabinet's approval of CP1 in September 2013 there have been several new developments that required a response by the Department. These include increasing international fishery compliance obligations resulting from Tuvalu's membership of the Western Central Pacific Fisheries Commission, rapidly-changing circumstances affecting the regional arrangements that affect Tuvalu's fishery revenues, and the EU's identification of Tuvalu, in December 2014, as a possible non-cooperating country in regard to illegal, unregulated and unreported (IUU) fishing. All these issues required Departmental action, sometimes substantial, which may not have been anticipated and thus not fully planned for. This emphasises the need for the Department to remain responsive and flexible irrespective of the planning framework adopted.

1.6 Organisation

The TFD organisational structure, shown in Figure 1, was revised as part of the Cabinet decision of September 2013, and came into effect on 1st January 2014.

The Department now comprises:

- An Administration Section, comprising the Director and Deputy Director, several professionals with cross-cutting responsibilities (Legal Officer, Economist and Librarian/ Public Relations Officer) and the Executive staff. The Administration group is responsible, among other things, for recommending fishery policy initiatives, negotiating fishery access arrangements, and establishment of joint ventures in which the Tuvalu Government has an interest;
- An Oceanic Fisheries Section, responsible for industrial fishery vessel licensing, sale of fishery access rights, compliance with Tuvalu's obligations under international fishery treaties and conventions, and monitoring, control and surveillance of fishing activities within the exclusive economic zone;
- A Coastal Fisheries Section, responsible for inshore fishery resource assessment, monitoring, and providing support to kaupule, fishers associations and other stakeholders in the management of coastal fishery resources and the marine environment, both in Funafuti and the outer islands;
- An Operations & Development Section, responsible for the running of the TFD vessels *Manau* and *Tala Moana*, construction and deployment of fish aggregation devices, training of fishers and fishing vessel crew, and other development-oriented activities.

Several new activity streams are expected to develop in the coming years, for example the establishment of arrangements for sanitary control of Tuvalu's fishery product exports in order to meet the food safety requirements of market states. These will be located in the appropriate of the TFD as they are implemented.

2 Fisheries Department resources

2.1 Staffing

The TFD reorganisation in 2014 resulted in some former positions being re-designated, frozen positions being unfrozen, and the creation of a small number of new posts. At that time the Department comprised 42 staff: 11 (including Executive staff) in the Administration group, 9 in the Oceanic Section, 10 in the Coastal Section, and 12 in the Operation and Development Section.

In late 2016 two new positions were approved, of IT Manager and Maintenance Technician. Both these positions were established in anticipation of the specific requirements of the new TFD Building (see section 2.2) and are expected to be recruited in 2017. The organisational structure of the TFD Public Service establishment at December 21st 2016 was therefore as shown in Figure 1.

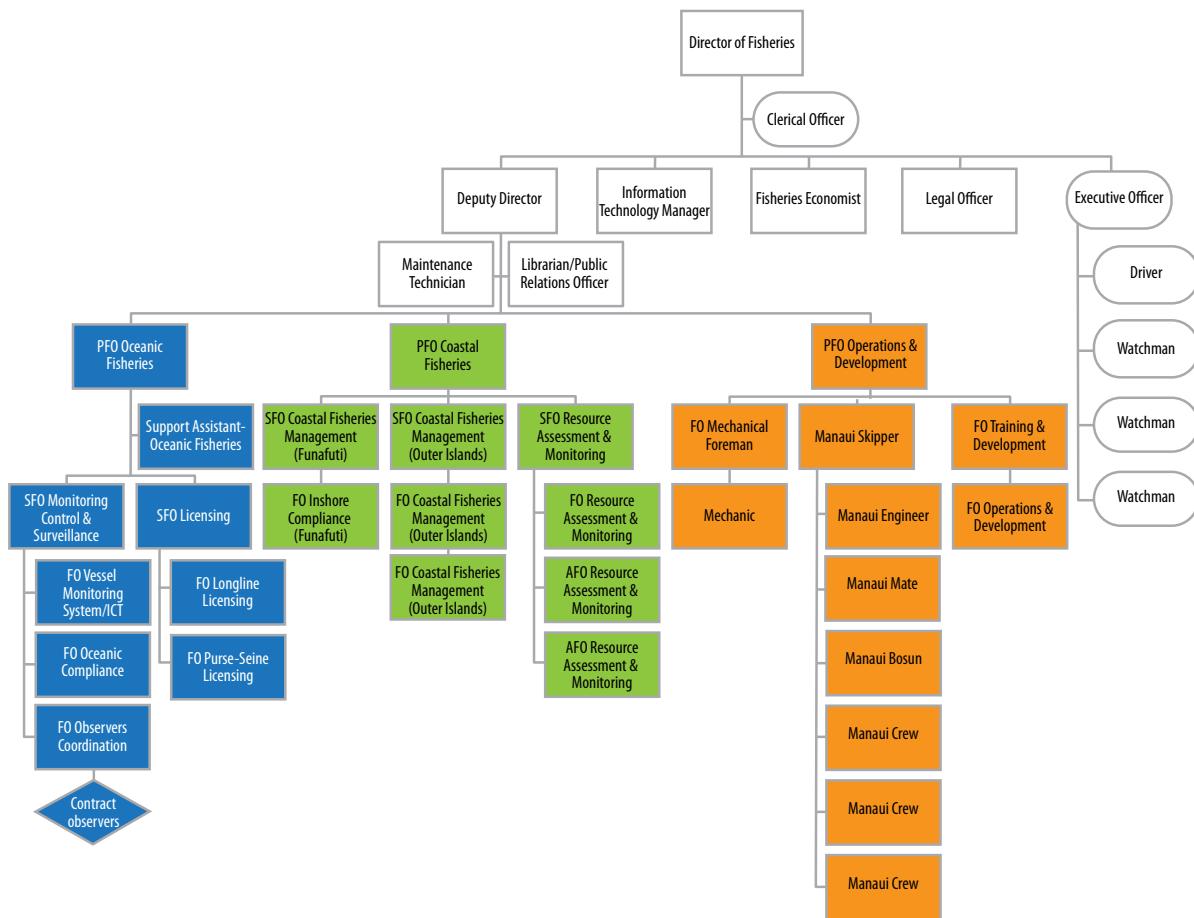


Figure 1: Tuvalu Fisheries Department Organisational Structure.

In addition to the public service establishment, several externally-funded projects continued to operate in 2016 and employed staff who are housed in the Fisheries buildings, and work as part of the organisation. These included:

- A full time Fisheries Department Advisor (since 2012), and a part-time Inshore Fisheries Advisor (since 2014) engaged by the NZ Ministry of Foreign Affairs, and responsible to the Director of Fisheries;
- Two Fisheries officers recruited in 2014 under the GEF-funded National Adaptation Programme of Action (against Climate Change) Phase 2 (NAPA2) project for the 4 year duration of the project. These officers work under the supervision of the Principal Fisheries Officer (PFO) of the Coastal Fisheries Section;
- Eight contract-employed officers and crew of the RV *Tala Moana* were also recruited using NAPA2 funding in early 2016 after delivery of the new vessel to Funafuti in January 2016;
- A Project Coordinator, Project Accountant and Project Officer were recruited in 2016 for the World Bank-funded Pacific Regional Oceanscape Programme (PROP) in Tuvalu.

The Department also manages a pool of 67 trained and qualified fishery observers who are contracted to work on board fishing vessels when required (increased in early 2016 from 47 observers). Although the number of Observers continues to increase each year, there remains a shortage of qualified de-briefers to carry out debriefing and other higher-level functions. So far there are five certified de-briefers (the Observer Coordinator and four trainee de-briefers).

An addition to the 44 officer on the official establishment, therefore, there are a further 82 non-established staff working for the TFD on either a full-time or part-time basis, bringing the total staff complement to 126.

There was considerable staff movement in 2016, which sometimes interfered with delivery of the work programme. The former PFO for Coastal Fisheries resigned to take up the PROP Project Coordinator position; the PFO (Coastal) post was then filled by internal promotion, which left a Senior Fisheries Officer (SFO) position vacant, which was again filled internally, leaving a Fisheries Officer (FO) position to be filled. The FO for Training and Development departed on long-term (3 years) study in 2015, and the position was back-filled in 2016 through secondment from another department. The SFO for Monitoring, Control & Surveillance (MCS) and the Offshore Compliance Officer also left the Department to take up jobs elsewhere (one in another Ministry, the other in a regional organisation), leaving these two posts still vacant at the end of 2016. Some staff movement also occurred between the TFD engineering group and the crews of the two TFD vessels, again creating vacancies that in some cases took a long time to fill.

2.2 Assets and facilities

TFD staff are currently scattered among 6 separate office buildings, some of which are in a serious state of disrepair. The unsatisfactory office environment impedes the proper functioning of the Department, prevents effective communications and personnel management, and has a negative effect on staff morale.

In recognition of these issues, the New Zealand Government has agreed to support the construction of a new office building for the Department (Figure 2). The new building is to be constructed at Teone on the site of one of the Department's existing, decrepit buildings.

It was originally expected that the new building would be completed by October 2015, but several delays occurred, including an overall budget cut by the New Zealand Government, which then led to a need for a re-design exercise and a repeat of the competitive tender process. The building is now expected to be completed in mid-August 2017.

Demolition of several of the Department's old buildings at Teone commenced in December 2016 in preparation for the construction works.



Figure 2: New TFD office building view from the roadside.

The Department runs the FV *Manaui*, an 18-metre fibreglass vessel provided in 1982 by the Japanese Overseas Fishery Cooperation Foundation. The *Manaui* was originally designed as a fish collection vessel to service outer island community fisheries centres, but is now used for deployment of fish aggregation devices, transportation of fisheries staff to the outer islands, and charters. The *Manaui* is increasingly suffering mechanical problems and breakdowns and will soon reach the end of its service life. Discussions are currently under way with OFCF about a possible replacement for the *Manaui*, which it is hoped will become available in 2019.

The NAPA2 and R2R projects on the other hand jointly procured an additional project vessel in mid-2015, named the *RV Tala Moana*, which is more suited to passenger transport and outer-island field work, and was received in January 2016. The vessel is operated by the TFD on behalf of the Government of Tuvalu, and is made available for charter to other organisations when not in use for fisheries or NAPA2/ R2R work.

TFD previously managed two experimental facilities (milkfish farming and foraminifera sand research) on Funafuti, both set up under donor projects and then handed over to the Tuvalu Government. Both facilities were costly to run and of dubious economic or other benefit to Tuvalu, and both of them are now closed down. All equipment is stored in the Fisheries Department buildings and containers, while the laboratory set up by under the Foram Sand Project is now being used for ciguatera monitoring.

Numerous materials needed for the construction of fish aggregation devices (FAD) have been donated and funded by SPC through an EU Devfish2 project, and by the NAPA2 project. FADs are rigged and deployed by Fisheries staff and local fishermen as required, while the rest of the equipment is stored in containers until needed.

The Department also has various items of laboratory and other apparatus used for fishery research purposes, previously donated by the Japanese International Cooperation Agency (JICA). Tables and chairs, book shelves and cabinets have been donated by the Korean Overseas Fisheries Association (KOFA), while others have been locally made and purchased by the Department.

2.3 Budget

Fisheries licensing, access fees and investments now generate a significant proportion of Tuvalu Government revenues: estimated income was \$14.8 million in 2014, \$26 million in 2015, and \$36 million in 2016: 2017 projections are similar levels to those seen in 2016. The Fisheries Department plays an active and critical role in maximising these returns through its ongoing participation in regional and bilateral fisheries negotiation, and the development of strategies intended to promote Tuvalu's economic interests.

Despite its importance in generating Government revenue, the TFD's recurrent budget allocations are far less than the true cost of running the organisation. Overall 77% of the 2016 allocated budget of A\$749,703 was for staff salaries, and just 23% (A\$172,400) for operations. If this is to continue in the future, the Department will be unable to meet its goals under the government roadmap or its own planning documents (CP2 and AWPs) and may not be able to continue improving the benefits the country derives from its fisheries.

Fortunately, the Department has successfully negotiated substantial amounts of additional funding support to the fisheries sector from several major development partners for use in the medium term:

- The New Zealand-Tuvalu Fishery Support Programme (TFSP) is providing operational support funding of NZ\$ 1,036,800 over the 5-year period which commenced on 31st May 2014. The TFSP will also provide new office facilities for the Department, and continues to support ongoing technical assistance services;

- The World Bank Pacific Regional Oceanscape Programme (PROP), approved in December 2014, will provide a total of US\$7,910,000 over a 6-year period that commenced in June 2015;
- The GEF-funded NAPA2 project is providing approximately US\$2.1 million to support fisheries development and food security activities in Tuvalu's outer islands over the 4-year period that started in early 2015.

Together these programmes will support a wide range of activities by the Fisheries Department working in close collaboration with other partner agencies, including the Maritime Wing of the Tuvalu Police Department, the Tuvalu Maritime Training Institute (TMTI), and the Kaupule on each of Tuvalu's islands. Activities to be supported by all three programmes are fully integrated into the Department's Work Programme, under which most activities are funded by a combination of donor and recurrent budget allocations.

Additional support continues to be available through the main fisheries sector regional organisations (Forum Fisheries Agency (FFA), Secretariat of the Pacific Community (SPC), Parties to the Nauru Agreement Office (PNAO) and Western Central Pacific Fisheries Commission (WCPFC)). Technical assistance, training and small project funding is also accessible from time to time through a number of bilateral and multilateral partner agencies and NGOs. However the TFSP and the PROP have greatly reduced the Department's dependence on this type of small-project funding, which can be unpredictable and, sometimes, more closely aligned with regional rather than national priorities.

2.4 Internal management

The TFD work programme saw a significant expansion of activities in 2016, made possible by the additional funding support now available. This has required strengthening the Department's internal management and coordination arrangements. This was done primarily through the Senior Management Committee (SMC), which was first established in 2015. The SMC comprises the TFD Director and Deputy Director, the three Principal Fisheries Officers, the Fisheries Legal Officer, Fisheries Economist, Fisheries Information Officer, PROP Coordinator, and the two NZ-funded Technical Advisors (TAs). This year the SMC met almost every month throughout the year to discuss and review implemented activities against the 2015/2016 AWP and other internal matters.

The effectiveness of the SMC was further improved through quarterly meetings of all TFD staff, which were held to discuss the implemented activities, as well as professional and social issues within the department.

A Project Advisory Committee (PAC) for the TFSP Project was formed in 2014, which comprised the SMC members, representatives from NZAID, UNDP, NAPAI, and the Finance Department. Unfortunately it has proven difficult to convene meetings of this group, and the tendency has been for TFSP issues to be dealt with by the SMC.

2.5 Monitoring and reporting

This year was a very successful one in terms of monitoring of activities. The SMC met almost every month to monitor implementation of the Work Programme. In addition, lectures held once a week to upgrade skills of staff in certain areas, including in the areas of work planning, computing and report writing.

In addition, quarterly progress reports were produced by the TFD, both for GoT internal purposes and to respond to the requirements of NZAP, World Bank and UNDP/ GEF, the Department's major external development partners. The department completed three quarterly reports for internal purposes only.

3 Administration Section activities

3.1 General

Many of the activities of the Administration Section during 2016 were ongoing from previous years. These included recruitment of personnel, staff appraisals, and reporting on the activities of the staff. Many of the Administration staff were involved in regional meetings throughout the year. In addition, with the new departmental structure to promote effectiveness, one of the Fisheries obligations is for the fisheries information to be shared with the public; unfortunately the Fisheries Library is still in poor condition and is waiting on completion of the new building.

3.2 MRA review

The principal piece of fisheries legislation in Tuvalu is the Marine Resources Act (2006). The Marine Resources (Amendment) Act 2012 (MRA) implements a number of changes to the principal act to accommodate Tuvalu's international, regional and national rights and responsibilities in fisheries conservation, management and development. The Amendment significantly increased the level of penalties for various types of offence under the Act.

The MRA underwent further revision in 2016, partly to respond to issues raised by the European Commission in regard to Tuvalu's control of foreign fishing vessels operating in its waters. Several stakeholder workshops were held to discuss the Act's provisions, and technical assistance was sourced from FFA. The revised Act will be submitted for approval by the Tuvalu Parliament in mid-2017.

3.3 Fishery access negotiations

Several of the staff of the Administration and Oceanic Sections are involved in fishery access negotiations, which take place between the TFD and distant water fishing companies/ nations interested in fishing within Tuvalu EEZ. Negotiations usually take place in the second half of the year before the license period, often quite late in the year. For 2016, most of the negotiations were carried out in mid to late 2015 to discuss and agree with the terms of agreement between parties, the license period and fee, number of fishing days and fee for each fishing days and other type of necessary fees such as transhipment fee, observer fee, etc. Fishery negotiations for the 2017 fishing year began in the fourth quarter of 2016.

3.4 Review of NAFICOT

One of the requirements under the Public Trading Enterprise (PTE) Act (2009) is that the National Fishing Corporation of Tuvalu (NAFICOT) has to be registered as a company under the Companies Act. To date this has not occurred and NAFICOT has therefore not fully completed its transition to its new PTE status, nor has it met its reporting obligations under the PTE Act. Government of Tuvalu central agencies (the Ministry of Finance and Economic Development [MFED], the Office of the Attorney-General [AG], and the Public Enterprise Reform Management Unit [PERMU]) have raised a number of concerns about NAFICOT and have proposed that an investigation be undertaken into its operation. In parallel, MNR requested that FFA review NAFICOT and its future direction as a PTE.

Through FFA, a consultant was engaged in 2014 to conduct an investigation, to provide a report on the status of NAFICOT, and to make recommendations on the way forward. After consultations with relevant stakeholders and investigations, a report was tabled to Cabinet with a series of tasks and recommendations .

In late 2016, after a period of inaction, a Cabinet Memo was tabled seeking Cabinet's approval of the report's recommended activities and also to receive a green light on MNR's suggestion to recruit

a consultant to work in-country for several months to do all the required tasks, instead of many different consultants on short term assignments. The TFD collaborated with FFA (Fisheries Development Section) to develop terms of reference (TORs) to access the New Zealand Volunteer Service Abroad (VSA) programme to identify a suitable consultant. This work will be implemented in 2017.

3.5 Participation in regional meetings and workshops

Most of the regional meetings are focused on the management of tuna fishery. Annually, there are more than ten regional meetings in which Tuvalu has to attend and participate in. These consist of: PNA official and ministerial meetings; FFC officials and ministerial meetings; WCPFC Annual Sessions, Technical Compliance Committee (TTC) and Scientific Committee (SC) meetings; the annual FFA Management Option Consultation (MOC); and a range of technical meetings on MCS, observer programme management, fishery trade and economics, and others. In 2016, there were also two US treaty meetings to negotiate and finalize terms and conditions of the treaty prior to the FFC Ministerial meeting in July.

Most of the staff involved in these meetings are from the Administration and Oceanic Sections. There are relatively few regional or international meetings that concern staff of the Coastal Fisheries Section, and in some ways this is unfortunate as regional meetings provide a good opportunity for participants to gain knowledge and develop their personal capacity.

The list of attendees to regional and international meetings is shown Annex 9.2 on page 39.

3.6 Staff training and workshops

TFD staff attended various training workshops, in Tuvalu and overseas, in order to build up their capacity in areas relevant to their work. On the Oceanic Fisheries side, most of the training workshops were to do with the technical side of the vessel day scheme (VDS), data collection and analysis, MCS, and other related tuna workshops. In the Coastal Fisheries Area other training activities included a FAD workshop, international coral reef management training course and oil spill management workshop. SCUBA Diver Training for PADI Open-Water and Advanced qualifications was carried out in Funafuti in late 2016. An in-house lecture series was run by the Inshore Fisheries Adviser on a weekly basis for most of the year.

3.7 Public Information and Awareness Program

The Department conducted a monthly radio program to discuss the activities each section has implemented. Several meetings and workshops were conducted with local communities and fishermen to discuss the status of resources, fishing skills, fish processing and sea-safety initiatives. Through the media, the Department covered all these areas for awareness purposes. A complete listing of the radio shows is given in Annex 9.3 on page 36.

Posters on different fish species, and other fishery-related posters, were distributed to stakeholders in Funafuti and in the outer islands.

Other fisheries promotion activities in 2016 included the establishment of fisheries webpage (www.tuvalufisheries.tv) and a fisheries newsletter to be published biannually.

The fisheries library was re-opened in 2014; previous to that, the library had been inaccessible since 2007. The library holdings were generally scattered, with the resources damaged by the sea breeze and moisture from a leaking roof and storms in January 2016. Only a few of the holdings were still in good condition and these have now been moved to alternative office space in the Coastal Building until the new Fisheries building is completed late in 2017. All damaged library materials/resources were discarded.

Operating and managing the library is very challenging, especially a library that has been moved to many different locations over the years. In 2016 the Librarian / Information Officer worked on improving the fisheries library and some of the tasks achieved were:

- Collection, maintenance and dissemination of fisheries publications;
- Better organisation of the physical books and documents collection;
- Fisheries library marketing activities, including the Fisheries website, public awareness programs & Newsletter (biannually); and
- Indexing and organizing Fisheries closed files.

The current Fisheries library repository includes 138 fisheries closed files that have now been indexed (with still more to index). Tuvalu publications with the amount of 237 print copies concerned fisheries developments and more to be collect, annual report, research report and some of staffs trip report written by our Local staffs and a few of the general collection. There were also a great number of electronic documents (soft copies) in pdf's or MSWord format. These publications include annual reports, research reports, trip reports and also publications of other organisations which based their report and research on Tuvalu fisheries.

Although the Tuvalu fisheries library is gradually developing there is a need to improve some other part of the fisheries library developments such as:

- Digitising the remaining fisheries country publications (print copies);
- Develop a database to search and access the fisheries library for easy and quick access to the collection;
- Continuous update and expansion of the collection to serve the needs of fisheries officers and the public;
- Support in the provision of library services for all fisheries officers and the public;
- Training to improve library development and management, and public relations skills; and
- Resources and materials (e.g. a camera) for fisheries marketing plans activities.

Library activities are very far behind due to lack of equipment (all-in-one scanner, camera, bookshelves), limited internet connection and lack of relevant IT Expertise on library systems.

4 Oceanic Fisheries activities

4.1 General

2016 was a successful year for the Oceanic Section, with fishery revenues of A\$33 million AUD exceeding projections and targets. This is a significant increase over 2015 revenue levels and by far the highest revenues generated to date from fishery access in Tuvalu.

In terms of the 2016 work plan, most activities were successfully executed as planned. The few unachieved activities were in-country training courses and workshops which could not be carried out due to unavailability of facilitators from the FFA or SPC. A planned vessel-sightings workshop in Vaitupu was not undertaken due to a conflict with a major EKT (church) conference on the island, and the preoccupation of the island community with preparations in the lengthy run-up to this major event. This visit will be rescheduled to early 2017. The WB PROP is now providing significant funding to support and implement all activities under this section.

The Oceanic Section nevertheless encountered a number of challenges throughout the year, in particular staff shortages due to overseas travel, paternity and medical leave which severely affected the daily activities of the Section. Data entry and monitoring of transhipments in port are becoming

ongoing challenges due to lack of staff and observers. A new emerging issue is the increase in oil spill incidents in port in Funafuti lagoon. Trying to put a stop to these incidents from happening in the future remains a huge challenge for this section. Cooperation between various Governmental sectors will be needed to address this problem or else a policy decision should be carefully considered to ban transhipment in port.

Compliance by both the domestic and foreign distant fleets concerning their fishing activities in our EEZ remains challenging. However, the Oceanic Section continues to collaborate with the Maritime police to regulate and apprehend any vessels suspected of IUU activities.

In terms of staffing, the total number of Oceanic staffs in the current established structure is nine. All of these positions were filled in mid-year 2015. Unfortunately, towards the end of 2016 two of the MCS staff left the Oceanic section for other positions in other Government sector and the PNA office. Recruitment of new staff to fill in these two vacant positions (SFO MCS & FO Compliance) will be a priority in 2017.

4.2 Licensing and access

The TFD continues to issue fishing permits/ licenses to its bilateral and multilateral fishing partners from Korea, Taiwan, Japan, Fiji, Kiribati, New Zealand, the USA, vessels operating under the FSM arrangement, and Tuvalu domestic vessels. All foreign companies interested to fish in Tuvalu must first sign and finalize a fisheries access agreement with the Tuvalu Government through the Fisheries Department before they are authorized to fish in our waters (this is a legal requirement under the MRA).

A total of 309 vessels were licensed to fish in Tuvalu waters in 2016 (Table 1). These fishing vessels include purse-seine (PS), longline (LL), pole-and-line (PL) and other supporting vessels such as fish carriers and bunker vessels.

Table 1: The number of licences issued by gear for the last 6 years, as well as for support vessels (carriers and bunkers).

Year	Long line	Purse seine	Pole and Line	Fish Carrier	Bunker	TOTAL
2011	96	125	5	0	4	230
2012	108	100	5	18	2	233
2013	33	146	16	7	3	205
2014	43	187	20	29	6	285
2015	22	143	1	34	5	205
2016	67	198	3	40	1	309

In most cases licences are issued on an annual basis, but some longline vessels apply for licenses for 6 months only. This can occasionally lead to a situation in which one vessel may operate under two licences in a given year. In the case of pole-and line vessels, licences are issued on a per-trip basis.

Similar to the 2015 period, purse seine fisheries accounted for most licenses issued in 2016. A large proportion of these purse seiners operate under multilateral arrangements – the FSM Arrangement (73 vessels) and the US Treaty (39 vessels) – with the remainder being licensed on a bilateral basis. Most bilateral-licensed purse-seiners are from Korea, Taiwan, Japan and a smaller number of licenses issued to purse seiners from Tuvalu and New Zealand.

The second largest licensing category is for longliners, which all operate under bilateral arrangements. The number of longline licences tripled in 2016 compared to 2015. Most longliners currently operating in Tuvalu waters are from Korea and Fiji, with small numbers of Chinese and Tuvalu vessels.

In addition, support vessels such as bunker and fish carriers are also licensed by Tuvalu Fisheries to carry out fishing or fishing related activities in our EEZ. There has been a gradual increase in the

number of fish carriers licensed to operate in Tuvalu, due to an increase in transhipment in Funafuti port, which commenced in late 2014 and continued through 2015 and 2016.

4.3 Catch by the Tuvalu national fleet

Tuvalu has five flagged vessels that actively fished in the WCPO in 2016. There are two Longline vessels, one purse seine vessel and two bunker vessels on the WCPFC Record of Fishing Vessels (RFV) (Table 2).

Table 2: *Tuvalu's flagged vessels.*

Vessel Name	Flag	Registration Number	Vessel Type	IRCS
Fong Seong No. 888	TV	29489613	Bunker	T2MZ4
M.T. Kosiam	TV	15677807	Bunker	T2UB2
Pakasoa	TV	23011010	Tuna longliner	T2RB3
Taumoana	TV	19930909	Tuna purse seiner	T2FA3
Tuipuga	TV	23951010	Tuna longliner	T2TT3

In 2016, Tuvalu purse seine vessels caught an estimated 6,110 mt in the Convention area as shown in Table 3 and Figure 3. Approximately 98% (5,970 mt) of the catch was skipjack (SKJ) and 2% (140 mt) yellowfin tuna (YFT).

Table 3: *Annual provisional catch estimates (MT) for Tuvalu PS fleet, in the WCPO (2012-16)*
(source: Tufman 2 - 2016 data are provisional).

Year	Big Eye	Skipjack	Yellowfin	TOTAL
2012	277	5,877	2,063	8,217
2013	256	9,156	1,453	10,865
2014	189	5,669	805	6,663
2015	59	4,304	233	4,586
2016	0	5,970	140	6,110

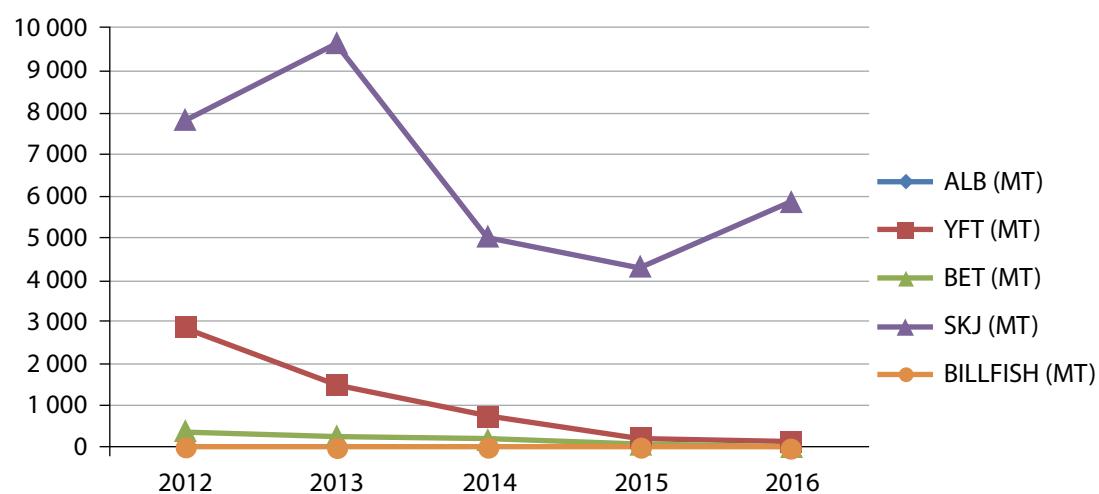
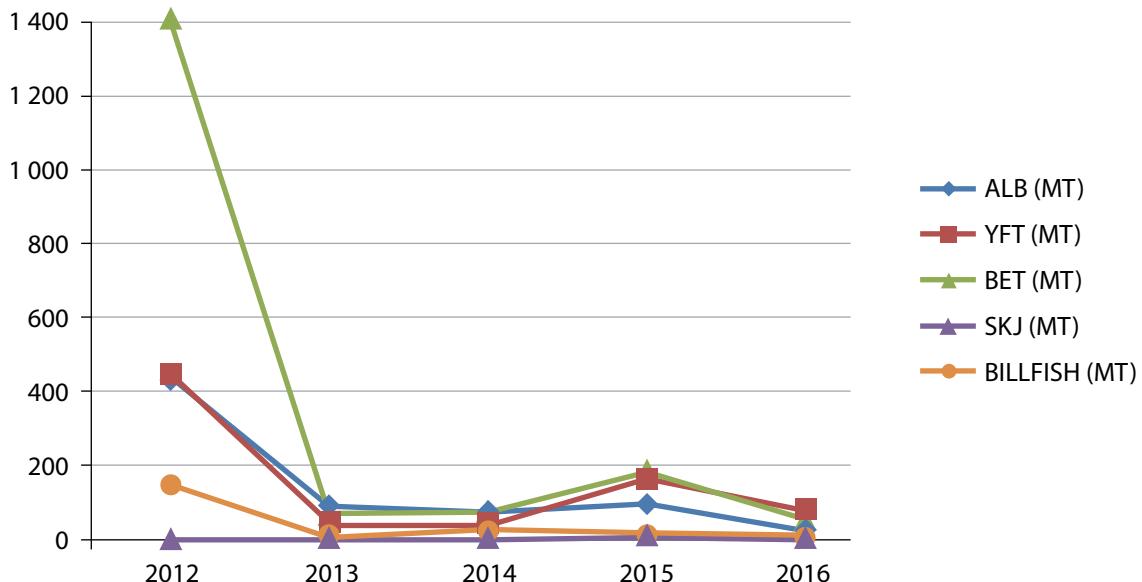


Figure 3: *2016 Annual catches by species for the Tuvalu national purse-seine fleet in the WCPFC Convention Area over the past 5 years* (source: TUFMAN 2).

No bigeye tuna was taken by the Tuvalu purse-seine fleet in 2016, and this led to the fleet receiving an exemption from the provisions of WCPFC Conservation and Management Measure (CMM) 2015-01, such that it will be allowed to fish on the high seas using FADs in 2017.

Figure 4 shows the longline catch volume for the key tuna species & billfishes over the past 5 years (2011–2015) by Tuvalu-flagged longliners.

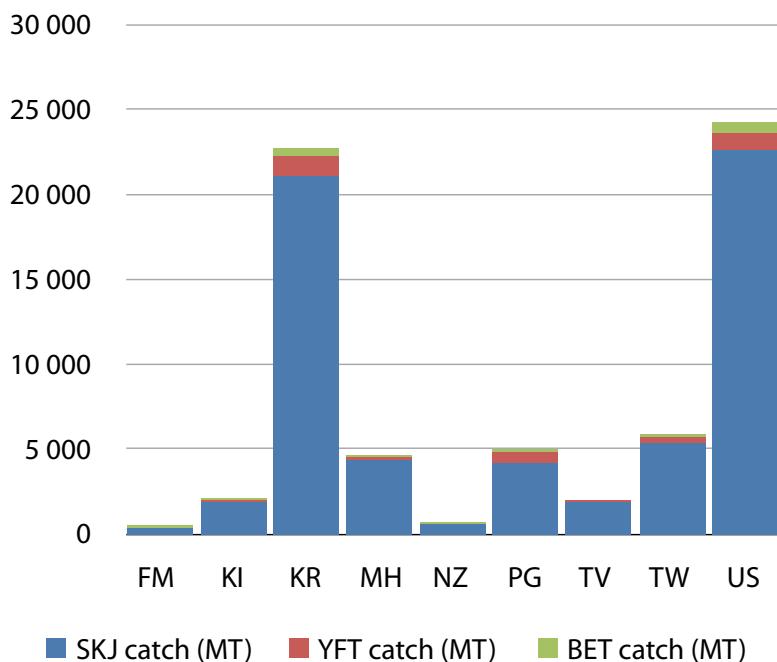


*Figure 4: Annual catch estimates for the Tuvalu national longline fleet
(source: Tufman 2 – 2016 data are provisional).*

The 2016 annual catch estimates used above are still provisional and may be subject to change until middle of 2017 when the WCPFC “Part 1 Report” is due.

4.4 Catch in national waters

Figure 5 below illustrates 2016 provisional purse seine catch estimates by various fishing fleets (foreign and domestic) in Tuvalu’s EEZ. The estimates are for the 3 target tuna species skipjack, yellowfin and bigeye tuna.



*Figure 5: 2016 Annual purse-seine catch by fleet in the Tuvalu EEZ
(source Tufman 2; SKJ=Skipjack; YFT=Yellowfin; BET=Bigeye tunas).*

Figure 6 below illustrates the 2016 provisional longline catch estimates by various foreign and domestic fishing fleets in Tuvalu's EEZ.

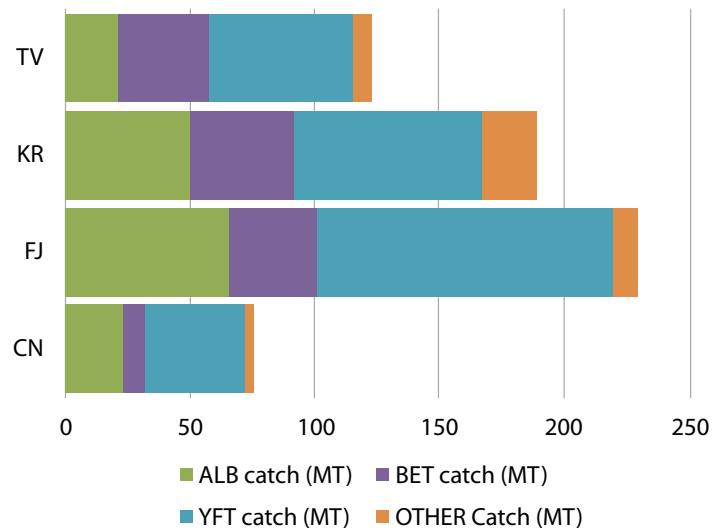


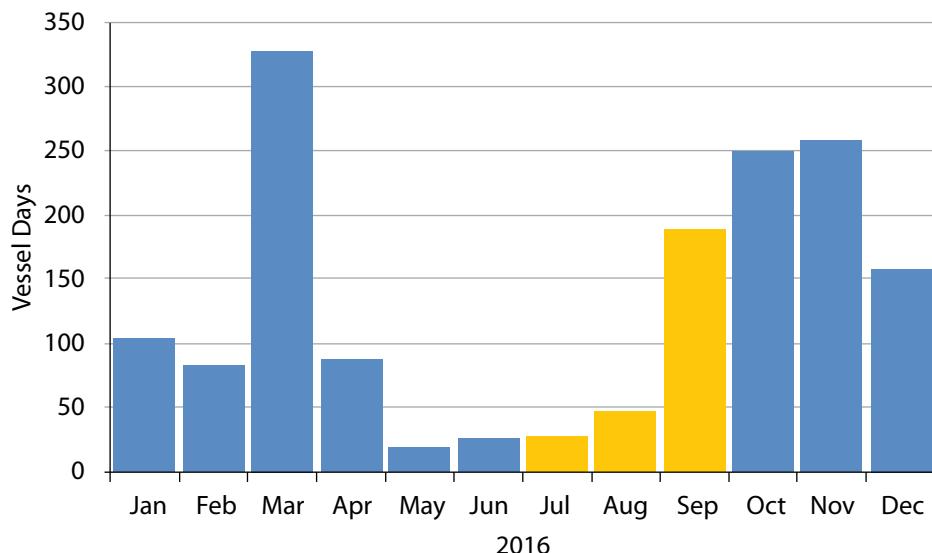
Figure 6: Longline catch (source: Tufman 2; MT=Metric tons; YFT=Yellowfin; BET=Bigeye; SKJ=Skipjack; TV=Tuvalu; KR=Kiribati; FJ=Fiji; CN=China).

The estimates are for the main target species (yellowfin, bigeye and albacore tunas) and for ‘others’, which includes marlins, swordfish and other by-catch species.

4.5 Fishing effort

Tuvalu’s 2016 Party Allowable effort (PAE) under the PNA Vessel-Day Scheme (VDS) was 1,890 vessel-days (VD). We then allocated 449 days into the US Treaty pool, 189 days into the Sub regional pool and we also transferred from other EEZ to be used in Tuvalu waters. We ended up with 1,482 days of our PAE remaining for bilateral sale in 2016. All our days were sold but only 93% (1389.4 days) was used to fish in our waters by our bilateral partners.

Figure 7 shows the purse-seine VDS monthly usage by foreign fleets in our EEZ. Total effort in zone was 1579 fishing days, which excluded days exercised by US, FSMA and SRP vessels



*Figure 7: VDS monthly usage by bilateral fleets
(excludes vessels fishing under the UST and FSMA. Orange bars are the FAD closure months).*

The compulsory 3 months FAD closure (established under WCPFC Conservation and Management Measures) runs from July until September annually. This is the period where less fishing activities in zone is anticipated in which seems to be the case in July as above. However, in August fishing activities started picking up and increase further in September with the fourth highest month of fishing activity in our EEZ.

Figure 8 shows the distribution of fishing vessel (PS and LL) activity in the waters of FFA member countries, based on position reporting through the vessel monitoring system (VMS). The darker red area on the map represents a more heavy or concentration of fishing activities by EEZ as compared to other colour schemes on the maps.

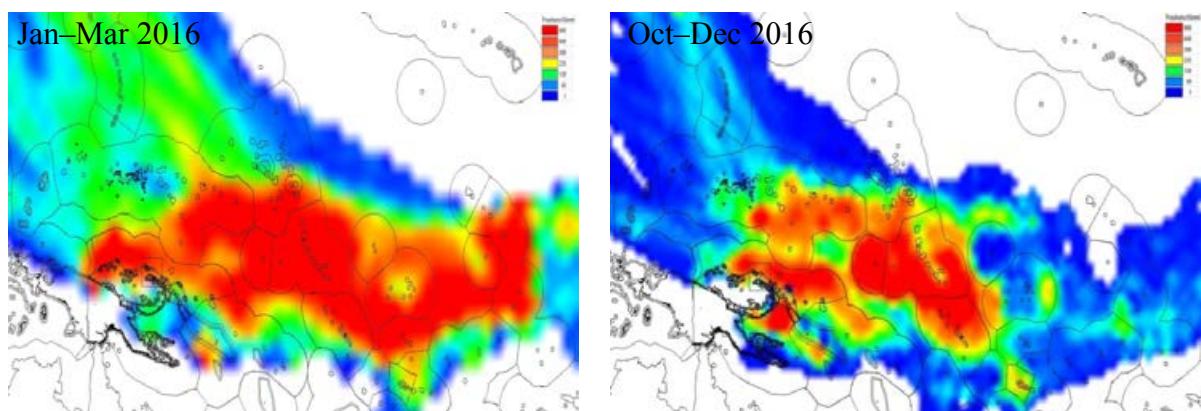


Figure 8: Distribution of fishing vessel activity in the waters of Tuvalu and other FFA member countries.

The VMS data shows that most fishing vessel activity in 2016 was concentrated in the northern sector of Tuvalu's EEZ.

4.6 Fishery revenues

Fishing license, access and other fees generated a total income of AU\$33m for the Government recurrent budget in 2016. A gradual increase from last year total revenues of AU\$31 million and by far the highest revenue record as in accordance with Oceanic records. In addition, the Oceanic section received about AU\$788,718.38 from observer levies in 2016. These observer levies are payment of \$3,000 USD per fishing vessel licensed to fish in Tuvalu waters that are remitted into the Tuvalu Development Fund (TDF) and then transferred to the Observer Project vote with Treasury to administer and manage the national observer programme.

Figure 9 below shows the breakdown by percentages of revenues collected by various licensing category in 2016. The bulk of the revenue was generated from the selling of our fishing right under the Palau arrangement VDS and the US Treaty multilateral agreement.

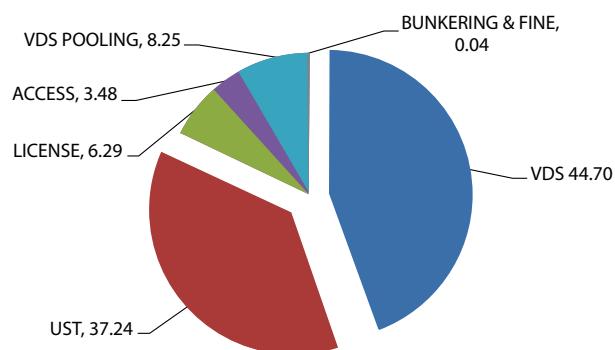


Figure 9: Revenues by licensing category (percent) in 2016.

4.7 Transhipment

Year 2016 has again witnessed the ongoing transhipment activities in port despite the FAD closure period and the increase in transhipment fees. The August-September period was the busiest period throughout the year as fishing vessels flocked in one after the other in-port for transhipment.

In 2015, the total catch transhipped in Funafuti port was 163,679 MT valued at AUD \$500,388 using the old rates. As at December 2016, a total of 117,937 MT tuna was transhipped in Port Funafuti and is estimated to generate a total revenue of USD \$946,590.

Table 4: Total tonnage of tuna species transhipped in port as at 31 December 2016.

Flag	No. vessels	SKJ	YFT	BET	Mixed	MSC	PD Grade	Trans-shipment	WCPO	Product	Gear
S/Korea	49	61,249	5,323	1,947.1		SJ/YF 3,816	1157.5				
PNG (FSMA)	18	5,519	990	103	845	SJ/YF 6,197	505				
Kiribati	7	10,677	186	17			55	In Port	Yes	Frozen	Seiner
Taiwan	6	4,196	642			605					
USA	17	10,819	499	89		1,755					
China	1	694	45	6							
Total	98	93,154	7,685	2,162	845	12,373	1,718				Total transhipped 117,937 mt

Trying to get timely settlements of all outstanding fees and allowances of authorized officers from the company is becoming a challenge. The company and their local agents have been encouraged to fast track payment process, however still a large amount of these fees/ allowances are still outstanding. The Oceanic is working closely with the company to settle all 2016 outstanding transhipment fees before end of this year 2017. Oceanic section is also looking at resolving some of the challenges faced with transhipment activities in port:

- Lack of man power to monitor transhipment from the morning until late at night when transhipment stops.
- Inconvenient transport provided by local agents to the boats and back to shore
- Boardings during weekends for officers who are not entitled for overtime allowances.

Settlement of outstanding fees by each fishing company is a work on going and will require assistance from the Admin in reminding these foreign companies to settle their outstanding arrears.

4.8 Monitoring, Control & Surveillance (MCS)

The Monitoring Compliance and Surveillance (MCS) unit is a key component of this section and also to the broader fisheries management process. It is under the Oceanic fisheries section and it covers a wide range of responsibilities which includes the Vessel Monitoring System (VMS), Observer Programme, regional and national surveillance operations and monitoring implementation of the Vessel Day Scheme (VDS). The main focus is to deter and eliminate all Illegal, Unregulated and Unreported (IUU) activity in Tuvalu EEZ.

4.9 Vessel Monitoring System (VMS)

All vessels registered with the FFA good standing register and PNA fishery information management system (FIMS) are monitored and reporting on the FFA vessel monitoring system (VMS) and FIMS resulting in no manual reporting submitted through the Regional Fishery Information Management

Framework (RIMF). Other fishing vessels which are on the WCPFC register of fishing vessels (RFV) and are fishing in the high seas only are reported and can be monitored in the WCPFC VMS.

On May 1st 2016, the FFA VMS transitioned from the old interface known as Smart Trac to a new platform known as Trackwell. This resulted in a training that was organised by FFA to successfully transition VMS officers into the new Trackwell system. There is ongoing work and developments on improving the new VMS system to cater for the members' needs. During the training members raised particular concerns on the need to integrate analysis functions and tool (similar to those in Smart Trac) to the new Trackwell system.

With the new VMS system there is a lot of training required for VMS officers to successfully familiarize and transitioned into using the new system effectively.

4.10 Regional Operations/Surveillance Patrol

There were few surface patrols in 2016 due to frequent breakdown of Te Mataili, the Tuvalu patrol vessel, in the first half of the year. In May Te Mataili conducted one surface patrol during the Operation Island Chief with a total of 17 boardings made. At the same time Tuvalu was also running a joint operation with New Zealand under operation Calypso. It was beneficial for Tuvalu as there was an additional patrol boat asset to patrol in our EEZ. Two boarding officers from Fisheries and the Maritime Wing of the Tuvalu Police Force were on board the NZ vessel Otago as sea riders while in Tuvalu waters. Another TFD staff member was at the FFA HQ at RFSC as part of the exercise providing support during the operation. A total of 25 vessels were boarded in Tuvalu waters (17 by Te Mataili and 8 by the Otago). Overall operation throughout the region was very good and there were reports of dark contacts (vessels not on VMS) sighted by aircraft in Fiji waters and also blue boats (Vietnamese vessels targeting sea cucumbers) sighted in FSM whilst some were apprehended in New Caledonia.

Shortly after Operations Island Chief and Calypso a US coast guard vessel Kukui requested to undertake a fisheries operation in our waters (Operation Kiokio). Timing and preparation was at short notice and during the operation there were only 5 vessels boarded during the operation as most of the vessels had already been boarded in the most recent Op island chief.

In August, Te Mataili went to Cairns for maintenance and returned at the end of the year.

In the last half of the year, the Oceanic section and Tuvalu Maritime police deployed a successful joint surface patrol operation in the EEZ using the TFD research vessel Tala Moana. The operation was organised to coincide with the regional surface operation Kurukuru 16. The Tala Moana patrol was funded by the TFD using PROP funding. Sixteen boardings were conducted during this operation. No vessels were apprehended as all fully complied with their license conditions and our national laws. A number of lessons learnt and issues were identified to improve in the next operation in the near future.

4.11 National Observer Program

In 2016 the Tuvalu National Observer Program (TNOP) managed to successfully run 6 different observer training courses in country. These courses include a basic observer course whereby a total of 20 new observers were recruited and underwent a five weeks course. All 20 were certified and increased the number of our active observers to 65. Other trainings were held after that including the Part A, B and C Debriefe course and the Marine Stewardship Council (MSC) course. At the end of the day about 4 of our senior observers were certified as Debriefers and 13 were recruited as Trainee debriefers who can now assist in the debriefing process. Lastly but not least, 20 of our experienced observers were certified as MSC eligible observers after successfully attending to a 2-day intensive MSC course run in late May. Another 15 observers were certified in-country in late September 2016 by a trainer from the PNAO.

Overall the trainings were successful and contributed constructively to the successful management of the observer program to meet the PIRFO standards.

In terms of placement opportunities, most of our observers were placed on board Korean flag vessels transhipping in Funafuti. The total number of placements in 2016 under the TNOP, PNA and UST observer programmes was 153. Majority of the placements (82 placements) was done on Korean Flag vessels under our national program, 68 placements was done on POA FSMA boats while 3 placements was done on UST boats in 2016. In total about 209 observer trips was made by Tuvaluan observers on various foreign fishing vessels in 2016.

4.12 European Union (EU) yellow card

Tuvalu Fisheries is yet to receive an uplift of the yellow card that was given by the EU in 2014. Tuvalu Fisheries requested assistance from the FFA and PNA on addressing some of the issues and shortfalls identified by EU in their assessment in 2014. The shortfalls relevant to this section include the review of the national plan of action (NPOA) on IUU for Tuvalu Fisheries and improving prosecution of illegal fishing in our EEZ. This work has commenced in 2015 and a number of FFA visit and consultation in country were carried out in 2016 to complete this work. This section will continue to work together with the FFA and other agencies to resolve these shortfalls identified by the EU.

4.13 Other activities

The Oceanic section conducted the second phase of the vessel sighting awareness workshop in 2016 with the visit to one of the outer island Nukufetau island during first half of the year. The TFD compliance officer delivered this important workshop, which successfully raised awareness among the island community on what information they should gather and report to the TFD in Funafuti upon any sightings of fishing vessels. The community agreed to delegate the task of reporting these sightings to the TFD data collector on the island.

A similar visit to Vaitupu Island was postponed due to the EKT Church meeting, and will be re-scheduled for 2017.

There have been a number of prosecution cases of alleged offences in 2016. All of these prosecutions were settled out of court upon payment of fine within a given timeframe. Most of these are considered minor violations which are related to failure to comply with reporting requirements and license conditions. The fine ranges from 10,000 to 50,000 USD. There was one serious violation of oil spill in port Funafuti. One of the Korean Flag vessels Sajo Olympia was fined at an agreed settlement of 200,000 USD for being responsible for the spill in port.

4.14 Challenges encountered

A number of challenges were faced throughout the year. These included:

- Frequent internet breakdown due to the unreliability of the local internet service provider. This became more complicated with the breakdown of the VSAT connection in late August. An FFA IT team was informed but was not available to attend and rectify this issue in country. They have scheduled a planned visit in early 2017. Regarding the local internet service provider, telecom technicians recommended a need to replace the old phone lines to improve and address the problem of frequent internet outage.
- Lack of MSC observers resulted in Tuvalu losing out in many placement opportunities on most of our national and PNAO placements. An MSC course was held in October to certify a number of our observers who are on Funafuti and yet the number does not meet the demand. More MSC-certified observers are needed.

- The PROP project seemed to operate with very complicated processes to procure equipment that is included in the PROP budget. It is recommended for a process whereby all observer and Oceanic equipment is purchased using the observer fund in order to fast track the process of getting the equipment that is needed. These funds could then be reimbursed by the PROP.
- Shortage of staff towards the end of 2016 was a challenge due to unexpected paternity and medical leave of three Oceanic Section staff. In addition two senior staff left the Oceanic section for other new positions at end of 2016.
- The slow progress in data entry for Licensing and observer data due to shortage of staff. This problem will require a recruitment of temporary staff to help out in scanning and compiling all these data that needed to be sent to SPC before end of April each year.

In summary, the most stand-out challenge that is faced by this section is the lack of staff which leads to majority of the problems mentioned above. It is important to rectify this problem to ensure the successful implementation of the Oceanic section work plan annually.

5 Coastal Fisheries activities

5.1 General

The year 2016 was a busy year with lots of changes to positions and activities compared with previous years. Most of the activities in the Annual Workplan 2016 were successfully achieved, except the development of a Beche-de-mer (sea cucumber) Management Plan which was dropped because it was decided to shift the focus of 2016 on data collection and postpone all management plans to 2017 when the data would be available to formulate them.

The position of Principal Fisheries Officer was filled by the former SFO for Funafuti, leaving the position of SFO vacant. Two additional staff from the NAPAI Project were more fully integrated with the Coastal Fisheries Team and the activities they were engaged to deliver are now in better alignment with the Coastal Section's workplan.

5.2 Support Program for Outer Islands

The Support Program for Outer Islands has now been institutionalised through the establishment of regular (4 times per year) Metronome trips to the outer islands. These trips, using the new research vessel Tala Moana, are cost-shared between NAPAI and TFD and will see each island being visited about once every 9 months for 10 days each. This has allowed the Coastal team to plan for efficient delivery of services and collection of data on all outer islands on a regular basis and will change the way the Department works with outer island communities.

Outer Islands support is a collaborative programme mainly between the Coastal Section and Operations & Development Section. The activities under the support program include consultations with Kaupule, fishers and other segments of the community, surveys, training, the deployment of FADs, FAD maintenance, consultations for a FAD MOU with fishers, Sea Safety and Aluminium Welding training. Details of the work activities and outputs of the OI support program are available separately under the Metronome trip reports which can be downloaded from <http://www.tuvalufisheries.tv/library>.

5.3 Support program for Funafuti

The support program for Funafuti included assistance to the Funafuti Fishermen's Association with their fund-raising activities. The Fishermen's association conducted three fishing competitions in

2016, using the profit from the catch landings as donations to the association. The Coastal and O&D Sections assisted with the counting of catches and in providing a market place and ice-cubes (Figure 10). This support program provided an opportunity for the collection of creel data (see below) as soon as fishermen landed their catches. It also allowed the department to make observations on the possibility of setting up a fish market at Teone as proposed by fishermen over the years.



*Figure 10: The creel team at work.
Photo taken during the last Fishermen's Fishing Competition for
the year 2016 at the old NAFICOT building on the Fisheries compound.*

5.4 Creel Survey Program

Since the revival of the Creel survey in 2015, substantial improvements have been made and the program ran smoothly throughout 2016. In summary, a total of 300 fish landings were enumerated, 16,074 fish measured, 188 fish species identified and 33 fish families recorded (Figure 11). Of 22 indicator species for which length at maturity data were available, 13 or 60% of species were found to be stressed, with more than 50% of landings of these fish being undersized. This means that these species (and probably others for which we did not have the data to test) need some form of management to return and then maintain stocks at a more productive and sustainable level. The first technical report for the creel survey was made available in early October and can be downloaded from <http://www.tuvalufisheries.tv/library>. Dissemination of the creel survey results to relevant partners and expansion of creel survey to the outer islands are expected to happen in early 2017 during our Metronome Trips. In 2017 these will form the basis of management plans to improve benefits from coastal fished resources.

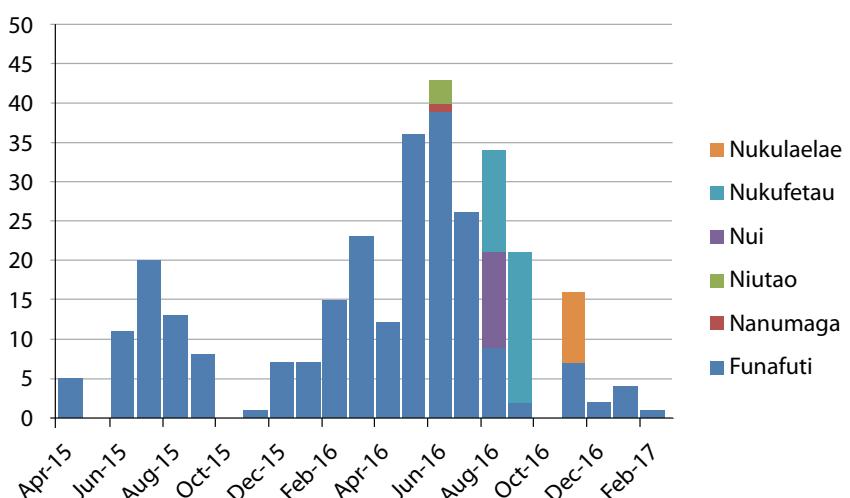


Figure 11: Creel samples per month by island in 2016.

5.5 Resource assessment and monitoring

Underwater visual census (UVC) surveys were dropped in 2016 because they do not as efficiently and quickly provide the data needed for management of the resources as creel surveys can. Although UVC is an important part of the longer term work that needs to be done by Fisheries for estimating stock sizes (how many fishes and invertebrates are available on the reef) this work is expensive and slow to produce results (requiring also comprehensive habitat maps). UVC work will be reconsidered in later years. Instead, the focus in 2016 was on socio-economic surveys, creel survey data and some counts of the toxic dinoflagellates responsible for ciguatera fish poisoning. These data were collected to provide a clear picture on the status of our resources and to assist with the compilation of fisheries profiles for Funafuti and the outer islands.

5.6 Monitoring of the microalgae that cause ciguatera fish poisoning (CFP)

Ciguatera fish poisoning monitoring started to make progress this year. Progress includes the training of responsible staffs on sample collection, sample analysis and establishment of initial sites for monitoring (See graph x). Good coverage of monitoring sites and mapping of affected sites are expected for next year with the completion of the new office building next year and availability of equipment. The number of CFP cases based on hospital records was 27 as compared to the 14 cases recorded in 2015.

The pie chart (Figure 12) shows CFP cases in Tuvalu in 2016 whereby only three islands were affected by CFP. Funafuti Island has the highest number of CFP cases (67%), which consist of 12 male and 6 female. Nukufetau Island has 6 cases (22%) which consist of 5 male and 1 female while Niutao Island has the least number of CFP, which is only 3 male (11%).

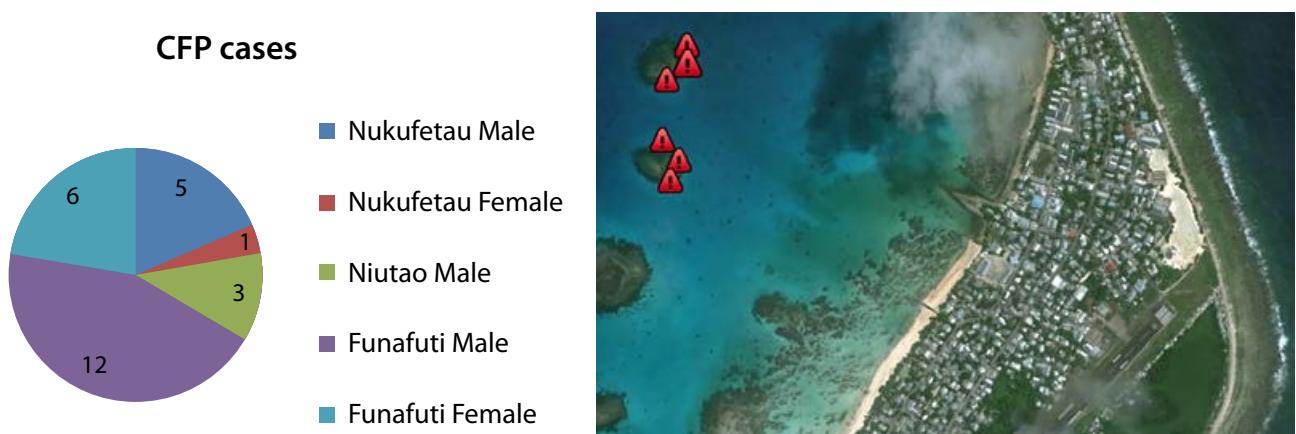


Figure 12: Ciguatera fish poisoning cases recorded in 2016 and some ciguatera hotspots in Funafuti lagoon. In these hotspots, toxic levels of over 25,500 Gambierdiscus toxicus per 100 g of host algae were recorded.

5.7 Artisanal tuna data collection

The artisanal tuna data collection with support from the Secretariat of the Pacific Community (SPC) was continued in 2016. By the end of the year, the SPC project was concluded and plans laid for merging the data collection with the creel survey to gather data on reef and pelagic coastal fisheries simultaneously using PROP funds. A two week training workshop for data collectors was conducted in late August to early October in which data collectors were trained on ways to get quality data and were introduced to the Creel Survey. A technical annual report 2016 for the artisanal data collection will be made available in the end of first quarter of 2017. In summary for total catches, artisanal fishermen caught a total of 38,435 kg skipjack tuna SKJ, 24,863 kg yellowfin tuna YFT and 4,650 kg bigeye tuna BET in 2016 (Figure 13).

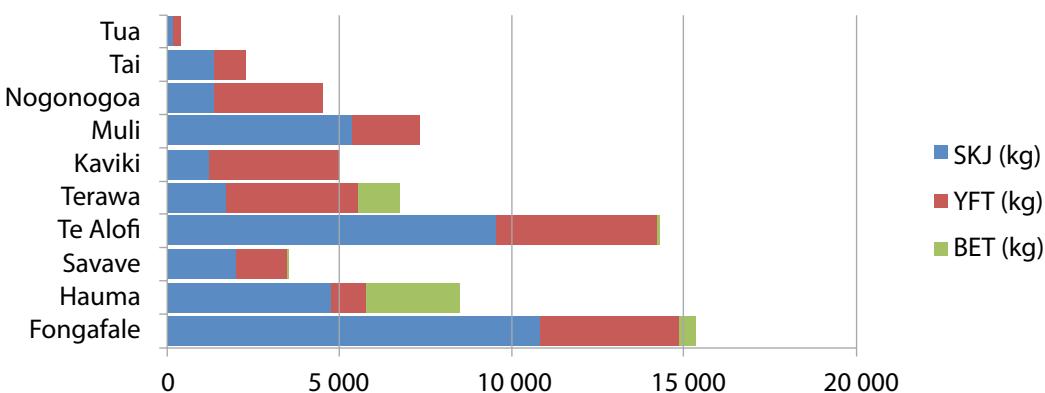


Figure 13: Total catch of artisanal tuna by small-scale fishers in 2016

5.8 Outreach programs & in-house training

The outreach programs for this year were mainly through radio broadcasts and by Metronome trips to outer island communities. In-house training on building staff capacity was conducted throughout the year under the coordination of the Inshore Fisheries Adviser (IFA). An additional in-house training for staff who have not gained an open water dive certificate and advance diver certificate was also conducted in early September by a hired dive instructor based at USP, Suva. The dive training also included two staff from the Marine Department, two persons from the private sector and the rest of the team were from the TFD.

5.9 Reef fish exports

The monitoring of reef fish exports was an additional program that the Section undertook this year. It mainly involved the collection of fish that were taken out of Tuvalu during outbound flights and shipping. The data were collected mainly from the Quarantine team from the Agriculture Department and stored in the Coastal Fisheries Database.

In summary, there were a total of 779 coolers of fish recorded for export in 2016 (Figure 14). The highest record was notable in the months of July and November and the least was recorded in August. It is expected that data collection will continue in 2017 and beyond, and the Coastal Fisheries Database has been expanded to accommodate the information being collected.

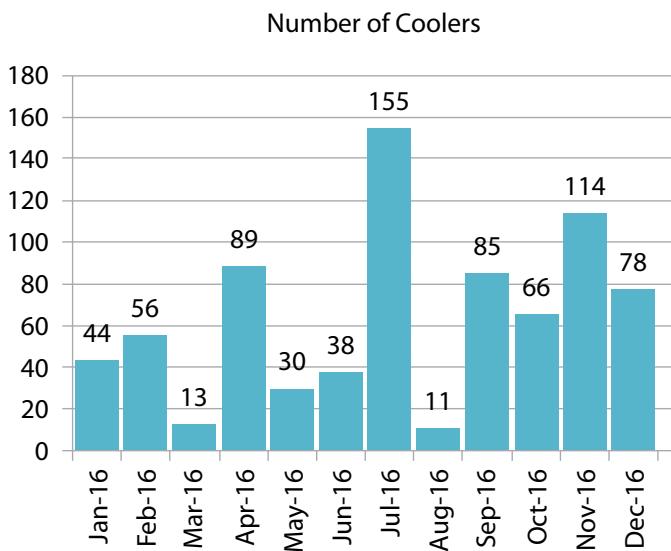


Figure 14: Number of coolers of reef fishes exported from Funafuti in 2016

One limitation of the program was that the actual number of fish by weight, size, species, product (cooked, raw) and count could not be determined given records were simple counts of the number of coolers going out of the country. There was also no standardised method of determining cooler size. Improvements on data collection for this program are expected for next year.

5.10 NAPA II fisheries component

The two Fisheries staff recruited under the NAPA 2 project continued to work closely with the Coastal Section. One of the staff resigned and it took almost half a year for his position to be filled and this caused major delays with the delivering of project outputs. During the year, it was recognised that the TORs for the NAPA 2 officers were not clearly specified and thus evaluation of staff performance was difficult to monitor. It is expected that NAPA 2 fisheries officers will have new TORs that sets out their main key roles and duties for 2017.

6 Operations and Development activities

6.1 General

This was another challenging year for the Operation and Development Division (O&D) due to the many tasks required to be accomplished relative to the man power currently available. Given this the TFD has had to be strategic in its approach by selectively picking those tasks perceived to be most urgent. Falling in this category of activities were Sea Safety, Fish Aggregating Devices (FADs), and post-Cyclone Pam recovery activities. The O&D division also facilitated some of the NAPA 2 project activities. Full details of the attempted activities and others (on-going activities) are described below.

6.2 Manau

The Manau continued to be a priority activity given its old age. The matter of fact is Manau has reached the state where maintenance has become a regular thing. A visit by one official from Japan to the department in June specifically to assess the status of Manau confirmed the need for a replacement. A draft report of his assessment is available.

While waiting for the replacement vessel keeping the Manaui operational was of paramount importance. As such, installation of a new generator and a new winch occurred in the month of February. The full cost of two deliveries was being met by the OFCF. The OFCF also supplied its own expert for installation with assistance provided for by local counterpart. Also received from the OFCF this year was a new work (RIB type) boat with engine (30hp Yamaha), a replacement for the Manaui old fibreglass boat being seriously damaged by cyclone Ula at the beginning of the year.

Many other minor maintenance works were also undertaken. The full list of maintenance carried out can be found in a separate report.

Despite the old age and frequent breakdowns, the Manaui continued to service both private and government charters (Table 5). However, the resignation of the skipper in April was another setback we did not anticipate and has caused unduly suspension to the activities of the Manaui. Strict recruitment protocols and unavailability of qualified personnel were too real to overcome resulting in a two months wait for a skipper to be finally appointed.

Table 5: Number of trips executed by the Manaui in 2016

Charter category & purpose	Total trips
Official	9
Passenger drop off Vaitupu, Education Department	1
Pick up data collectors Vaitupu and Nukufetau TFD	1
Pick up Nukulaelae Data Collector TFD	1
Pick up staff at Nanumea Lands Department	1
Post-project evaluation Nanumaga & Nukufetau	1
Return Nukulaelae Data Collector TFD	1
Gift to Vaitupu OPM	1
Return of Vaitupu & Nui Data Collectors TFD	1
Geodetic surveys on Nukufetau & Vaitupu Lands Department	1
Private	8
Cargo drop-off Vaitupu	5
Delivery of deceased person Nanumaga	1
Equipment drop-off Nukufetau	1
Passenger drop-off Vaitupu funeral	1
Total	17

6.3 Tala Moana

The Tala Moana became the second vessel to be managed by the fisheries department after its arrival in the country late in 2015. Tala Moana is a second-hand boat purchased under the NAPA 2 project intended to carry to transport people and materials to the outer islands in line with the NAPA 2 priorities set out in project document. These priorities include fishery resource assessment and management, disaster risk management and governance.

The biggest trouble being that the vessel does not have funds to meet all its operational costs apart from crews' salaries. The need to create funds not only for vessel's operations but also for maintenance was inevitable. The TFD hence put forward two proposals to government - 1) vessel to operate under charter basis, and 2) the establishment of the vessel's revolving fund. Both proposals were approved.

To achieve efficiency and maximize usage of Tala Moana, the boat schedule for the whole year (2016) was prepared jointly by the TFD and the various components of NAPA 2 project. The schedule serves two purposes – firstly it enables the administrator to know exactly when to and when not to charter the boat to a third party, and secondly, it helps to better coordinate the need for the vessel between the different components of the NAPA 2 project. The boat schedule was also made available on-line via the department's website (tuvalufisheries.tv) and was done in way such that interested customers can book directly. This was proven useful although some improvements would still be required.

While it is still in the first year of operation, many challenges have emerged. These challenges range from staff turn-over, drinking water being dirty, equipment failures to mechanical breakdowns. Some of which are manageable but some are beyond our capacity. On her third last voyage, the windlass failed resulting in her port side anchor being deliberately cut loose for safety reasons. Unfortunately, retrieval attempts failed to locate the anchor as it was too deep. Also, inspection of her hull revealed that all zinc anodes, which provide protection to the hull from corrosiveness, are no more due to corrosion.

Given the many problems encountered and the limited capacity we faced, it is planned that the vessel be taken to Suva for proper maintenance early in 2017.

Table 6: List of trips executed by the Tala Moana in 2016

Charter category and purpose	Total
Official	21
Marine surveys and geotechnical investigations for Ports Project ADB	4
Post Reef Channel Project Assessment	2
NAPAll activities NAPA, TFD	4
Picnic OCO Custom at Funafala	1
Nukufetau visit TFD PROP	1
Collect / drop-off personnel Home Affairs, Lands	2
Operation Kurukuru TFD PROP	1
FAD monitoring TFD	1
Fishing expedition for KOFA officials OPM	1
Solar Project follow-up TEC	1
Consultations with communities SWAT	1
NAPA II consultation activities Nukufetau, Nanumaga, Nukulaelae NAPA	2
Private	3
Review of Island Strategic Plan (ISP) Nukulaelae	1
Research in Vaitupu	1
Expedition to Funafala UNDP	1
Total	24

6.4 Fish aggregating devices (FADs)

Concern over declining fish stocks in reef areas, the department of fisheries through its donor-supported near-shore Fish Aggregating Device (FAD) Program is now making effort to ensure the shift from inshore to near-shore fishing is real.

6.4.1 FAD training

In August, a FAD specialist and also master fisherman from the SPC conducted a week-long FAD training course. The training was geared to enable responsible, newly appointed fisheries officers to learn and gain the right skills and knowledge required for a successful FAD program. As part of the training, deployment of 2 near-shore FADs and 1 lagoon FAD in Funafuti waters was undertaken (Figure 15). Expenses for the attendance of the SPC's specialist was being met by the NAPA 2 project.



Figure 15: FAD training

With the training completed it is now envisioned that all future FAD deployments will be carried out by the trained TFD staff. However, how quickly deployment can be done will also depends on the availability of a good echo sounder. This is simply since the penetration power of existing ones was found (at the time of the training) to be limited to 300 meters only whereas most near-shore FADs are destined for depths exceeding 500 meters.

The department was being strongly advised to obtain an echo sounder whose penetration power can reach depths of up to 1,000 meters or more. Without which the chance of dropping the FAD in an unsuitable spot can be very high and consequences of this occurring can be undesirable. To avoid the situation the TFD will procure a portable unit in 2017, that can be carried on a small boat as in the left picture above.

6.4.2 FAD maintenance and sustainability

FAD maintenance is an ongoing activity with the fisheries department taking a very active role. As part of a joint partnership with the NAPA 2 Project, seven FADs were inspected and repaired in all the islands. Of all the islands, Nanumaga was the only island with 2 FADs still in place. The rest only have one FAD each.

In light of recent incidents of FAD vandalism, a review of the existing FAD MOU was seen as a necessary step. The review served as mechanism for the frank exchanging of views, and a means to foster cooperation among all parties within each island community to sustainably manage the FADs. The review is expected finalized next year when all islands have been consulted.

6.5 Fishermen training

6.5.1 Sea safety & Grab bags

Encouraging fishermen to commit to fishing, especially on FADs outside the reef, comes with the responsibility of caring for their safety while they are at sea. Fishing in Tuvalu is done from small, outboard-powered boats (5–7 m in total length), open type, no safety gears, and fishermen often pay less attention to their safety.

Therefore the TFD through the O&D division continued to place emphasis on the issue of sea safety. Various awareness outreach programs were undertaken in the form of radio talks, posters when available and stakeholder consultations. Funding from both the NAPA 2 and the PROP projects has enabled extension of sea safety training to the all islands. This year's sea safety training was quite special due to the availability of Grab bags. One grab bag contains all sea safety items (mirror, thermal blanket, GPS, Personal Locator Beacon, VHF radio, laser light, life jackets, sea anchor etc.) that one can use in time of an emergency (Figure 16). A total of 154 grab bag deliveries were made to the fishermen in most islands except Vaitupu. Usually, the distribution is accompanied by a (one and half day) training delivered by the department. The training is to familiarize the fishermen with each item and also to educate them on proper use and correct handling of every single item.



Figure 16: Contents of grab bags

The grab bags came from three different funding sources – the SPC (30), NAPA 2 project (82) and NZ (56) under its Cyclone Pam relief fund. The bags were evenly allocated among all the islands (16 bags per island), except for Niulakita with 2 bags and Funafuti with over 50 bags.

All the bags were presented by the team to the Kaupules for later delivery to the Fishermen association who will then distribute them to individual members. Discussions on roles of Kaupule and Fishermen in relation to usage and ownership of bags also took place.

Despite the large donation, there is large number of fishermen still without a bag. Overall, the current bag delivery covers about 44% of the current number of fishing vessels counted for the whole of Tuvalu.

Table 7: Grab bags distributed versus the number of fishing vessels by island

Island	Canoes		Boats			Tot. vessels	% Grab bags
	Aluminium	Wooden	Aluminium	Wooden	Fibreglass		
Nanumea	11	22	19	7	-	59	27
Nanumaga	16	15	19	-	-	50	32
Niutao	15	7	11	-	-	33	48
Nui	-	12	12	-	-	24	67
Vaitupu	2	10	21	12	2	47	34
Nukufetau	1	20	22	11	11	65	25
Funafuti	41	39	38	41	19	178	29
Nukulaelae	5	5	36	5	3	54	30
Niulakita	-	-	2	-	-	2	100
Total	91	130	180	76	35	512	
Average	10	14	20	8	4	57	44

With the introduction of VHF radios as part of safety package there is now a real need for the establishment of reliable onshore facilities at all islands to ensure calls for assistance in an emergency are received and responded to in a timely manner. The department is very keen to approach some existing fisheries projects for assistance.

6.6 Community Fisheries Training Centres

The NAPA 2 project through the TFD is providing fisheries training centres for all the islands except Funafuti and Niulakita. The design of the centre is now ready thanks to the help provided for by the Public Works Department (PWD) architects. The building is 8mx12m, open with only one room for storage and a ceramic tiled sink for fish processing.



Figure 17: 3D representation of the planned training centre buildings.

The locations of such a centre were still unknown so confirmation is required from each Kaupule before further work can be carried out. In addition, the site (once confirmed) needs to be assessed for early identification of potential risks that may prevent advancement of the project. Hence two staff from PWD's architectural division were among the consulting team from the Operation and Development division to visit all the islands, especially for the second purpose.

Vaitupu Island was deliberately left out of this year's mission due to its heavy commitment throughout most months to the annual general meeting of the EKT in November. The visit is anticipated to occur in either February or March, 2017.

For most islands the training centre would be erected within the area already leased by government for their CFCs. Vaitupu would be the only exception due to limited land space at its CFC. Construction of the centres is expected to start next year.

6.7 Purse seine crew training

The training is part of the department's effort to provide employment for the many unemployed Tuvaluan sea fearers due to the lack of work opportunities on foreign merchant ships following the global financial crisis in recent times. Through funds received from the NZ government, the Tuvalu Maritime Training Institute (TMTI) was upgraded (between 2014 and 2015) in order for it to be able to deliver the training.

By the end of 2015, four training courses were concluded with a total number of 80 sea fearers had been graduated from TMTI. The fund from NZ government allows for the running of at least ten courses. The department thus planned another additional four courses for implementation in 2016, but these were not ultimately carried out. All this is due to 1) zero recruitment happening for the trained 80 sea fearers, and 2) ongoing impasse within the PNA countries on enacting the crewing provision, a subject championed by Tuvalu through the TFD during its participation in PNA meetings and negotiations.

Getting recruitment going is key to the continuity and sustainability of the training at Amatuku. Until the impasse is broken and recruitment gets underway, no further training is expected in the immediate future.

6.8 Cyclone Pam relief funds

The O&D Section maintained its coordinating role over the cyclone Pam relief fund received from the government of NZ in 2014. The fund is strictly for the fisheries sector. In 2015, an assessment was undertaken to identify areas where assistance may be needed most. Completion of the study was achieved in 2016 due to heavy commitments faced by the section. Also in 2016, disbursement or release of funds was made in accordance with the recommendations of the assessment. However, there are still few disbursements still need to be made.

Table 8: Recommended relief activities for Cyclone Pam and their status*

Activities	Budget	Remarks / status
1. Restoring private property		
Kaupule boat at Nui	10,000 AUD	Cash transfer
Wooden canoes & boats	17,070 AUD	Cash transfer, all islands except Nukulaelae and Nukufetau
MIG welding machines x8	31,730 FJD	All islands except Vaitupu
Training on MIG welding	45,000 AUD	All islands except Vaitupu
2. Restoring public infrastructure		
CFCs	29,186.40 AUD	Cash transfer for 3 islands completed
FAD for Funafuti	5,000 AUD	Not begun
Vaitupu Harbour	50,000 AUD	Rejected by TFSP Steering Committee
3. Sea safety equipment for small boats		
Grab bags x 56	102,168 NZD	Distribution complete except Vaitupu
4. Provision of boat		
Boat suitable for gathering fish and for rescue x8	Balance of monies AUD	Not begun

* Islands excepted from certain activities in this table will be included in next year's work plan

6.9 Ice machine

The existing ice maker donated by the OFCF is still in excellent conditions and is responsible for generating a total revenue of \$19,734.10 to the department. Ice is used for many different purposes, and is being sold to any customers at various prices depending on size of bucket. The highest price is \$3.50 a bucket, the size of an FMF biscuit crackers bucket.

Also ice cubes were supplied to participating fishermen at last year's fishing competitions at no cost. These fishing competitions were fund raising activities organized and funded by the fishermen association. Only registered members are permitted to take part. The free supply of ice is purely a token to show the TFD's keen support to the development of the association. Furthermore it is also a way to promote the use of ice for fishing.

In terms of repair and maintenance, major maintenance works to the ice maker were carried in the first three weeks of January. Maintenance works were done by own mechanical staff.

6.10 Fisheries Mechanical Workshop

The fisheries workshop continued to perform mechanical repair and maintenance services through which a sum of \$1,682 in revenues was generated. This is mainly from the hire of the crane truck and motorbikes repair.

The lack of man power remained a challenge, especially following the retirement of the mechanical foreman in May. Since then the workshop was manned by one person only. However, this did not stop the lone mechanist from attending to other important tasks when required. In June, the mechan-

ic travelled to the Northern islands as an assistant welder to assist with the training of fishermen in all islands specifically on aluminium welding.

The filling of the vacancy currently exist within the workshop is a priority for next year.

7 Donor funding and projects

7.1 General

Over the past years, Tuvalu has benefitted from the generous support of donor agencies including New Zealand, UNDP, EU, Japan, Taiwan and many other organizations and countries. In 2011, a number of projects were progressing which are the food security project funded by FAO, a milkfish farm funded by Taiwan and the Foram Sand Project funded by JICA. These projects ended in 2014, the aquaculture related projects were handed over to the Government of Tuvalu through Fisheries with no exit plan, and with no funds support, the Department decided to close down these facilities. In 2012, the Fisheries Department received funding assistance from New Zealand which to finance an Institutional Strengthening Program (ISP) for the Department, a Fisheries brand new building and a four years funding to support its program activities.

There are numbers of funding supports received and will be received in the following years. These projects and programmes are fully integrated into the TFD work programme and support many of the activities already described in earlier sections of this report.

7.2 NZ Tuvalu Fisheries Support Programme (TFSP)

The TFSP commenced in July 2014 and supports the TFD through three major elements:

- Provision of technical assistance to the TFD through assignment of a Lead Advisor and an Inshore Fisheries Advisor.
- Construction of a new office building, originally expected to be completed in 2015, but now scheduled for late 2016;
- A Grant Financing Agreement (GFA), initially for NZ\$1.036 million over a 5-year period.

The first two activities are managed directly by NZ MFAT, while the GFA is managed by the TFD, under the guidance of an Advisory Committee (AC) which includes representatives of project stakeholders.

After the damage to the Outer Islands caused by cyclone Pam in March 2015, the NZ Government agreed to support post-cyclone rehabilitation in the fisheries sector, with funds to be channelled through the TFSP. A letter of variation to the GFA was signed on 3rd June 2015, adding a further NZ\$372,000 for this purpose, increasing the total project budget to NZ\$1,408,800.

7.3 World Bank Pacific Regional Oceanscape Programme (PROP)

The Pacific Regional Oceanscape Programme (PROP) is a multi-country programme which supports economic development through better fisheries management in four countries initially: Solomon Islands, Federated States of Micronesia, Marshall Islands and Tuvalu. Other Pacific Island Countries that are members of the World Bank are expected to join the programme in due course. There is also a regional component of the programme, being managed by FFA and involving the PNA office, SPC and PIFS.

The Tuvalu Component of the PROP was declared effective on 9th June 2015. Over the next 6 years the PROP will provide additional support to the TFD to complement that being made available under the TFSP, and will also support Tuvalu agencies, in particular the Maritime Police. The TFSP Advisory Committee will be expanded in future to provide guidance to the PROP.

Most of the programme is funded under an IDA grant. This is complemented by a GEF grant of \$1million specifically for conservation of the Funafuti lagoon.

7.4 UN/GEF National Adaptation Programme of Action (NAPA II)

Tuvalu's National Adaptation Programme of Action (NAPA) II project seeks to provide "Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity." Funded by the United National Development Programme (UNDP) and the Global Environment Facility (GEF), NAPA II focuses on implementing three priorities outlined in Tuvalu's NAPA, on building resilience to climate change (i) in marine-based livelihoods, by (ii) improving access to disaster early warning systems for people on outer islands and (iii) through integrating climate change concerns into outer Island Strategic Plans and building capacities of outer island administrations.

The Coastal Fisheries Section has two NAPA II officers specifically recruited to implement the fisheries components of the project. These officers, recruited this year are expected to work with the Fisheries Department through to 2018. Their work will focus on surveys, marine managed areas, training workshops, traditional fishing methods, FADs, modernized canoe-building and seafood processing, all designed to increase food security and resilience of outer island communities.

7.5 UN/GEF Ridge to Reef Project (R2R)

The GEF Pacific Ridge to Reef Programme seeks to maintain and enhance ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal resource management. The purpose of focusing on these areas is to effect poverty reduction, sustainable livelihoods and climate resilience for the people of the Pacific. In Tuvalu, the R2R project is focused on water and sanitation. In Funafuti, the estimated demand for freshwater is close to the estimated sustainable freshwater yield and poorly treated wastewater is discharged to groundwater and excess sludge is simply removed to pits .

Although the programme is headed by the Environment Department, the Fisheries Department can be expected to become involved in R2R in future years where water and sanitation cut across ecosystem quality and fisheries production.

8 Issues and challenges

8.1 Inadequate office facilities

TFD staff are currently scattered among 6 separate office building which impedes the proper functioning of the Department, prevents effective communications and personnel management, and has a negative effect on staff morale. The delay of the construction of the new building really does not help with the situation that the department is currently facing.

8.2 Low recurrent budget allocations

The 2016 recurrent budget allocation was too low for an effective Fisheries Department (see Anexe 9.1 on page 32). The Department cannot rely on its recurrent budget to implement its activities, since 77% of the allocated budget of AUD 749,703 was for staff salary, and only 23% for operations. If this is continued in the future, the Department will not be able to meet its assigned goals under Te Kakeega III, other government planning documents and regional and international obligations (e.g. Sustainable Development Goal (SDG) 14 on Oceans).

8.3 Compliance issues and the European Union (EU) “yellow card”

It has been 3 years now since Tuvalu was issued a yellow card by the EU. Since then, Tuvalu with the assistance from FFA and PNA worked closely to address some of the issues and shortfalls identified by EU in their assessment in 2014. An Action Plan was provided with eleven actions that Tuvalu should undertake in order to rectify the shortcomings identified by the Commission. Since 2014, actions took place were the revision of the national plan of action (NPOA) against IUU, revision of the National Tuna Management Plan and other related matters.

9 Annexes

9.1 Recurrent budget for fisheries in 2016

Code	Title	2016 Budget
711110-I03-01	Salaries	131,385
711120-I03-01	Allowances	9,616
719100-I03-01	TNPF	12,650
721100-I03-01	Overseas Travel & Subsistence	10,000
721110-I03-01	Leave Travel Entitlements	10,957
721300-I03-01	Telecom & Internet	2,400
722250-I03-01	Equipment Maintenance	300
722500-I03-01	Vehicle Maintenance	500
723320-I03-01	Petrol & Oil	1,500
723510-I03-01	Office Expenses	1,576
723540-I03-01	Office Stationery	900
723910-I03-01	Electricity	29,040
01 Total		210,824
711110-I03-02	Salaries	140,509
711120-I03-02	Allowances	21,561
712900-I03-02	Relieving Staff	13,059
719100-I03-02	TNPF	15,875
721300-I03-02	Telecom & Internet	2,650
722250-I03-02	Equipment Maintenance	24,031
722550-I03-02	Manau Maintenance	5,378
723210-I03-02	Manau Provision	5,200
723330-I03-02	Manau Fuel & Oil Operation	15,000
723460-I03-02	Workshop Expenses	4,000
72346A-I03-02	Workshop Maintenance	1,000
723620-I03-02	Slipway Maintenance	2,170
726030-I03-02	Safety Gear	546
729090-I03-02	CFC Monitoring Cost	4,040
729990-I03-02	Vehicle Maintenance	1,000
782230-I03-02	CFC Operation & Working Capital	2,000
782300-I03-02	Support to FTFT	5,000
02 Total		263,020
711110-I03-03	Salaries	90,728
711120-I03-03	Allowances	7,944
719100-I03-03	TNPF	9,636
721120-I03-03	Communication & Transport	6,267
722250-I03-03	Boat Maintenance	4,544
722251-I03-03	Dive Equipment Maintenance & Services	9,898
723830-I03-03	CFP Monitoring Programme	879
729990-I03-03	Community Based Management Programme(O/ island)	1,304
782400-I03-03	Support to Funafuti Conservation Area	106

Code	Title	2016 Budget
782710-I03-03	Creel Surveys	434
791220-I03-03	Office Equipment	3,000
791350-I03-03	FADs Programmes	674
03 Total		135,414
711110-I03-04	Salaries	106,594
711120-I03-04	Allowances	7,069
719100-I03-04	TNPF	10,804
721300-I03-04	Internet Connection	9,630
722250-I03-04	Equipment Maintenance(VSAT Dish)	343
723021-I03-04	Vessel Sighting Public Awareness Programme	3,780
723810-I03-04	VMS Support Service	520
723820-I03-04	Dockside Boarding	884
723830-I03-04	Observer Refresher & De-briefer Course	822
04 Total		140,446
Grand Total		749,703

9.2 Participation in meetings and workshops

Meeting/Training	Location	Travel Date	Staff	Sponsors
Administration of fisheries				
Special US Treaty Meeting	Nadi, Fiji			
Japan Promotional Fund Committee Meeting	Honiara	04/02–18/02		FFA
2 nd Meeting the Treaty – Small Working Group	Nadi, Fiji	15/03–22/03		FFA
35 th Annual Official Meeting of the PNA	Tarawa, Kiribati	31/03–12/07		PDF
FFC 98 th Meeting	Port Villa, Vanuatu	28/04–17/05	Mr Samasoni Finikaso (DOF)	
Bilateral Negotiation KOFA		18/06–23/06		FFA
Special PNA Official Meeting		28/06–09/07		PNA
FFA Ministerial Meeting				PDF, FFC
Annual Board of Director Meeting of the FTFC Corporation	Suva, Fiji	30/07–04/09		JV Company
TTFH Board of Directors Meeting	Kaoshiung, Taiwan	06/09–09/09		TTFH
TTC Meeting	Pohnpei, FSM	13/09–29/09		WCPFC, PROP
Head of Fisheries Meeting	Tokyo, Japan	28/01–07/02		OFCF, Japan Government
2 nd Meeting the Treaty – Small Working Group		15/03–22/03		FFA
Multilateral US Treaty Meeting SPIP26 and RS17	Nadi, Fiji	21/04–03/05	Ms Fulitua Tealei	FFA PDF
Tokelau Treaty		07/06–11/06		FFA
US Treaty Meeting	New Zealand	16/06–28/06		
PNA Ministerial Annual Session	Christmas Is, Kiribati	19/07–30/07		FFA PDF
FFA and PNA Pre Meeting	Nadi, Fiji	05/12–09/12		PROP
Island Strategic Plan	Nui Island	07/06–19/06	Mr Pugameau Taufilo	Nui SDE
Negotiation with the Taiwanese Fishing Company	Suva, Fiji	23/07–38/07		Tuvalu PDF
PIMRIS Steering Committee	Suva, Fiji	04/10–07/10	Ms Matelina Stuart	PIMRIS
Oceanic fisheries				
Bilateral Negotiations with KOFA	Suva Fiji	23/06–23/06		FFA
Bilateral Negotiations with the Taiwan Purse Seine Fisheries		23/07–28/07		FFA PDF
WCPFC 12 th Technical Compliance Committee Meeting	Pohnpei, FSM	13/09–29/09	Mr Solomua Ionatana (PFO)	PDF, FFA
WCPFC 13 th Annual Meeting	Nadi, Fiji	28/11–02/12		PROP
FFA and PNA Pre Meeting		05/12–09/12		FFA
VMS Training Workshop	Suva, Fiji	21/04–03/05		PEW Foundation
Fisheries Management System (FIMS)	Nadi, Fiji	02/06–09/06		PROP, PNA
Global Fisheries Enforcement Training				
19 th MCSWG Workshop	Auckland, New Zealand	8/03–12/04	Mr Penihulo Lopati (SFO-MCS)	
2 nd Regional Information Management System Workshop				
PNA Meeting	Tarawa, Kiribati			

Meeting/Training	Location	Travel Date	Staff	Sponsors
TTC Meeting	Pohnpei, FSM	16/09–30/09		FAO
5 th VDS Technical Officers Workshop	Nadi, Fiji	28/01–09/02	Mr Saifoloi Talesi	PNA
LTA at RFSC, FFA	Honiara, Solomon Islands	02/06–05/07		IFD, ADF
Tuna Data Workshop	Noumea, New Caledonia	21/04–03/05		SPC
LL VDS	Munda, Solomon Is	11/06–21/06	Ms Siouala Malua	PNA
Stock Assessment	Noumea, New Caledonia	02/07–12/07		PROP
Scientific Committee Meeting	Bali Indonesia	26/07–16/08		WCPFC
10 th Tuna Data Workshop	SPC/CPS, Noumea	21/04–03/05		PROP
Stock Assessment Workshop		02/07–12/07	Mr Scott Pelesala	SPC
12 th Regular Scientific Committee Meeting	Bali, Indonesia	26/07–16/08		WB PROP
Awareness Workshop on Vessel Sightings	Nukufetau Is	26/02–29/02	Mr Sam Pedro	Tuvalu Gov
Shiprider	New Zealand	18/06–26/06		NZ Government
Regional RIMF Training Event	Suva, Fiji	14/11–18/11		FFA
Debriefer Assessors Training	Honiara, Solomon Is	02/06–25/06	Mr Onosai Takataka	FFA
National Fisheries Officer Course (AMC)	Australia	24/10–25/11	Mr Sakalia Apinelu	Australia Defence Force
Coastal Fisheries				
SPREP – Sustainable Ocean Management	Apia, Samoa	31/10–4/11	Ms Moeo Finauga	SPREP/CBD
FAD Workshop	Santo, Vanuatu	16/06–05/07	Ms Lotokufaki P Kaitu	SPC
International Coral Reef Management Training Course	Townsville, Australia	15/10–01/11		DFAT
Oceania Regional Environment Security Forum	Nadi, Fiji	19/05–31/05	Mr Manua Taufilo	USPACOM
Oil Spilling Response Training Workshop		07/04–13/04		USA DAS
Operations & Development				
NC meeting/FFA/Japan Consultation	Fukuoka, Japan	25/08–06/09	Mr Tupulaga Poulasi (PFO)	Japan Govt/ OFCF
Sustainable Ocean Initiative Workshop	Apia, Samoa	31/10–04/11		Pacific Island Forum Secretarial
SPC Practical Safety Fishing and Financial Management	Pohnpei, FSM	03/10–29/10	Mr Viliamu Petaia	FAO

9.3 Radio awareness programming for 2016

Date	Section	Topic	Summary
25 th January	Coastal	Happenings within the Coastal division	Facilitator: Semese, Moeo & Lotokufaki The group introduced and shared to the public the main roles and activities of the Coastal Section and other related work activities.
11 th February	Coastal	Ciguatera	The Coastal team represented by Paeniu and Filipo discuss in this radio program all the necessary information that the general public should know about Ciguatera Fish Poisoning. Topics discussed include: What is CFP and causes it? What is known today CFP? Symptoms and cure of CFP? How to report and deal with CFP? Cases. . What is Fisheries involvement in dealing with CFP?
10th March	Operation & Development	FAD's	Facilitator: Viliamu & Leopold Explain and apprise the general public on information about FAD's
24 th March	Coastal	Funafuti Issues	Facilitator: Coastal Funafuti Team and Funafuti Kaupule
14 th April	Coastal	Climate Change & Fisheries	Facilitator: Lale, Niko, Paeniu, Maani The group discuss Fisheries issues in relation to the impacts of CC from a regional, national and community level and ways to adapt to these changes. Representation from the MET office discussed the effects of EL NINO and LA NINA on Fisheries.
28 th April	O&D	Sea Safety	Facilitator: Viliamu, Maani, Leopold Shared to the general public about sea safety
5 th May	Administration	Existence of the Fisheries Library	The fisheries library contains a variety of information related to the Tuvalu fisheries, in hard copies as well as in soft copies. Ministry, division, departmental reports or publications are deposited for safekeeping or storage. These publications or reports include, annual reports, research or field reports, consultancy reports, newsletter, etc. The fisheries library is specialise only to serve staffs of the fisheries and also available to the general public as well.
12 th May	Coastal (Repeated Program)	Happenings within the Coastal division	Facilitator: Semese, Moeo & Kufaki The group introduced and shared to the public the main roles and activities of the Coastal Section and other related work activities.
26 th May	Operation & Development (Repeated Program)	FAD's	Facilitator: Viliamu & Leopold Explain and apprise the general public on information about FAD's
2 nd June	Administration	What happenings in the Fisheries Department	Facilitator: Matelina Update the general public on fisheries activities mainly the administration activities
9 th June	Coastal (Repeated Program)	Climate Change & Fisheries	Facilitator: Lale, Niko, Paeniu, Maani The group discuss Fisheries issues in relation to the impacts of CC from a regional, national and community level and ways to adapt to these changes. Representation from the MET office discussed the effects of EL NINO and LA NINA on Fisheries.

Date	Section	Topic	Summary
23 rd June	O&D (Repeated Program)	Sea Safety	Facilitator: Viliamu, Maani, Leopold
7 th July	Coastal (Repeated Program)	Ciguatera	The Coastal team represented by Paeniu and Filipo discuss in this radio program all the necessary information that the general public should know about Ciguatera Fish Poisoning. Topics discussed include: What is CFP and causes it? What is known today CFP? Symptoms and cure of CFP? How to report and deal with CFP? Cases. . What is Fisheries involvement in dealing with CFP?
21 st July	Coastal/O&D	Updates on the 1 st metronome trip to the Northern islands of Tuvalu	Facilitator: Tupulaga, Semese, Lale, Viliamu Update the general public on the 1st metronome trip to the northern islands, activities they involved with each island Kaupule and especially fishermen.
28 th July	Coastal	Artisanal Tuna data collector	Facilitator: Lotokufaki, Manua, Maani and Foe The group discuss all necessary information about artisanal tuna and why they collect data and the importance of data collected.
15 th September	Administration	Updates from the Admin. Section	Facilitator: Matelina. What happenings in the Fisheries – Fisheries New building:
10 th November	Administration/ Coastal	Updates from the Admin & Coastal section	Facilitator: Lotokufaki & Matelina. Kufaki discussed about the purpose of the training that she attend and share what she learned from that training while Matelina discuss the meeting and training she went to and also share to the public what she did learned from the meeting and training.

