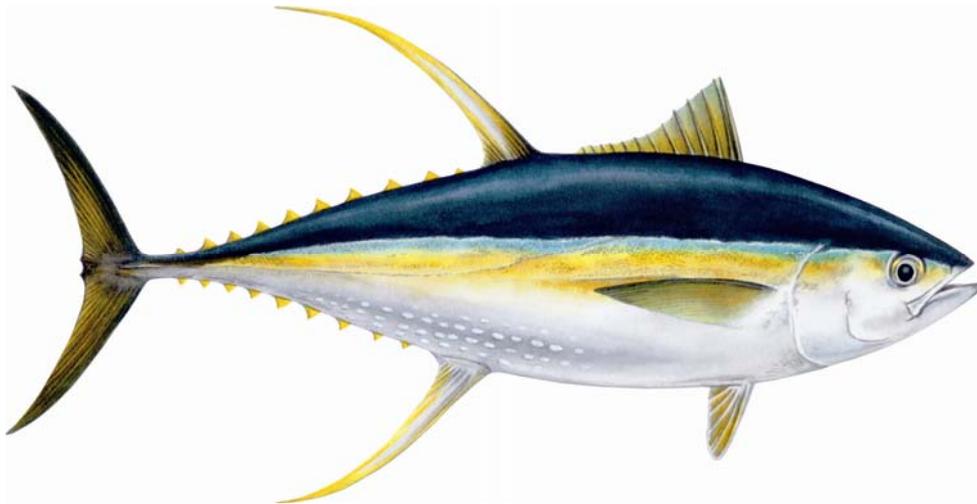


FISHERIES DIVISION

ANNUAL REPORT

July 2005 - June 2006



**FISHERIES DIVISION
MINISTRY OF AGRICULTURE AND FISHERIES**

Apia

August, 2006

1. MISSION STATEMENT

Once again, the Fisheries Division is committed to the strategic Vision, Goal and Objectives as identified in the Strategies for the Development of Samoa (SDS) 2005-2008 and the Ministry's Corporate Plan (2005-2007) goal of "Growing a Healthy and Wealthy Samoa". Below is the strategic mission statement for the Fisheries Division as:

"Promotes the optimum and ecologically sustainable use of the country's fishery resources and the development of suitable alternatives to harvesting depleted resources in order to maximize benefits to Samoa".

2. OVERVIEW

During the 2005/2006 fiscal year, the Fisheries Division has continually delivered relevant and required services to stakeholders in supporting viable fisheries development opportunities and promoting the sustainable management of fisheries resources. The following highlights the major results achieved by the Division through the implementation of activities stated in its 2005-06 Annual Management plan.

1.1 Inshore Fisheries Services

- **Fishery annual landing statistics:** Fisheries statistics were continually collected on a random basis throughout the year. Total volume of inshore fishery products landed and sold via domestic markets and outlets was estimated to be 114.9mt and valued at approximately 1.5 million tala. There were four main groups sold domestically for the year 2005-2006, of which fin-fish accounted for 63% of the total volume (by weight). The major dominant finfish species were the *Acanthuridae*: unicornfish and surgeonfish represented 37%, *Scaridae*: parrotfish 13%, *Carangidae*: trevallies 10% and *Mugillidae* – mullet accounted for 10% of the total finfish weight. On average, finfish was traded at \$8/kg, crustacean at \$28/kg, processed seafood at \$32/kg and other fishery items at \$12/kg respectively.
- **Resources monitoring:** A total of 10 Community-owned fish reserves have been re-surveyed. The status, adverse impacts and health of substrates such as coral reefs, sea grasses, etc and fish and invertebrate abundance were monitored and assessed. Similarly, 2 new fish reserves at Vaiusu and Sapini Faga were initially assessed before establishing.

The quarterly assessment for the introduced trochus (*Trochus niloticus*) was carried out at four sites; Papa-Puleia, Saluaofata, Saleapaga and Vaisala, where trochus bivalves were stocked with assistance provided by ACIAR. Juvenile trochus were noted at Saoluafata site, indicating the bivalve is naturally established.

- **Scientific applied research projects:** Research was conducted by the Inshore Division in four arenas over the course of the 05-06 year. Three of the inshore projects are ongoing:

(a) Monitoring and Evaluation of Community-base fish reserves. Seven villages (Vaisala, Papa-Puleia, Luua-Faga and Foailalo in Savaii; Vavau, Tafatafa, and Savaia in Upolu) have been selected for this project. Selected capable villagers were trained on the simplified monitoring and reporting methodologies with assessment exercises conducted by village members and the Fisheries staff. Of the eleven main activities and objectives of the project, eight have been achieved so far over the last 18 months.

(b) Managing inshore spawning fish species, aggregating sites and spawning grounds: Ten key inshore fish and invertebrate species were selected and their gonads sampled to determine spawning periods. Traditional management knowledge and understanding of critical spawning and aggregating areas was also gathered from interviews with village fishers and then analysed. Observations for grouper spawning behaviour and sites have been completed. The remaining activities of the project are as follows: a) Determining Gonosomatic Index (GSI) and Histological Index (HIS) b) Continue research on selected spawning sites, c) Information Production on spawning time and site and d) Awareness program.

(c) *Fish & Shellfish Poisoning Project:* The project has yet to begin the sampling component; however, the collection of anecdotal and traditional information has been completed, as has the gathering of information through a literature search.

(d) *Detailed Reef Assessment:* An EU funded PROC-Fish project, implemented by the Reef Fisheries Observatory of the Secretariat of Pacific Community (SPC) together with Fisheries staff. This project included detailed surveys in 4 selected locations in Samoa on the biodiversity status of these coastal areas. These survey assessments were conducted from August to October 2005. Samoa is one of 17 countries to have their fisheries resources assessed under this project. The project hopes to provide scientifically sound information that will help Pacific Island countries to address the problems of managing reef fisheries. PROC-Fish/SPC will assist Pacific Island fishery managers (government and community) with assistance in the critical area of rigorous, comparable information concerning the status of reef fisheries as a basis for developing reef fishery management measures.

The assessment included underwater observations at reef flats, reef slopes and back reefs, as well as a socio-economic survey that was carried out in targeted coastal villages.

(e) *Sea cucumber fishery status assessment:* In 2005, SPC's PROCFish study (and the Uppsala University extension) worked in collaboration with Samoan Fisheries to upgrade the understating of the status of coastal resources, with a snapshot study of sea ('Sea') cucumbers and the artisanal fishery. The sea cucumber stocks of Samoa were surveyed using fisher's dependent and independent information. Information on sea cucumber availability was collected on a number of scales (spatial) at 10 sites in Samoa, to better fit the heterogeneous distribution of sea cucumbers and to more accurately assess availability of commercially important species.

A total of eleven species of sea cucumber of commercial importance were recorded. High value sea cucumber species were found in low densities and there was a general paucity of medium value species available for the development of export opportunities. There is a possibility to initiate commercial fishing of the mid value sea cucumber, greenfish, *Stichopus chloronotus*, it should be approached cautiously. The low value loli fish, *Holothuria atra* can also be considered as a potential species for export. In this case densities recorded were high and the low value of this species generally acts as surrogate control of the fishery. Catches of the two main species, *Stichopus horrens*, and *Bohadschis vitensis* were found to be 'fully utilized', with the majority of fishers detecting a negative trend in catch/availability within their lagoons. Due to the scale and condition of the artisanal fishery, any overlap with a potential export fishery should be avoided at this time, and continued active management with communities is needed to ensure sustainability of the resource.

1.1 Offshore Fisheries Services

- **Tuna Fisheries:** Tuna export remains as one of the top foreign earners for Samoa's economy. 2,075.3 metric tons of Tuna were landed during the period with 1,099 metric tonnes (73%) exported, earning an estimated SAT\$11.6 million. The remaining 27% was consumed locally. Of the total exports, 87% was exported as frozen and 13% as fresh chilled products. A gradual improvement in catch rates was observed starting from May 2005 compared to the past three years. June was the peak month in 2005 with a catch rate of around 90 kg/100 hooks for all species caught. Albacore which is the targeted species, accounted for around 76% of the total tuna longline catch in 2005.

- **Research Activities:**

- (a) *Albacore Tagging Programme:* The poor catch rate affecting the tuna industry has had a negative impact on the Albacore Tagging Programme. Only 8 live albacores were tagged from the total of 10 fishing trips.

- (b) *Cetacean Interaction with Longlines:* Local fisherman continued to report Cetaceans as a threat to catch rates in the long line fishing industry. A research project is currently being undertaken to determine the degree of the problem as well as how best to address the issue.

- (c) *Bottom Fish Resource Assessment:* This research project aims to assess the present status of Samoa's bottom fish resources. Three fishing trips were completed to one of the five identified sites. The assessment will continue for the next two years.

▪ **Tuna Management and Development Plan (TMDP)- Key Projects Implemented:** To strengthen the growth of tuna long line commercial fisheries, several strategic development projects have been identified in the TMDP to be completed within the next 5 years. The projects include onshore facility improvement, increasing fish quality, strengthening fisheries management, and capacity enhancement for the Fisheries Division. These activities will maximize the economic benefits of tuna harvest while maintaining sustainability.

(a) *Apia wharf extension and renovation of related facilities:* A major infrastructures improvement project to support the growth of the commercial fisheries began in March 2006. The project includes an additional new wharf jetty and renovations to the Apia fish market and Fisheries Administration building. The project was funded by the Government of Japan and completed in December 2006.

(b) *Ice making machine:* Two ice machine motors have been procured for the purpose of installation of ice making machine facilities to improve the quality of fish and seafood products earmarked for domestic and export markets. The availability of an ice machine will support and revitalise the rural alia fishery. Assembly of the Salelologa ice machine is near completion and construction is expected to be carried out early in the next financial year

(c) *Fish Aggregating Devices (FADs):* One device was deployed this year and five more units are proposed in the next financial year's budget. Altogether, a total of five (5) FADs are presently anchored offshore to aid local fishers by improving catches and strengthening the rural alia fisheries.

(d) *Observer Programme:* The successful completion of a regional observer course held in Apia in August 2005 saw the establishment of Samoa's National Observer Programme. Five local participants completed the course and one trip on a local fishing vessel was also conducted. The programme hopes to strengthen fisheries management as well as compliance with regulations by focusing on the monitoring and verification of by-catch, fishing catch and effort data submitted by fishing vessels.

(e) *Fisheries Legislative Review:* The Forum Fisheries Agency (FFA) agreed to carry out the review and the first consultancy assignment has been completed

(f) *Small Scale Tuna-Jerky Processing:* Successful trials on this tuna product have been conducted. Tuna-Jerky was promoted during the annual Agriculture and Fisheries Show in October 2005.

▪ **Seafood Safety:** Regular audits have been carried out to ensure the full compliance of the export agencies with quality and safety standards. Seafood safety consultants hired under the FFA Dev Fish Project completed a review of Samoa's Seafood Standard to prepare for inclusion in the European Market.

▪ **Sea Safety and Communication Network:** This program was promoted during the annual Agriculture and Fisheries Show in October 2005. A proposal for a two-year safety strengthening programme has been submitted to the FAO for funding.

▪ **Commercial Fisheries Advisory Committee Meetings:**

(a) *Commercial Fisheries Advisory Committee (CF-MAC):* The CF-MAC met three times this year. At the meetings the committee discussed fishermen loan interest relief for one year, the review of fishing licenses, and improving of the onshore infrastructure.

(b) *Monitoring Surveillance and Safety Committee (MSSC):* This committee convened three times this year, and discussed the strategic plan for enforcement and an awareness campaign for safety.

1.2 Aquaculture Fisheries Services

▪ **Aquaculture Development Plan:** The Aquaculture Development Plan has been formulated and drafted after extensive consultation with relevant stakeholders, technical personnel and Fisheries Division. The ADP plan is a strategic direction for aquaculture development in the next 5 years linked

primarily to the current SDS. The plan concentrated on strategies and economics for the development of 10 key marine and freshwater fin-fish, bivalve and seaweed species.

- **Giant Clam Lagoon Monitoring:** Village(s) owned and maintained lagoon nurseries where several species of giant clams (faisua) were cultured predominantly for the purpose of stock enhancement and this effort continued to show mixed results. During the period, currently, 17 communities have giant clams remaining in their nursery for grow-out. The declining survival rate of faisua was due largely to poor maintenance, theft, and natural predators. Overall, the average growth rate of giant clam species combined is 4.8 cm/year.
- **Giant Clam Hatchery:** A total of 100 giant clam broodstocks were purchased from Tonga for propagation and spawning purposes with financial assistance from FAO. Importing of new broodstocks hoped to improve the genetic composition of existing stocks. However, giant clam spawning was put on hold due to the Toloa hatchery closure and relocation. The Toloa hatchery site was earmarked for tourism development and is being relocated.
- **Tilapia:** Fish farms at Mosula in Satupaitea, Salani Falealili, and at Afulilo reservoir and as well as the demonstration farm at Chanel College were stocked with 2,800 tilapia (*Oreochromis niloticus*) fingerlings. A partial harvest of the tilapia fish pond at Faleapuna produced 52 adult fish, which were sold at the fish market at \$5.00/kg. Similarly, two partial harvests were carried out for Chanel College tilapia pond. The fish obtained were trialled for live sales at the local fish market, which produced an estimated SAT\$480.00. One of the major bottlenecks to tilapia farming at the moment is the unavailability of low cost formulated feed. The Fisheries Division still awaits the arrival of the tilapia pellet machine that will aid the manufacturing of feeds from locally available ingredients.

Moreover, the EFKS Faleseela Youth group has received a major financial grant from UNDP to commence a commercial tilapia farming project. The Division will assist the project by providing tilapia fingerlings and the technical know-how for the maintenance and management of the farm.

- **Sea urchin:** No spawning for the sea urchin *Tripneustes gratilla* occurred as all spawning activities at the Toloa hatchery were on hold due to the hatchery relocation. Diatom production in the algal laboratory discontinued in March 2006 as the condition of the algal room was too poor to maintain any stocks.
- **Research projects:**
 - (a) **ACIAR/FD Trochus Replenishment:** The ACIAR funded Regional Trochus Replenishment Project has been extended for another two years in order to stock more trochus at selected sites and determine whether the mollusc is established.
 - (b) **Tilapia Hatchery Propagation:** The SPC supported tilapia project on hatchery propagation successfully produced an estimated 8,000 tilapia fingerlings. However, 50% of all tilapia broodstocks and fingerlings died due to a low amount of dissolved oxygen in the water.

1.3 Village Fisheries Advisory Services

- **Village Fisheries Management Plan (VFMP):** Three new villages (Tafagamanu, Vaiusu and Sapini) have approved VFMPs. During the facilitation process, local communities were encouraged to identify problems, determine solutions and propose possible actions that would lead to the sustainable management of the fisheries resources under their jurisdiction. Undertakings to be implemented by villages and technical support provided by the Division are highlighted in the approved VFMPs. Village members were also selected to the Fisheries Management Committee (FMC) to oversee the undertakings listed in the management plans. Two other villages, Lotofaga Aleipata and Salamumu have expressed interest in the program. Also, Satuiatua, a village in Savaii also requested the program but then decided to decline due to other village commitments. To date, there are 85 villages with approved management plans and approximately 36% of those villages are inactive due to a variety of reasons.
- **Village By-laws:** Three villages developed and approved new fisheries by-laws. Thirteen other existing approved by-laws have been reviewed with several changes and recommendations from village communities. All of these were forwarded to the Office of the Attorney General for further legal advice and endorsement.

- **Six monthly review of management plans:** A total of 27 six monthly reviews (22 in Savaii and 5 Upolu) have been achieved within this period. A quantitative questionnaire and interview methodologies were used to assess undertakings and the effectiveness of the management plan as well as the performance of the fisheries management committee. The process continues every six months after the approval of the management plan.

- **Information Dissemination:** Fisheries Information sheets No. 1, (Community-based Fisheries Management Programme) No. 2, (Destructive Fishing Methods) and No. 3 (Fish Reserves) have been reviewed to provide stakeholders with updated information on fisheries development, management tools and marine conservation issues. A brochure on bech-de-mer species was produced to assist fishermen and the general public in identifying local species and their distribution in our waters. Three issues of the Fisheries Quarterly Newsletter were also produced and distributed to interest groups and stakeholders, mainly village communities under the Community-based Fisheries Management Program.

Four issues of the Fisheries Quarterly Newsletter containing relevant information and advice on sustainable fisheries development and management were produced and disseminated. The newsletter informs stakeholders on major fisheries developments as well as advising them on important activities to promote sustainable fisheries management and conservation.

- **Village Fish Reserves:** The coordinates of 5 Fish Reserves (Samatau, Saoluafata, Vaisala, Fatuvalu and Fagaae) were collected and recorded using the Global Positioning System (GPS) device. The newly acquired coordinates are added together with other reserves and used for mapping coastal areas that are reserved as sanctuary for marine species. Altogether, a total area of 25 existing fish reserves already determined is estimated at 5000km². The village of Vaisala on Savaii has the largest fish reserve area of approximately 640 km². Samoa is not well endowed with vast lagoons and coral reefs with reefs and lagoons encompassing the inhabited islands of Samoa estimated as about 23,100 ha for depth less than 50 m (Johannes 1982). Overall, a total of 5,000,000 m² of the inshore area (reef and lagoon) is now protected as sanctuary refuges for marine species and this represents about 2% of the total inshore coastal area to the depth of 50m depth.

- **Socio economic survey:** The survey was designed to evaluate the status of the community-based fisheries management program as well as the social impact on fish reserves. The survey was conducted at 26 villages with and without fish reserves in Upolu and 23 villages in Savaii. The total surveyed households represented 20% of the total households in Samoa. The study was conducted in Upolu for over a 7 weeks period (Jan- Mar) surveying a total of 591 households. Results indicated that an average seafood consumption rate is 60.5 kg/capita/yr; and the total seafood consumed annually is 7,900 mt that worth about \$63 million tala. This survey will be conducted also in Savaii within the next fiscal year.

- **Tonga Fisheries project visit to Samoa:** Fisheries Division conducted consultative meetings with a group from Tonga to discuss the effectiveness of the community-based fisheries management program in Samoa. The Tongan group came to observe and learn from Samoa's experience in community-based fisheries management and the extension facilitation process.

1.4 Regulations and Enforcement Services

- **Licensed Fishing Vessels:** A total of forty two (42) fishing vessels were licensed during the year which accounted for 75% of the total fishing fleet. Of the total licensed fleet, classes A, B and C represented 50%, 5% and 10% respectively. The vessels in classes D and E accounted for 35% of the overall licensed fishing vessels. The licensing period is now changed and standardised with the expiry date being the 31st August annually.

- **Boarding Inspections:** A total of 15 boarding inspections were conducted for foreign licensed but locally based fishing vessels. The vessels are licensed to fish in other countries but based in Apia. During the inspection process, the vessels are examined in accordance to conditions and terms stipulated under the Transshipment and other local and international regulations governing Illegal, Unregulated and Unreported fishing.

- **EEZ Surveillance:** A total of two (2) surface surveillance trips took place where a Fisheries Officer joined the Maritime Police on the Nafanua patrol boat to monitor illegal, unregulated and unreported (IUU) fishing activities within Samoa's EEZ. Continued support from the Australian and New Zealand Air Forces enabled the implementation of 2 aerial surveillance trips of Samoa's EEZ for IUU activities.
- **Reported cases under Fisheries Regulation:** A total of 52 cases of people breaking fish and shellfish size limits regulations, as well as soft-shelled and egg-bearing regulations, were reported. However, only 18 cases were reported to court. Court files have been prepared and submitted to the Legal Officer for legal advices and submission to the Attorney General. The nature of offences by most fishers/fish-vendors was mainly fishing, possession, and selling of regulated fishery products as stated in the Local Fisheries Regulation 1995.
- **Village by-laws cases:** Only two (2) reported cases were filed and registered in court for village fisheries by-laws. In addition, there were two (2) from the previous fiscal year that are still in the process of court proceedings. Most of those were cases deal with people caught fishing inside village Marine Reserves.
- **VMS Trials:** A new vessel monitoring system was trialled for 3-4 months on selected vessels for vessel management and compliance purposes. The new ARGOS VMS is earmarked for locally-based vessels to further strengthen sea safety and compliance with IUU and fisheries management regulations. Upon the completion of the trial, vessels operated within Samoa's EEZ will be required to use the new system.

1.5 Fish Market Services

- **Temporary fish market:** A major renovation of the Apia fish market under the Aid programme of JICA resulted in the relocation of the fish market to the STEC building at Sogi. The temporary location continued to provide fishers a place to sell and the public access to seafood products. The temporary market was established within the context of seafood safety and hygienic regulations to ensure items traded through the place are safe for consumption.

2. SUMMARY OF ACTIVITIES

2.1 Inshore Fisheries Services

- **Fisheries statistics:** Surveys of inshore fishery landings were conducted throughout the reporting period as an ongoing activity. The data is collected from the Apia Fish Market, and the Agricultural Market at Fugalei three times a week. The Apia-Faleolo roadside survey is carried out once a week. Information collected is divided into groups such as finfish, crustaceans, and invertebrates. The estimated total volumes of inshore fishery products for the 2005-2006 periods is 114.86mt and valued at \$1,490,674.63.



Collection of fisheries data from market

Table 1: Inshore fisheries landings 2005-06

Inshore groups	Val (000T)	Wt (Mt)	Avg. price (\$/kg)	% Weight
Fin-fish	665.3	72.26	8.21	63.0
Crustacean	79.0	2.84	27.84	2.5
Processed	421.4	13.25	32.00	11.8
Other	325.0	26.30	12.37	22.9
Totals	1,490.7	114.63		100.0

The fin fish group generated a value of \$665,300.00 with 72.26 metric tones, making up 63% of the total volume of inshore fisheries products landed and traded domestically. The least of the four groups were the crustaceans (lobsters and crabs), accounting for 3% of the total volume of inshore fisheries products. The major dominant finfish species are the *Acanthuridae*- unicorn fish, and the surgeonfish with total of 37% and was sold at \$17.75/kg, Other species such as the *Scaridae*- parrotfish with 13% and was selling at \$10.70/kg, the *Carangidae*- trevallies with 10% and valued of \$7/kg, the *Mugillidae* – mullet with 10% sold at \$12.70/kg.

- **Research:** Research activities implemented by the Inshore Fisheries section within the 2005/2006 reporting period include three (3) PDF-funded projects – the Monitoring of Aggregate Spawning Species and Sites project, the Monitoring of Community-Owned Fish Reserves project, and the Fish and Shellfish Poisoning project, as well as quarterly monitoring of introduced trochus under the ACIAR Trochus Replenishment Project.

(a) Monitoring of Aggregate Spawning Species and Sites Project: The fish-sampling phase for the 10 indicator fish species is still ongoing. Fish were bought from the Apia Fish market on a weekly basis and sampled for gonad weights and sizes using the Gonad Index Method. In June 2006 observations of groupers were conducted. This species was predicted to be spawning from May to July with June being the peak month. The research was carried out in Savaii using 3 villages from the Southwest, Northwest and Northeast of the island.

(b) Monitoring of Community-Owned Fish Reserves Project: Monitoring Equipment was dispersed to the 7 selected villages. Each village were given 6 pairs of goggles and snorkels, 6 pairs of fins, 6 clipboards and a 50-meter measuring tape.

(c) Fish and Shellfish Poisoning Project: Village surveys were conducted on Upolu, Savaii, and Manono. The purpose of the surveys was to collect anecdotal information on traditional indicators and remedies for fish poisoning.



Staff conducted underwater visual census

- **Trochus Replenishment Monitoring:** Monitoring of seeding sites stocked with *Trochus niloticus* sourced from Fiji and Vanuatu continued on a quarterly basis. Recovery of seeded trochus varied at the three (3) seeded sites, ranging from good at the Papa-i-Puleia site, to moderate at the Saleapaga site, to no recovery at the Saoluafata site. Foailalo, a new village in the program, faced difficulties, first with the removal of a fence, then with a low count of the juvenile species stocked in the area in December 2005.
- **Fish Reserve Monitoring:** Altogether, 12 community-owned fish reserves and GCRMN permanent sites have been reassessed and two initial assessments have been completed for new villages. Assessments identify, record, and report on substrate coverage (live coral, algae, etc) and changes in fish and invertebrates abundance over a certain period of time.

2.2 Offshore Fisheries Services

- **Tuna Fishing Industry:** Although catches remain low, statistics showed that the tuna export industry remained one of the top foreign earners for Samoa. Fishing efforts have increased with the return of some small scale fishing alias. The month of June has been the most productive each year, posting the highest catch rate of 98.50kg /100 hooks in 2005 and 99. 20kg/100 hooks in 2006.

Statistics from the Secretariat of the Pacific Community showed that the status of the albacore is still healthy with the exception of yellow fin, which is approaching the borderline, and big eye, which is slightly past the border line.

Table 2. Annual Catch Landings and Export tonnages and values, and Fishing Efforts from 2000 to 2006

Year	Active Vessels	Total number of hooks	Est. Total Catch (MT)	CPUE Kg/100 hooks	Est. Catch Exported (MT)	Est. Value of Exports (Million-SAT)
2000	154	8,459,000	5,271	62.3	4,505	38.97
2001	149	8,610,380	6,180	71.1	5,150	45.79
2002	82	9,886,302	5,360	54.2	4,633	31.58
2003	30	7,167,831	2,846	39.7	2,069	17.15
2004	37	4,935,272	1,944	39.4	1,872	16.52
2005	35	3,263,584	1,664	51.0	1,492	13.49
*2006	36	1,907,571	1,080	56.6	474	3.75

** Estimates from January to June 2006*

▪ **Research Activities**

(a) *Albacore Tagging*: The programme is now winding up its third and final year with negative results. The timing of the programme fell within years when catches declined, beginning in 2003 and lasting until June 2005. Various methods were tried (modification of gear, varying time of operation) to improve the survival rate of fish caught, but with little success. Only 9 fishes were tagged during 10 fishing trips.

(b) *Bottom Fish Assessment*: Three of the five trips planned were carried out. The rest were prohibited by bad weather conditions. The programme is expected to run for another two year period in order to collect sufficient data and other relevant information to construct a comprehensive management plan.

(c) *Cetacean Interaction with Long Line Fishing*: Fishermen reported that interaction with cetaceans is becoming more regular, robbing them of part of their catch and denying them of productive fishing grounds.

▪ **Tuna Management and Development Plan - Key Projects Implemented:**

(a) *Apia wharf extension and renovation of related facilities*: A major infrastructure improvement project began in March 2006 to further strengthen and support the growth of the commercial fisheries. The project is funded by the Government of Japan and is principally focused on alleviating some of the major problems hindering the further development and sustainable management of fisheries in Samoa. The project has three main components:



New look of Fisheries facilities

- Extension of the Apia fisheries wharf to remedy the congestion and overcrowding of the existing mooring, berthing, loading and unloading facility and to improve the quality of exported commodities.
- Renovation of the Apia fish market which will effectively ensure the quality and safety of seafood products traded locally in a safe and hygienic environment.
- Renovation of the Fisheries Administration Centre to further strengthen support for sustainable management of the fishing industry and fishery resources.

(b) *Fish Aggregating Devices (FADs)*: One unit was deployed during this financial year, for a total of five units deployed in Samoan's waters. However, one was lost in the beginning of 2006. A proposal had been submitted for five more units for this financial year. Foreign donors have supported the programme since its inception, and garnering continued support is envisaged as the main threat to the future of the program.

(c) *Observer Programme*: Samoa's observer programme was established in 2005 after a successful regional workshop that was held in Apia. One assignment has already been completed and arrangements for the future posting of an observer have been negotiated. In addition, Samoa has fulfilled its obligation under the WCPFA for management purposes.

(d) *Fisheries Legislative Review*: The Forum Fisheries Agency had been contracted to undertake the review. The review will bring Samoa's Legislation in line with new regional fishing agreements and legal requirements. The first part of the consultation had been completed.

(e) *Small Scale Tuna-Jerky*: The trial was conducted as a demonstration of new processed tuna product. The whole process utilised local materials and a solar panel. The drier works very well but is dependent on the amount of sunshine as the source of heat. The product (dried tuna-jerky) was acceptable when given out for taste testing during the Agriculture and Fisheries Show in October 2005.

▪ **Seafood Safety**: Compliance by local Fish Exporters with the HACCP plan was monitored using regular audit visits by the authority in order to ensure that Samoa's fish and fish products bound for overseas markets meet quality standards. A seafood safety specialist was contracted through FFA

DEV Fish Project to assist with the required documentation to access lucrative European Union markets. The requirements are much tougher than those of the US market, but it is important for Samoa to have an alternative market.

- **Sea Safety and Communication Network:** The safety of fishermen is always our priority and communication is always kept operational and made available to our local fleet. The safety campaign was promoted during the Agriculture and Fisheries Show in October 2005. A funding proposal to strengthen the sea safety programme for the next two years has been submitted to FAO.

- **Advisory Committee Meetings**

Commercial Fisheries Advisory Committee (CF-MAC): This committee meets on a quarterly basis, however only three meetings were convened. The parliamentary election in early 2006 saw the changes in chairmanship when the new minister was appointed for the ministry. Some of the key issues discussed during these meetings included the Tuna Management and Development Plan 2005-09, improving of the shore facilities, and reviewing license fees.

Monitoring Surveillance and Safety Committee (MSSC): The MSSC deals with safety issues and meets on a quarterly basis. However special meetings are called during emergency cases. During the hurricane season the committee is responsible for preparing a safety plan for the local fishing fleet.

2.3 Aquaculture Fisheries Services

- **Giant clam hatchery propagation:** No spawning of giant clams occurred during the period of July 2005 – June 2006 due to the hatchery relocation. A total of 100 giant clam broodstocks were obtained from Tonga for spawning purposes. The giant clam consignments followed the IRA Quarantine protocol.

- **Giant Clam Lagoon Nursery Monitoring:** Communities with giant clam broodstocks have had varied results for performance with regards to maintenance, ranging from very good to very poor. Two communities have reportedly lost all of their giant clams from the farming area. Currently, only 15 community farms are still operating from the 36 communities that were involved in the program.



Faisua broodstock at Palolo Deep is sampled

- **Sea urchin hatchery propagation:** No spawning occurred for the sea urchin Tapumiti as all spawning activities at the hatchery at Toloa are on hold due to the hatchery relocation. The implementation workshop for the EFKS sea urchin culture project was held on the 22nd February 2006 at the EFKS Saleaumua hall. Microalgae/diatom production in the algal laboratory ceased in March 2006 when the air condition for the room broke down and caused the room temperature to increase, which resulted in contamination of the diatom cultures.

The sea urchin hatchery propagation manual has been formulated and drafted.

Tilapia hatchery propagation: 50% of all tilapia fish in the hatchery died as a result of very low levels of dissolved oxygen in the water. FD staff discovered the fish floating on the surface in the raceways, where they had started to deteriorate. FD staff with much assistance from FAO Technicians drained the water and allowed the water inlet pipe to run for 24hrs. This allowed gas exchange to occur instantly. An estimated 8,000 tilapia fingerlings were produced in the hatchery at Apia. 400 tilapia fingerlings were stocked at Salani Lake. 300 fingerlings were stocked at Mosula pond, 1500 fingerlings were stocked at Chanel College for the second cycle and 600 fingerlings were stocked in a cage at the Afulilo reservoir for EPC purposes. A partial harvest of the tilapia fish pond at Faleapuna salvaged 52 adult fish, which were sold at



Tilapia harvest at Fisheries hatchery

the fish market at \$5.00/1kg. 2 partial harvests were carried out for Chanel College tilapia pond. The fish obtained were trialled for live sales at the local fish market, which produced an estimated SAT\$480.00. FD awaits the arrival of the tilapia pellet machine from Malaysia under the assistance of FAO. The EFKS Youth group from Faleseela awaits final approval of their tilapia project from UNDP.

Tilapia Hatchery Propagation: Successful spawning of *Oreochromis nilotica* produced 8,000 fingerlings. This activity is supported by SPC.

- **Research:** *ACIAR Trochus Replenishment:* The Samoa Fisheries ACIAR Trochus Replenishment project has been extended for two more years to ensure that the trochus fishery is well established at stocked locations. An advisor from ACIAR, Dr Chan Lee, paid brief visits to assess the progress of the project and provided advice on major issues that needed attention. Another 217 trochus broodstocks were imported from Fiji for restocking and hatchery activities and more items will be obtained from Vanuatu.

- **Aquaculture Development Plan:** The Aquaculture Development Plan has been formulated and drafted after extensive consultation with relevant stakeholders, technical personnel and Fisheries Division.

2.4 Village Fisheries Advisory Services

- **Village Fisheries Management Plans:** To date, 85 villages have produced fisheries management plans including three new villages: Tafagamanu and Vaiusu in Upolu; and Sapini in Faga, Savaii. However, 23 villages no longer have active fisheries management plans. 52 villages still practice measures as stipulated in fisheries management plans. Some of these undertakings include:

- Banning the use of dynamite and poisons
- Banning coral smashing to catch undersized fish
- Establishing of Fish reserve
- Introducing village bylaws and
- Banning dumping rubbish in seashore

Table 3. Management plan formulation process in villages registered within 2005/06.

Village	First Fono	Group Meeting	FMAC Meeting	VFMP approved
Tafagamanu	16 Nov 06	25 Nov 2006	15 Dec 2005	9 Feb 2006
Sapini i Faga	17 Feb 06	8 March 2006	11 March 2006	5 May 2006
Vaiusu	17 Mar 06	23 March 2006	12 April 2006	25 May 2006

During the year, three villages (Sapini Faga, Vaiusu, and Tafagamanu) developed new fisheries management plans, which provide a blueprint of undertakings to ensure their marine environment and coastal fisheries are sustainably managed. Additionally, two other villages, Salamumu and Lotofaga, expressed interest in the program but later withdrew. Table 1 details the process of developing Village Fisheries Management plans in the three villages mentioned.

- **Village By-laws:** 3 new village by-laws for Sapini, Tafagamanu and Vaiusu were produced after extensive consultation with village councils. Thirteen other existing by-laws have been reviewed in accordance with the Bylaws Amendment 1999. They were passed onto the Attorney General's Office for legal processing before final approval. Once approved, the by-laws will be distributed to village communities and published in local newspapers. These bylaws become effective after 14 days of publishing in the Government Gazette.

Village by-laws protect and conserve the marine resources of the villages. By-laws apply equally to all residents and non-residents who fish within the inshore areas adjacent to that village. In most cases, local offenders have been fined traditionally with tinned fish, pigs and/or money by the village fono. But outsiders can be prosecuted within the Samoan Judicial system for breaking village by-laws.

- **Village Management Plan 6-Monthly Reviews:** Reviewing the performance of villages with management plans was a major component of extension's work during the 2005/2006 period. The review is conducted on a six-month period after the approval of the Village Management Plan. There were 27 reviews of VFMP undertaken, in which a quantitative approach was used. Scores were awarded to indicate the degree of each village's performance on the agreed upon undertakings. Communities scoring above the 75% threshold show optimal, successful performance, suggesting these communities have put huge effort and emphasis on their management and conservation

activities. These villages have taken initiative in leading the operation of the program with minimal required advice from the Fisheries Division. Of the 27 communities reviewed, 7 showed average performance, with some achieving just below the 75% threshold. In total, 74% of communities performed successfully while 26% need more effort to involve and engage in the program and require more technical assistance from the Fisheries Division.

Village Fish Reserves: Both the Extension and Inshore Fisheries sections have worked together on the establishment and monitoring of community-owned reserves. Only 5 village reserves (Saluafata, Samatau, Vaisala, Fagaae and Fatuvalu) have had their coordinates collected using GPS. This activity will be continued in the upcoming financial year.



Village fish reserve signboard

The size of 36 fish reserves has been recorded, and from this the Advisory section estimates that these reserves have the combined total area of approximately 3,893.83km². Eleven of these villages were no longer active in the programme. Therefore, the protected areas from the remaining 25 villages were estimated at 2,730.85sq km. Vaisala village has established the largest fish reserve of about 640 sq km. Fagaae was recorded the smallest protected area of 2.5sq km. Extension staff realises that data accuracy could not be proven due to several reasons unless Geographical Information System (GIS) and/or Global Positioning System (GPS) are used.

- **Fisheries Socio-economic survey:** An extensive socio-economic study to determine the social and economic effects of the community based fisheries management approach in rural subsistence fisheries in Samoa was conducted at 26 villages on Upolu, in which 591 households were surveyed. The survey also targeted villages with and without active fisheries management plans. Objectively, the survey is to determine whether a comprehensive management plan confers any benefits to the stakeholders in terms of larger fish, more fish, etc. The study aims to answer the question "Is community- based management working?"

- **Information Dissemination:** Information production and dissemination was one of the main tasks of the Section, resulting in the updating, reviewing, and reprinting of 3 information sheets. Objectively, these sheets inform the general public on matters pertinent to sustainable fisheries development and management, raise awareness and motivate stakeholders to actively engage in managing their fisheries and environment. Information sheets completed within this period include 1), Introduction of Community-Based Fisheries Management Program, 2) Destructive Fishing Methods and 3) Fisheries Reserves. A Bech-de-mer Species Identification brochure to assist local fishermen to identify local species and fishing habitats was also produced. The brochures were disseminated to local fishers during the bech-de-mer household survey in December this year.

Extension staff actively contributed to the production of Fisheries Quarterly Newsletter. Village communities were encouraged to provide articles on the status of their management plans so that their experiences could be shared through the newsletter.

2.5 Regulations and Enforcement Services

- **Fishing Vessels Licensing:** Every year, all commercial fishing vessels are required to be licensed to harvest fishes from within the EEZ of Samoa. A total of 42 Local Fishing Vessels were licensed, representing 75% of the total number of operating fishing vessels in 2005-06 period. Normally, the permit to fish is one year and this year was the beginning of a new licensing period where all licenses expired on 31 August. The change in the system enables the Enforcement Section to monitor and enforce the Regulation on Fishing Vessels Licensing effectively.

- **Boarding Inspections / Berthing:** Boarding and Berthing inspections are conducted daily to ensure fishing boats are complying with the Licensing and Transshipment Regulations, Fisheries wharf management plan and other policies governing fisheries sustainable management. Fifteen (15) boarding inspections were conducted by authorized Fisheries Officers to ensure compliance to foreign

licensed especially the vessels of the Islands of Pukapuka and Te Ravakai. Berthing inspection is conducted daily to ensure fishing boats are complying with the Fisheries wharf management plan and utilizing the wharf effectively.

- **EEZ Surveillance:** A total of four (4) surface surveillance missions on the Nafanua patrol boat were conducted during the year. In each case, a Fisheries Officer joined the staff of the Police Maritime. One of those missions was conducted as joint-force surveillance with the Cook Islands under a bilateral agreement between the two island nations. In addition, support from the New Zealand and Australian Air Forces resulted in the implementation of two (2) aerial surveillance trips of Samoa's Exclusive Economic Zone (EEZ).

- **Size Limits monitoring & enforcement:** The enforcement of Fisheries Regulation is carried out in accordance with the Local Fisheries Regulation 1995 and the Fisheries Act 1988. The main objective of the operation is to control, sustain and develop the fishery resources within Samoa, especially the inshore fisheries. Outlets such as the Apia Fish-Market, Salelologa Market, Fugalei Market, as well as the Roadsides, Shops and Fish-exporters are monitored weekly and inspected for undersized fishes and invertebrates.

Ongoing monitoring and enforcement of the Fisheries regulation resulted in a total of 52 reported cases; 31 undersized fish, 13 undersized and egg bearing lobsters, and 8 undersized crabs. Only eighteen (18) cases were prepared and submitted for Court proceedings.



Fish size limit

- **By-Laws infringements:** Collective effort by Fisheries and village communities in enforcing village by-laws have resulted in two (2) cases being prepared and submitted for prosecution in Court. Both offences occurred in Savaii where the offenders been caught fishing illegally within Fatuvalu's Marine Reserve. In addition, several other cases were reported by village communities on a similar matter and are still under investigations. Such include a case where people were caught fishing inside the Marine Reserve of Tafatafa village.

- **Fish Export Certificates:** Inspections and certification of inshore fish and shellfish species exported for faaoso (gifts) and for sales were carried out during the year. The countries of destinations were mainly New Zealand, Australia, Hawaii, USA and Am Samoa. 43% of the total weight of inshore fishes were exported to American Samoa, 39% to New Zealand, 14% to Australia while Hawaii and USA received 2% each. Reef finfish, crustaceans and echinoderms were the dominant inshore fishes exported. Offshore fin-fishes were exported mostly to New Zealand (43%) and American Samoa (27%). Other destinations were Australia at 20%, USA at 9% and Fiji with 1% of the total weight exported. Tuna, Demersal and Pelagic species dominate exported offshore fish.

- **Seafood Processor Licensing:** Annual renewal of seafood processing licenses were based on satisfactory performance of seafood safety requirements and were issued to Apia Export Fish Packers (AEFP), CJ Exports Company Ltd and the Tradewinds Fish Company. Processing Licenses are renewed in January each year.

2.6 Fish Market Services

- **Number of fish sellers:** A total of 10,752 fish sellers used the market during the period. This is a reduction of 13% since last year and this was due primarily to the relocation of the fish market to the temporary site at STEC Sogi. The temporary site is smaller in capacity, accommodating less number vendors.

- **Cleanliness and fish quality maintained:** Fish quality was maintained throughout this fiscal year by the market staff. Daily maintenance programs ensured the quality of fish sold at the market was of the highest standard. The staff of the fish market worked closely with the Fisheries enforcement officers to improve compliance with Fisheries regulation pertaining to size limits and fish quality.

3. TRAINING AND WORKSHOPS

Throughout the year, the Division delivered a range of workshops and trainings to enhance the capacity of fisheries stakeholders and to encourage their maximum participation, ownership and awareness of management and conservation measures installed. Moreover, Division staff have also attended both local and regional meetings, workshops, and trainings as part of their capacity development, aiding them in effectively and diligently providing services to fisheries stakeholders.

3.1 Inshore Fisheries Services

Date	Training & workshop	Staff participated
21 st Sept 2005	Media Press Release Workshop – ACB Building	Inshore staffs
6 th December 2006	Access Database In-training on Data Management – Nafanua Office	Inshore Staffs
1 st Feb-15 th Jul 2006	Fisheries Management Training –Nelson New Zealand	Tevita Apulu (FA)
15 th February 2006	Marine Protected Area Database Management In-training- Nafanua Office	Inshore Staffs
1 st June – 31 st Jul	Management & Conservation of Coral Reefs in Asia Pacific – Okinawa Japan	Joyce Samuelu (FO)
6 th April 2006	Report Writing In-training – Nafanua Office	Inshore staffs
25 th – 29 th April 2006	Scientific Writing Course for Pacific Scientists – Alafua USP Samoa	Joyce Samuelu (FO)
22 nd – 26 th May 2006	Improving Information on Status and Trends of Fisheries – FAO Apia	Nofoaiga Tausa (SFO) Lucille Aukusitino (FO)

3.2 Offshore Fisheries Services

Staff from the Offshore Fisheries assisted in coordinating and also participated in three sub-regional workshop held in Samoa on various fisheries issues. Other workshops, both local and regional were also attended by the Offshore Fisheries Staff for capacity building purposes.

Date	Name of Workshop/Training	Participant
23 rd August - 12 th Sept, 2005	Seafood Safety Management course, Singapore	Iulia Kelekolio - FO
29 th August - 16 th September	Observer Training Programme	Michael Forsyth - FA
11 th - 15 th July, 2005	8 th FAO Round Table Meeting for Pacific Island Countries on WTO Agreements.	Ueta Junior Faasili - SFO
23 rd - 26 th January 2006 *	Observer Coordinators Workshop - Honiara, Solomon Is	Ueta Junior Faasili - SFO
5 th - 7 th April 2006 *	Sub-regional Tuna Industry Workshop, Apia Samoa	Gu Savali Time - PFO Ueta Jr Faasili - SFO Mose Topeto - FO
24 th - 27 th April *	Ecosystem Approach to Fisheries Management Workshop, Apia Samoa	Gu Savali Time - PFO Ueta Jr Faasili - SFO
22 nd – 26 th May 2006	Improving Information on Status and Trends of Fisheries – FAO Apia	Mose Topeto - FO

3.3 Aquaculture Fisheries Services

The following are the workshops and trainings delivered by the Fisheries Division's Aquaculture Section for community stakeholders to support aquaculture developments.

Workshop	Date
Trochus Community workshop - Final	5 th August 2005
Trochus Community workshop – Final	11 th August 2005
EFKS Saleaumua Sea urchin project workshop	22 nd February 2006
EFKS Faleseela Tilapia project iworkshop	24 th February 2006
Tilapia Community Workshop Upolu	5 th April 2006
Giant clam Community workshop Upolu	7 th April 2006
Tilapia Community workshop Savaii	17 th May 2006
Giant clam Community workshop Savaii	18 th May 2006
Giant clam Community workshop Savaii	19 th May 2006
Tilapia hatchery propagation	Ongoing

Also during the year, staff of the Aquaculture Section attended local and overseas training to further enhance their capacity to support aquaculture developments as summarised in the following table.

Date	Training & workshops	Staff participated
July 2005	Aquaculture Economics & Marketing, Fiji.	Alleluia Taise
August 2005	Sea Food Safety , Singapore	Clifton Sa'e
May 2006	PSC Middle Management Training, PSC	Alleluia Taise
June 2006	PSC Middle Management Training, PSC	Alleluia Taise

3.4 Village Fisheries Advisory Services

A total of seven community workshops have been delivered in collaboration with other Sections of the Division for village communities.

Date	Workshop/Training	Staff participated
January 12, 2006	Fatuvalu Mangrove Conservation	Autalavou Taua
January 26, 2006	Fatuvalu Fisheries Management	Autalavou Taua
February 20, 2006	Vaiusu Community Mangroves Re-planting & Reserved Area	Ferron Fruean, Eneliko Tui Aperila
March 08, 2006	Sapini Group Meetings on Fisheries management plan development	Seu Totive, Maatui, Taumaoe, Isaia Matau, Autalavou Taua, Ferron Fruean
April 20, 2006	Apai Coral Garden	Autalavou Taua, Nofoaiga Tausa
April 13, 2006	Vaiusu Group Meetings on fisheries management plan development	Ferron Fruean, Isaia Matau, Eneliko Aperila Tui, Aifiti Viane, Siniva Itamua
May 04, 2006	Samusu Fisheries Management	Eneliko Aperila Tui

In addition staff of the Section also attended local and overseas technical and specific trainings as part of their capacity development as summarised in the following Table.

Training/Workshop	Date	Venue	Officers
FFA workshop on Eco-system approach for fisheries management	24-28 April	MAF conference room	Ferron Fruean
Coral Garden Workshop	1 st May 2006	Pasefika Inn	Autalavou Taua Ferron Fruean, Aifiti Viane
Investigation and Prosecution procedure	6 th June	MAF conference room	Aifiti Viane, Siniva Itamua
SCUBA Advanced Open water training	June	Sinalei Samoa	Isaia Matau

3.5 Regulations and Enforcement Services

Externally funded overseas training and meetings were attended by staff of the Enforcement and Regulation Section as part of their capacity building, as listed in the following table. The trainings focused on compliance issues and the biological understanding of straddling fish resources.

Training	Date	Venue	Staff participated
Global Fisheries Enforcement Training Workshop For IUU Fishing Legal	August 2005	Kuala Lumpur, Malaysia	Pouvave Fainuulelei (PLO)
Forum Fisheries Committee (FFC) and Technical Compliance Committee (TTC) Meeting	December 2005	Pohnapei, FSM	Mulipola A P Mulipola (ACEO) Pouvave Fainuulele (PFO)
Vessel Monitoring System – VMS Training	February 2006	Canberra, Australia	Tavita Sasi (SFO)
Sharing Fish 06 Conference	February 2006	Perth, Australia	Pouvave Fainuulelei (PFO)
Straddling Fish Stock Agreement Meeting	May 2006	New York, USA	Pouvave Fainuulelei (PFO)

4. INTERNATIONAL AND REGIONAL ISSUES

4.1 Western and Central Pacific Fisheries Convention (WCPF).

The WCPF Convention formally came into force on the 19th June 2005 after 13 contracting parties endorsed and signed the convention. The convention resulted from the United Nations Fish Stocks Agreement (1995) which includes arrangements for ensuring that shared stocks including tuna are not damaged by uncontrolled fishing in the high seas and within national waters.

At the present time both FFA members, including Samoa, and distant water fishing nations involved in fishing for tuna in the Western and Central Pacific Ocean have agreed on several measures to strengthen the management and conservation of targeted and non targeted species. During the second regular annual meeting of the WCPFC, the following management and conservation measures were adopted:

- *Resolution on non-target species:* Recognising the importance of non-target species such as masimasi, rainbow runner, and wahoo, members of the Commission or parties to the Convention must adopt measures to minimise discards, catch of non-target species and the impacts on associated or dependent species.
- *Resolution on the Conservation and Management measures for South Pacific Albacore:* Given the importance of the SP Albacore tuna to many Pacific Island states that have small long line fisheries, including Samoa. It is important to have a better understanding of the status and biological certainties of the stock and adopt relevant measure to ensure its sustainability. It was resolved that Commission members, Cooperating Non-Members and Participating Territories shall not increase the number of their fishing vessels actively fishing for SP albacore in the Convention Area south of 20°S above current (2005) levels or recent historical (2000-04) levels. However, this resolution shall not interfere with the legitimate rights and obligations of developing small-island States and Territories to whom SP albacore is an important component of the domestic tuna fishery.
- *Resolution on the Incidental Catch of Seabirds:* With due concern that some species of seabirds are threatened with extinction, the Commission decided that Commission members, Cooperating Non-Members (CNM) and Participating Territories must implement the International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds) and provide data and report to the Commission.
- *Resolution to mitigate the impact of fishing for highly migratory fish species on sea turtles:* In recognising the ecological and cultural significance of marine turtle species within the Convention Area, the Commission resolved that member, cooperating non-members and participating Territories shall implement the FAO Guidelines to reduce sea turtle mortality and ensure captured turtles are safely released.

- *Record of fishing vessels and Authorisation to fish:* Members of the Commission shall authorise its vessels to fish in the Convention Area and must take relevant measures to ensure that its vessels comply with conservation and management measures adopted pursuant to the Convention. Moreover, fishing for highly migratory fish stocks must only be conducted by vessels flying the flag of a member of the Commission.
- *Conservation and Management measures for Bigeye and Yellowfin tuna:* The current stock status of bigeye and yellowfin tuna within the Convention Area is a major concern. The Commission recommends a further reduction in the current fishing mortality of said tuna species. The Commission has resolved that members and cooperating non-members must adopt necessary measures to ensure the total level of fishing for bigeye and yellowfin tuna within the WCPO shall not be increased beyond the current level. However, full recognition must be given to the special requirements of small developing states and participating territories to the conservation and development of such stocks. Furthermore, CCMs such as Samoa who caught less than 2,000 tonnes of bigeye tuna in 2004 must ensure that their catch does not exceed 2,000 tonnes level in 3 years.

During the year, efforts have been made to deliver Samoa's national obligations in the conservation and management of targeted and non-targeted species as stipulated by the Conventions. Such efforts have ranged from the National Observer program to monitoring by-catches, discards, and compliance issues, and reviewing legislation. These are to incorporate measures pursuant to the articles of the Conventions, aerial and surface monitoring, as well as control and surveillance activities to monitor Illegal, Unreported and Unregulated fishing within Samoa's EEZ.

4.2 Forum Fisheries Agency Secretariat

The Secretariat has adopted a new strategic planning for 10 years which focused principally on two programmes: fisheries management and development. These programmes will be delivered by the Secretariat for member countries to ensure that they are functioning at capacity in meeting obligations for sustainable fisheries as well as maximising social and economic benefits from harvesting tuna under various forms of arrangements.

5. CHALLENGES AND CONSTRAINTS

Again, the Fisheries Division has undergone a dynamic period, both at domestic and regional levels. Major constraints and challenges faced by the Division during the year were:

5.1 Division

- The relocation of the Toloa bivalve hatchery due to the delegation of the site for tourism development delayed the development of some aquaculture activities as earmarked in the SDS. Furthermore, the major challenge in this situation is the seeking of financial and technical support for the re-establishment of a new multi-species hatchery which will produce seedlings and fingerlings to further promote aquaculture developments
- Staff turnover resulted in five senior technical staff leaving work due to long-term study leaves and other job opportunities. The sudden departure of a substantial number of highly competent staff has impacted immensely the technical capacity available within the Division to deliver support and service diligently and effectively to its stakeholders.
- Although between 70-80% of locally landed tunas are exported annually, this amount is mostly sold to the canneries in American Samoa. As a result, economic benefits for fishers are not fully maximised. This is a major challenge as some factors hindering the achievement of optimum economic benefits are beyond our control, especially in accessing high-value commercial markets.
- Due to the major renovation of the fish market and the central Administration building, the Division has relocated to three locations: Nafanua, ACC and STEC at Sogi. It has been a major constraint for management, coordination, organisation and implementation of activities due to the spread of staff and resources and has subsequently impacted the delivery of service effectively.

- Insufficient operational budget to implement activities, is a stumbling block particularly concerning the implementation of the capacity plan based on needs to enhance capability and competencies required for provision of technical supports and service delivery to stakeholders.

5.2 Recovery of tuna catches.

Tuna revenue has been Samoa's mainstay for its economy over the past 7 years. Nevertheless, catches of targeted tuna species such as albacore have declined since 2000. Many fishers and fishing vessels, especially the smaller ones, are now active again and the Division anticipates a full recovery of the tuna fishery.

5.3 Fisheries obligations as per international and regional management arrangements

The newly adopted resolutions and measures for the management and conservation of highly migratory species also bring new challenges and responsibilities for Samoa in delivering and meeting its obligations in accordance to international and regional fisheries management arrangements. Indeed, Samoa needs to incorporate such resolutions and measures nationally to strengthen the management and conservation of fish species such as tuna. To efficiently perform our obligations, the Division must develop relevant domestic legislation to incorporate management measures as per the convention and enhance the capacities of staff and related stakeholders.

6. RECOMMENDATIONS

Given the importance of the hatchery in the aquaculture development on matters of food security, fisheries stock enhancement and income generation opportunity, the Government should provide the necessary support in the re-establishment of the hatchery as readily as possible. Furthermore, sufficient assistance through adequate budgeting must also be given to ensure that Samoa's obligations in terms of fisheries management and conservation are effectively delivered and accomplished. The technical, administrative, financial and legal capacities of staff must also be thoroughly enhanced, together with the capacity and awareness of fisheries-users, ensuring that management measures are efficiently adhered to and therefore guarantee the sustainability of harvestable resources while maximising benefits from fisheries.

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- Food and Agriculture Organization (FAO)
- Forum Fisheries Agency (FFA)
- Secretariat for the Pacific Community (SPC)
- Secretariat for Pacific Regional Environment Program (SPREP)
- University of the South Pacific – Marine Studies
- University of the Southern Cross, Australia

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