

**ANNUAL REPORT**

**1975**

FISHERIES DIVISION

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## 1. INTRODUCTION

In the Government's Five Year Development Plan 1975-1979, two major Fisheries Projects are included:

- i) Village Fisheries Development
- ii) Commercial Fisheries Development

## 2. VILLAGE FISHERIES DEVELOPMENT PROJECT

The target and achievement for this project was in 1975 as follows (page 129 in the Five Year Development Plan)

<u>End products</u>	<u>Target</u>	<u>Achieved</u>
Village catch (tons live weight)	350	400 (estimated)
Commercial catch " " "	Nil	Nil
<u>Intermediate Outputs, Village</u>		
Motorized fishing units (No)	120	142
Outboard engines sold " "	100	150
Employment in part time fishing, boat building and marketing (No)	600	700
<u>Intermediate Outputs Commercial</u>		
Fishing boats 30-50ft	Nil	Nil
Fishermen	Nil	Nil

As can be seen the targets as set in the Government's Five Year Development Plan have been more than met.

The various factors that contributed to the large increase in number of motorized fishing units from 71 in end 1974 to 142 in end 1975 are as follows:

### 2.1 Agriculture Store

Making equipment available to fishermen at a reasonable cost is the first step in expanding a fishery. In 1974 the supply of outboard engines, spareparts and fishing gear was very inadequate. Sometimes several months passed when essential spareparts or fishing gear were unobtainable. The establishment of the Agriculture Store in February 1975 was a great improvement in this situation. Very soon the first stock of 2Hp Mercury outboard engines were sold out and altogether the Agriculture Store sold 85 outboard engines in 1975 at a total value of more than \$30,000. A large stock of fishing gear was also maintained. It is hoped that in 1976 the Agriculture Store can further improve its service to fishermen by establishing a more efficient system for reordering spareparts and equipment.

### 2.2 Outboard engine repair shops

The repairshop in Apia which had been established with the help of J.O.C.V. in 1973 experienced a greatly increased workload due to the doubling of the number of outboard engines during 1975. Towards the end of the year it became obvious that the workshop had to be increased and the staff strengthened. J.O.C.V. continued their valuable assistance with mechanic Kengo Tokoro and Peace Corps provided two mechanics, Jerry Clonens for the Apia workshop and Tom French for the Salelologa workshop. Approximately 300 repairs on outboard engines were effected in 1975 by the Apia Workshop.

In the beginning of 1975 the Salelologa workshop was established. The workshop was designed and the construction supervised by Gene Feldman, a Peace Corps volunteer with the

Fisheries Division from August 1974. The workshop began operation when the Group 17 had completed their training in June 1975.

The workshop in Apia and Salalologa have both been staffed with casuals and for the future operation of these workshops it is essential to strengthen the Samoan Staff through establishing posts for two Mechanic and two Assistant Mechanics. These posts have been included in the 1976 budget.

### 2.3 Peace Corps Programme

After training in outboard engine maintenance in Hawaii Peace Corps Group 17 consisting of 8 volunteers arrived in Western Samoa in April and completed their training in June. Apart from the two mechanics for Apia and Salalologa workshop, the Peace Corps volunteers were placed in the following villages selected according to the number of outboard engines:  
Aleipata, Fusi, Lefaga, Apolina Uta, Satuiatua, Sataua. The main purpose of stationing the Peace Corps volunteers in the villages were to teach the fishermen preventive maintenance and execute minor repairs. All major repairs will be done in the Apia and Salelologa workshops. The Peace Corps volunteers also provides valuable informations to the Fisheries Division regarding number of active fishing units, number of trips and average catch per trip. During the period of September to October data from 21 fishing units were collected showing that, during this period each unit goes out between two and three times a week and catches on an average 120lb of fish using about 5 to 6 gallons of petrol per trip. Some of the more active fishermen in Aleipata caught more than 5000lb during this period. The period of October to December is of course the good atu season which explains the high catches caught on trolling.

### 2.4 Hire Scheme for Outboard Motors

The Hire System which was started in 1974 continued its operation in 1975. In addition to the initial batch of 10 Yanaha 25hp engines a second batch of 10 Tohatsu 25hp was provided by J.O.C.V. Altogether 62 Fishermen hired outboard engines during 1975, and altogether \$2,220 was collected in rent. The rent for one months hire was originally \$20. In the original agreement between J.O.C.V. and the Government the rent should be high enough to pay for all repairs and purchase new engines when the old ones where worn out. It was found during the first year of operation that the sum of \$20 was not sufficient to cover all costs and the rent was raised to \$40 as from June 1975.

### 2.5 Boatbuilding

Boatbuilding was started within the shed of the Fisheries Division in Apia. The materials were supplied by the Fisheries Division while the work was contracted to a group of 6 boatbuilders. The building of boats started in February with the construction of a prototype 18ft and a 28ft boat both to be powered by a 20hp outboard motor. The construction was further advanced with the arrival in June of FAO Associate Expert in Boatbuilding, Arild Overaa from Norway. During 1975 altogether 14 boats of 18ft and 5 boats of 28ft have been built. The popularity of the 18ft boat is partly due to price (\$400) and the inclination of most Samoan fishermen of only doing trolling for tuna. There is no doubt that a combination boat for handling and is a better solution for Samoa.

The Fisheries Division is therefore through its Demonstration team encouraging the use of the 28ft boat for this combination fishing.

The sale of boats from the Fisheries Division came to a total of \$8471 in 1975.

## 2.6 Demonstration Team

The Demonstration Team consists of a 28ft and an 18ft boat with one leading fisherman in each boat and an extra casual. The 28ft boat normally takes 3 local fishermen along and the 18ft boat 2. The main purpose of the Demonstration team is to demonstrate new boats and equipment suitable for bottom fishing. During the main part of the year the Demonstration Team worked with the SFC Fisheries Project in Asau.

Period	Village	No. of trips		Total catch (lb)		Average catch per trip (lb)	
		18ft	28ft	18ft	28ft	18ft	28ft
15/7-25/7	Lepa	5	5	1065	1100	213	220
7/11-11/11	Musumusu	2	3	380	380	126	126
13/11-19/11	Salimu	3	3	196	512	65	170
20/11-21/11	Taelefaga	2	2	393	179	196	90
24/11-26/11	Maasina	3	3	152	281	51	93
1/12-4/12	Lona Akoi	3	3	222	609	74	203
5/12-9/12	Sananea	3	3	108	563	36	187
10/12-15/12	Salotele	1	2	181	410	181	205
TOTAL		22	24	2697	4044	123	169

It will be noted from the above that the 28ft boat caught 40% more fish per trip than the 18ft boat which proves its superiority for bottom fishing. Altogether the Demonstration team during its first period of actual fishing in the villages has amply proven its value by showing that sufficient catches can be caught by a boat of 28ft even when tuna is not available to make a handsome profit. The fishing result is of course very dependent on the skill of the fisherman and bottom fishing during night at depth of 100 fathoms require much more strength and stamina than trolling at daytime. However there is no doubt that an increased and more regular fish production by village units can only be achieved through more intensive bottom fishing than is carried out at present. The Fisheries Division is therefore pursuing this line of action through its Demonstration Team and through the supply of boats and equipment suitable for bottom fishing.

## 2.7 Village Fisheries Survey

During November 1975 a survey was carried on in Upolu and Savaii to determine the number of active fishing units utilizing outboard engines. The survey showed the following number of fishing units and outboard motors.

	No. of Motorized units		Type of craft 1975		
	1974	1975	Alia	Vacalo	Vaaafi
Upolu	44	98	49	15	36
Savaii	29	44	15	22	6
Total	73	142	64	37	42

Number of engines sold in 1975:

Mercury 20 hp	85
Johnson 40 hp	9
" 25 "	25
" 15 "	14
" 9 "	6
" 6 "	9
" 4 "	1
Total	149

### 2.8 FAO/DANIDA Village Fisheries Development Project

The Plan of Operation for this project was signed by the Secretary to Government on the 1 December 1975, and the project became operational from this date. The project is for a total of US\$408,500 over a two year period til end 1977. About WS\$230,000 will be utilized for the construction of boats in Western Samoa and the importation of engines and equipment. The project will supply fully equipped fishing boats for selected village fishermen through a Hire/Purchase system. The repayment will establish a Revolving Fund in the Development Bank. The project which is financed by Denmark and executed by FAO, will over 1976 and 1977 be of major importance in the expansion of the village fishery.

### 3. COMMERCIAL FISHERIES DEVELOPMENT

This project is envisaged to start in 1977 with the introduction of larger boats of around 40-50ft. During 1975 the construction had been started on a 41ft boat by a local company, Wallwork Enterprises. This is a very worthwhile effort and should receive Government support through the establishment of suitable mooring space and landing quay for fish in Apia. It also raises the need for a much better slipway and repair service than the one presently existing in Apia. It is the opinion of the Fisheries Division that the profitability of larger boats will be dependant on the introduction of the pole and line fishing method utilizing live bait. The lack of live bait in the lagoons to sustain a commercial fishery creates a major hindrance to the development of this fishery and it can only be overcome by the culture of a suitable hardy live bait. This is dealt with under section 4.2.

### 4. EXPERIMENTAL FISHING

#### 4.1 FAO Tuna Fisheries Project

This project became operational with the arrival of the FAO master fisherman Shiro Horibe in August 1971. The FAO provided a 41ft pole and line fishing vessel in August 1972. Mr Horibe departed in May 1973 and the result had that far been negative. The survey of a live bait resource of necessity takes considerable time and the project activities were resumed in February 1974 with the arrival of the FAO Masterfisherman W. Paulo. After a 18 months survey it was concluded that insufficient bait was available to support

a commercial fishery. In consultation between the FAO Regional Fisheries Coordinator Harry Sperling and the Government, the project was terminated by end 1975. A revised project with emphasize on live bait culture is being proposed for the inclusion in the UNDP Country Programme, 1977-81. Since the utilization of the FAO 41ft Tuna boat would depend on available live bait it was agreed that the boat should be transferred on a temporary basis to the FAO Marine Resources Survey Project in Tonga.

The FAO Tuna Project has however confirmed the abundance of skipjack tuna on a year around basis with main activity in October-June. The resource is therefore present to support a greatly, expanded fishery once suitable culture live bait becomes available in sufficient quantity.

#### 4.2 Bait fish culture

The bait fish culture project was prepared by the Peace Corps Marine Biologist Gene Feldman in October 1974. A suitable site for the excavation of ponds was located in Vaiusu Bay. For unknown reasons it took the Lands and Survey Department more than one year to finalize the lease of this site which seriously delayed the execution of this important project. The lease was finally signed in November 1975 and the excavation of ponds started in December. Preliminary results of using the the first experimental ponds for culture of Mexican Mollie (*P. mexicana*), local name Tiavai, will be available in April 1976. The activities is coordinated with the baitfish culture project in American Samoa. The purpose of the experimental ponds is to obtain sufficient informations to permit construction of ponds on a much larger scale utilizing the same kind of swamp-land which is not suitable for any other purpose.

#### 4.3 FAO Fishing Consultant

Mr. R. Wabbersen, an expert snapper fisherman from Florida, arrived in end of March. During his three months stay, he worked partly with the SPC project and partly with the Fisheries Divisions Demonstration Team. Mr. Wabbersen confirmed that the bottom fishing do not yield the same high results as in the Gulf of Mexico, but that several improvements could be made to the local bottom fishing techniques. Among these improvements can be mentioned a new type of anchor and a method for moving from one fishing ground to another without lifting the anchor. This makes shifting of fishing positions far less strenuous than hauling 150 fathoms of anchor line each time. When the anchor is finally hauled, a buoy is used to retrieve it.

#### 4.4 SPC Fisheries Project

The project arrived in Western Samoa 20 March and stayed until 31 October. Asau was chosen as a base for the project. The project had a staff of one Manager, 3 Master Fishermen and 1 mechanic. The two boats consisted of one 24ft aluminium boat with a 70 hp Chrysler Nissan diesel engine and one 24ft, Pagopago Plywood boat with a 135 hp Ford Falcon petrol engine. The 28ft boat for the Fisheries Divisions Demonstration Team was most of the time attached to the project. During the course of the project 13 trainees participated in the fishing for periods of from four to ten weeks. The project caught 15000lb fish over six months which gave the Government a revenue of \$2850. The average catch per trip was 182lb on bottom fishing and 61 lb for trolling.

These catch rates are not spectacular, but certainly sufficient to cover the cost of operation of smaller boats like the 28ft boat built by the Fisheries Divisions. The project provided valuable training for many of the local fishermen and as result of its activities, fishermen from Falealupo have ordered two 28ft diesel powered boats from the Fisheries Division. A special report on this project has been submitted to the Government by SPC.

#### 4.5 Fisheries Divisions Boats

Catch in 1975:

	FD I			FD II		
	No. of trips	Weight in lb	Value	No. of trips	Weight in lbs	Value
January	-	-	-	6	1208	\$216.85
February	-	-	-	8	2062	367.55
March	-	-	-	7	835	153.15
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	2	26	3.90
August	-	-	-	5	550½	110.00
September	-	-	-	4	543½	91.30
October	3	360½	571.50	5	658	123.20
November	7	976	212.10	-	-	-
December	6	563½	109.00	2	269	53.80
TOTAL	16	1900	392.60	39	6152	1119.75

Average catch per trip 1191lb

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The FD IV was not operational due to lack of spareparts. The engine of the FD I has been damaged by water ingression when the boat went on the reef in December 1972. Due to delays in delivery of spareparts, the engine was not repaired before middle of 1975 and then through the assistance of the newly arrived FAO boatbuilder Arild Overaa. The FD II went on the reef in Asau in March and since the slipway in Apla was occupied for 3 months, the damage could not be repaired before June.

The experience of operating the larger boats in the Fisheries Division has clearly shown that from an economic point of view these boats are not very profitable. The 28ft boat used in the Demonstration Team had a higher catch per trip than the FD II and the investment cost is five times less. With the present fishing methods of trolling and handlining, the 28ft boat presently built by the Fisheries Division for the Village Fishery seems to be the maximum size of boat required.

#### 5. TURTLE HATCHERY

The following records given the activity of the turtle hatchery in 1975.



	<u>Eggs found</u>	<u>Eggs Hatched</u>	<u>Turtles Released</u>
Jan.	489	-	-
Feb.	-	236	442
March	-	176	42
April	1280	117	190
May	1498	645	507
June	504	865	684
July	-	254	102
August	-	-	-
Sept.	-	-	-
Oct.	312	-	149
Nov.	577	39	189
Dec.	499	128	5
	5159	2460	2380

There are indications that the population of Hawksbill turtles is now increasing in Western Samoa. The turtles are marked before the release by taking off one of the nibs in the shell and several turtles thus marked has been found for sale in the Apia Market or caught in the fish traps at Aleipata.

#### 6. STAFF

Luatua Toatasi Vesi, continued as an Acting Controlling Officer in 1975. Four new positions were created, two for leading fishermen and two for Assistant Mechanic. The leading fishermen positions were filled but only one of the Assistant Mechanic positions, Ueta Faasili Fisheries came back in October from a one year course in England and Fili Suafoa went in May for a one year course in Coastal Fisheries in Japan.