

SOUTH PACIFIC COMMISSION

FOURTH TECHNICAL MEETING ON FISHERIES

Noumea, New Caledonia

(21 - 29 October 1970)

FISHERIES SERVICES IN FIJI

Existing fishery:

Up till the end of 1969 there were 1392 licensed commercial fishermen and 1193 vessels registered for commercial fishing. Licensing costs per annum include: \$4.00 for the master of a boat, \$4.00 for the boat and \$1.00 for each crew member.

Of the three basic types of fishermen resident in Fiji the independent fishermen are associated with the government's fishermen's training programme and ice silo scheme. These fishermen operate entirely in the sheltered inshore waters of the reef and lagoons.

The only exploitation of the vast pelagic fish resource is by the Japanese and Korean long-line fishing operations based at Levuka. The near water tuna resource is virtually unfished.

The Government Fisheries Programme and Personnel:

The Fisheries Division of the Department of Agriculture is headed by a Senior Fisheries Officer who is under the direction of the Director of Agriculture. The Division is staffed by:-

- a) Senior Fisheries Officer: O.C. Division.
- b) Fisheries Officer: Small unit fisheries.
- c) Fisheries Officer: Seagoing Biologist (Tuna).
- d) Senior Fisheries Assistants: x 4
- e) Fisheries Assistants: x 15
- f) Marine Officer Grade I: 1 vacant
- g) Marine Officer Grade II x 5.
- h) Executive Officer.
- i) Clerk and Recorder.
- j) Typists x 2.
- k) P.C.V.
- l) Unestablished workers (22).
- m) Drivers x 2.

The division is primarily engaged in development programmes to help those villages and islands which do not have an adequate source of income such as copra, vegetable or animal produce. This programme revolves about the Ice Silo System as discussed in the paper "A new concept for Fish preservation in remote Islands".

The vessels at present involved in servicing the dependent fishing schemes include the 55-foot vessel M.V. "Gonedau", which is powered by a Rolls Royce diesel engine and capable of 9 knots. It is equipped with two 4-ton ice holds, a ship to shore radio, radar and depth recorder.

Other vessels include the M.V. "Davui" recently converted for extension work in the Yasawas, and the M.V. "Volaca", a diesel powered vessel approximately 30 ft long. This vessel was designed essentially as a carrier vessel capable of holding 5 tons of ice in a large insulated ice hold amidships.

Conservation of fishery resources is maintained by marine patrol vessels "Dilio" and "Damu".

#### Shore Support Facilities:

##### 1. Marketing.

Fresh fish are sold in Fiji through local government markets. These are strategically located in Suva, Lautoka, Labasa, Nadi, Ba, Tavua, Sigatoka, Nausori and Tailevu. Both Lautoka and Ba markets provide refrigerated show benches. Holding freezers are available in Suva, Lautoka, Labasa for fish to be held overnight. For this, a service fee of two cents per pound of fish is charged.

##### 2. Ice and Cold Storage Facilities:

At the moment this is one of the most important limiting factors in the development of the fishing industry in Fiji. In Suva at the present moment adequate ice and storage facilities are not substantial. Block ice is produced by a few butcheries in the main centres. Some of these provide cold storage space in Lautoka and Suva. A refrigerated truck is available for transport of fish from Lautoka to Suva.

In Levuka the Pacific Fishing Company operate a 60 ton block-ice plant and fifteen hundred to two thousand tons of frozen fish storage space. However this ice, though available to the local fisherman in blocks or crushed form, is extremely expensive, at \$24.00 a ton.

Towards the end of this year the Fisheries division will have assembled flake-ice plants in Suva and Lautoka. These will include:

	<u>Suva</u>	<u>Lautoka</u>
Ice-makers	10,000 lbs.	6,000 lbs.
Ice hopper and frame	20,000 lbs.	12,000 lbs.

A pre-fabricated modular built 28°F Chiller room capable of holding 5 tons of fish, and a -10°F room capable of holding 20 tons of fish will be assembled at the Fisheries Division's headquarters.

##### 3. Wharves and Bunkering Facilities:

Adequate supplies of fuel, water, power and ample docking facilities are available in the main centres in Fiji.

#### 4. Boat-building facilities:

These are provided by both government and private companies; steel vessel construction is carried out in the government shipyard, building for both private companies and government departments. Wooden hull construction and repair work is carried out in several yards, all of which appear to be adequately equipped to repair and maintain the engines, generators, pumps and equipment found on commercial fishing vessels. Fibre-glass and ferro-cement hull construction is carried out by one company in Suva.

#### 5. Drydocking Facilities:

Excellent drydocking facilities are provided for vessels to 1000 tons by both private companies and the government shipyard.

#### 6. Small Ship's Radio:

The Fiji posts and Telegraph Department provides a small ship's radio telephone and a morse telecommunications system. This provides ship to shore communication, weather reports and general notice to mariners.

#### 7. Meteorological Services:

Routine daily weather services are provided by:

- (i) Radio Fiji: The weather news is broadcast regularly six times a day.
- (ii) Fiji Posts & Telegraph Department: The small ship's radio-telephone system provides a continuous service on weather reports. In normal weather conditions four reports are given daily and on receipt of a gale, storm or hurricane warning affecting shipping a preliminary warning is effected immediately and thereafter at 3 minutes past the hour.
- (iii) Telephone Service: A dial-a-weather forecast service is available in Fiji.

FINANCE: The Fiji Development Bank is providing substantial loans to fishermen for vessel and gear requirements, while the Fisheries Division is providing, through its extension services the means by which Island fishermen can eventually purchase their own boats and fishing gear. (See paper by A. Banner on "The development of small scale fishing units in Fiji - a progress report".)

#### Training for Fishermen and Fisheries Staff:

Villagers from various islands are at the moment involved in the first Fishermen's training course at the Derrick Technical Institute. This course is outlined in Appendix I.

A number of fisheries Division Staff are presently overseas on training courses. The courses are:-

- (1) Gear technologist: Cochin, India )
- (2) Radio technician: Cochin, India ) 9 months
- (3) 2nd Hand for Research Vessel, Cochin, India. )

(4) Fishing Master: BSIP - a one year seamanship training course.

(5) Fisheries Officer: United Kingdom. A one year course in "Fisheries training for overseas posts".

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DERRICK TECHNICAL INSTITUTE  
BASIC BOAT BUILDING & MAINTENANCE COURSE

COURSE STRUCTURE:

1. Attendance: To cover full time or 35 hours per week one academic term.

<u>Subject</u>	<u>Hours per Week</u>
Practical	15
Theory & General Maintenance	10
Drawing	6
Motor Maintenance	<u>4</u>
	<u>35 hours per week</u>

This will be run by the D.T.I. in connection with the Fisheries Department.

The D.T.I. will provide instructions and accommodation. The Fisheries Department to recommend students for the convex.

BASIC BOAT BUILDING PRACTICAL 15 HOURS PER WEEK

The following work should be covered in one complete course.

- a. Introduction to work shop, hand tools, machines etc.
- b. Safety rules of work shop and machine shop.
- c. Use, care and maintenance of hand and power tools.
- d. The making of simple joints such as scaphs, dovetails, mortice and tenon.
- e. Lay out of planking, carvel, clinker and sheet ply.
- f. Use of the loft, lofting and fairing, loft tools.
- g. Group work should be introduced at this point, groups of say four.
- h. Group to work on short projects, such as lifting simple vessel, laminating timber, steam bonding, taking off moulds, setting up moulds. (All groups to attempt each).
- i. To build a vessel of the type to be used at the station the students work. To repair same and others available under strict work shop supervision.

Students were sponsored by the Fisheries schemes on the islands of: Ogea, Fulaga (3), Komo, Batiki, Kia, Galoa and Bua.

BASIC BOAT BUILDING THEORY 10 HOURS PER WEEK

A short history of ships and shipbuilding explanation of types of vessel, their evolution.

Description of various parts of the tree, Sapwood  
 Hardwood  
 Bark  
 Medullary Rays  
 Annual rings  
 Shapes  
 Grain  
 Growth of Timber.

Insects which attack timber, decay, marine borer  
 Methods of combatting borer  
 Suitable local timber for various parts of a boat or vessel  
 Durability and preservation of timber  
 Correct method of cutting timber from logs, quarter swings, slab  
 sawing etc.  
 Methods of seasoning timber, moisture content  
 Hull forms round and chine  
 Plywood construction, lamination construction (knee, stem, breshook),  
 keel construction, stem construction  
 Various methods of planking  
 Frames bent and built up  
 Floors grown and bent  
 Decks beams, carling, shelves, covering boards  
 Elementary study of paints and anti-fouling  
 Various types of fastenings (advantages and disadvantages)  
 Clues  
 Fibre glass sheeting  
 Repair work, replacing various parts of boat or vessel.  
 (Removing rot, cracks, borer infested timber).

#### BASIC BOAT BUILDING DRAWING 6 HOURS PER WEEK

Two and four stroke cycle  
 Construction of engines  
 Fuel system  
 Ignition system  
 Lubrication  
 Cooling  
 General Maintenance  
 Trouble Shooting  
 Electrics.

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