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SOUTH PACIFIC COMMISSIONTENTH REGIONAL TECHNICAL MEETING ON FISHERIES

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COUNTRY STATEMENT - KINGDOM OF TONGA

by

W. A. Wilkinson
Fisheries Officer
Department of Agriculture
Nuku'alofa, Kingdom of Tonga

I. General

1. Estimated fish landing for the year ending December 1977 was 1,300 tons of which some 239 tons was produced from the Government-owned fishing vessels. It has also been estimated that a further 1,300 tons is required to satisfy local demand. Imports of processed fish, tinned and in other forms amounted to the equivalent of 200 tons of wet fish during 1977. The FAO/UNDP Marine Resources Development completed its 23 months project. Findings from the investigations carried out indicated that the Kingdom has commercially exploitable stocks of demersal species loosely termed snappers, comprising some twenty-seven species, of which the Manga (Lethrinus lentjan) was the predominant species taken.

2. Exploratory fishing using Mexico type hand operated reels revealed that the most productive fishing grounds in the outer reef area was in a depth of 20-80 fathoms, with appreciable seasonal variations in the catch rates. Catch rates per reel hour varied from a low of 2 lbs to a high of 29.7lbs. The overall mean average was 10.8 lbs a reel hour which is considered, in comparison with similar outer reef fisheries elsewhere in the world, to be a commercial catch rate.

3. The Outer Reef Fishery was calculated as having a standing crop of 6,000 tonnes with a potential yield of 2,000 tons. Lacking suitable fishing vessels the Tongan fishermen do not have the capacity to fully exploit this resource. During the year, however, some progress was made and three local fishermen had boats built and installed with small diesel engines. Though not technically perfect the vessels at least are a forerunner of better vessels to come.

4. Exploratory fishing for skipjack tuna was also carried out, mainly in the Northern Vava'u group. The work was undertaken by the 40-foot chartered vessel "Tropac" and the Government-owned Australian donated "Kahikahi". During the season 59 and 28 schools of fish were sighted by each vessel respectively. A total of 4,238 skipjack tuna were taken during the exploratory fishing period. Considering the relative inexperience of the Tongan fishermen and the limited capacity of the vessels, the results were satisfactory. Complementary investigations into the availability of suitable live bait was also undertaken, mainly in the Vava'u area. Using a 16' lift net with 500 watt and 1,000 watt underwater lamps, and a day time beach seine. On 21 fishing nights this accounted for 141 'buckets' of good quality bait, and in 12 nights fishing operations 48 buckets live bait was collected from the lift net. The bait fish comprised Spratelloides spp., Alanetta spp. and Harengula spp. as well as the local Otule Selar crumenophthalmus which was considered too large for effective live bait usage. Based on surface feeding schools sighted within a radius of 25-30 miles from the Vava'u islands, it was estimated that 1,500-2,000 tons of skipjack are available for exploitation in this area alone. Further investigations are required to assess if there is sufficient suitable live bait available to support a pole and line fishery large enough to exploit this resource.

II. Oyster and Mussel Cultivation

5. This continued throughout the year with some measure of success. With the assistance of the New Zealand Ministry of Agriculture, and Fisheries Scientists two consignments of molluscs were imported from Sabah in Malaysia. These included a trial consignment of 100,000 green mussels Mytilus viridis and Crassostrea belcheri.

6. Both suffered minimal mortalities en route and have been sited in the Kingdom. The C. belcheri which were attached to 100 collector strips were placed on racks in the intertidal area in the Channel between Nukunukumotu Island and the main island of Tongatapu. The M. viridis were dispersed between three sites at Vava'u in the North and off Pangaimotu Island and the Fanga'uta lagoon on Tongatapu Island in the South. To date excellent growth rates and survival rates have been recorded from the Fanga'uta lagoon site, with less encouraging results in the other areas.

7. The Japanese Pearl Oyster Company Tasake Pearl continued experimental work with the successful implantation of the Pearl Oysters brought from Japan 12 months ago. Growth rates for this species have been excellent and the Company are confident that a small industry based in Vava'u can be established. During October a further consignment of 4 species were imported. This comprised Pinctada fucata, Pteria penguin, Pinctada margaritifera and Pinctada maxima. All species were artificially bred from larvae in the Tasake Pearl Research Centre in Kobe Japan.

III. Cultivation of Poecilea vittata

8. Despite a setback resulting from the serious earthquake in June 1977 some progress has been made. Electricity was extended to the site which enabled artificial aeration of the brood tanks greatly improving breeding capacity and sufficient mollies were collected for two effective field trials of the live bait vessel 'Kahikahi'. Observations from these trials showed the mollies having a marked predilection to sound immediately on being chummed. However, if mixed with other live bait species they proved equally effective and attractive to the feeding tunas. The rearing ponds have been deepened and extended and if further trials prove satisfactory a more intensive cultivation programme will be initiated.

9. An unusual side effect of the June earthquake was the killing of the entire pond stock of milkfish (Chanos chanos). Unfortunately the ubiquitous tilapia remained unscathed.

IV. Fishermen's Loan Scheme

10. The Government's Fishermen's Loan Scheme administered by the Fisheries Division was taken over by the Tonga Development Bank. Technical appraisal of applicants will still be carried out by the Fishery Division Staff. More funding will be available for fishermen wishing to purchase improved fishing boats and equipment lending rates are less advantageous rising from 3% to 8%. A total of \$25,796 has been loaned to fishermen since the Scheme's inception.

V. Long-line fishing

11. The Kingdom added a further oceanic long-line vessel to join the existing and ageing 'Ekiaki'. Named 'Tavake' this vessel was donated to Tonga by the Japanese Government. Used in Japan as a training vessel for young student fishermen 'Tavake' is in excellent condition and has fished successfully since its arrival. Both fishing vessels have had a good year's fishing landing of 139 tons and 101 tons respectively. Export of tuna mainly Albacore earned a total of \$US 87,000 in foreign exchange in addition to providing much needed fish sold on the local market which earned T\$ 43,309.

12. An unusual feature was the good catches of Albacore taken in October, November and December in the Northern waters of the Kingdom. This is the first year Albacore were taken in the Northern latitudes. This species comprised 39% of 'Tavake's catch and 24% of 'Ekiaki's catch.

13. Factors affecting the long-term viability of these vessels during the year was the doubling of the cost of frozen bait used on the fishing operations. This escalated from \$US9.50 a 10-kilo case in 6 months to a rise of 51.23%. These vessels fish 200 baskets and use 11x10-kilo cases of bait daily, an expensive operating factor. The division's efforts to catch sufficient bait locally using Teichi ami type trap net have been hampered by the lack of effective cold storage. Locally caught species such as the Otule (Selar crumenophthalmus) and have proved excellent provided they are frozen quickly and maintained at low temperatures.

14. The Kingdom's two long-line vessels are crewed by 50 entirely Tongan staff and make a useful contribution to the health and economy of the Kingdom.

VI. Future Development

15. The Fisheries section of the Third Development Plan clearly identifies how the fishery is to be developed. Approximately \$1.7 million has been provisionally committed from various aid sources such as Australia, New Zealand, U.K., Japan and from the E. E. C. Economic Development Fund. International agencies will also provide technical support. An important development during the year was the near completion of the Fisheries Extension Centre in Vava'u funded by the Government of Australia, as part of this country's overall Development Assistance Programme to Tonga. The Centre includes office accommodation, workshop and laboratory as well as 2x10-ton cold storage units with ice-making facilities. A house for the Fishery Extension Officer is also included. The facilities will materially assist the Fisheries Division in developing fisheries and training local fishermen in this area.

16. Other impending developments are the construction of a fishing boat harbour, fish market and cold storage facilities in Nuku'alofa to be funded jointly by Australia, and E. E. C. Japan has also contributed 1.2 million US dollars for the construction of a Mariculture Research Centre with the most modern equipment and facilities. Japan is also supplying a 16-metre live bait pole and line vessel due to arrive in the Kingdom in February 1978. Complementary to these developments the Fishery Division has expanded considerably from being virtually non-existent in 1973 to an effective Division employing 100 staff. A new expatriate Fishery Extension Officer has joined the staff to be followed by a Marine Fleet Superintendent, both recruited under the U.K.'s Technical Assistance Programme. Japan has provided a bait fish specialist and four co-operation volunteers, two marine mechanics and two trained in general fisheries work.

17. Provided the development of fisheries is allowed to progress in a planned and rational manner clearly the Kingdom can expect this to make a substantial contribution to the country's future economy and the well-being of the people.