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TWENTY-SIXTH REGIONAL TECHNICAL MEETING ON FISHERIES
(Noumea, New Caledonia, 5 - 9 August 1996)

COUNTRY STATEMENT

KINGDOM OF TONGA

the probability of a given state \mathbf{x} is

$$P(\mathbf{x}) = \frac{1}{Z}$$

where Z is the partition function

$$Z = \sum_{\mathbf{x}} \exp(-\beta E(\mathbf{x}))$$

where $\beta = 1/(k_B T)$ is the inverse temperature, k_B is the Boltzmann constant, and T is the temperature.

$$E(\mathbf{x}) = \sum_i \epsilon_i x_i$$

$$\epsilon_i = \epsilon_i^0 + \epsilon_i^1$$

KINGDOM OF TONGA COUNTRY STATEMENT

TWENTY - SIXTH REGIONAL TECHNICAL MEETING ON FISHERIES, 5-9 AUGUST, 1996

INTRODUCTION

In the past two year, SPC has supported our participation at various regional and international meetings and conferences. This support has given the Ministry the necessary background exposure and contacts so vital to the effective implementation of our development programmes.

Tonga has enjoyed the services of SPC in supporting its various development work programmes. In August, 1995 the Ministry of Fisheries with financial and technical support from the SPC's Tuna Programmes started a 4 year data collecting programme on tuna fisheries. At the binging of the year, the SPC assisted a national workshop on Women in Fisheries in which fisher women were taught of fish processing, handling and some cooking technics.

The SPC's Intergrated Coastal Management Project in Collaboration with the Ministry of Fisheries conducted an intensive survey of aquarium and bech-de-mer resources in Tongatapu and Ha'apai respectively. In line with these assistance shall be sought to survey the black lips mother of pearls resources, *Pinctada margaritifera* in the 3 main island groups.

HIGHLIGHTS OF EVENTS AND ACTIVITIES THAT HAVE TAKEN PLACE SINCE THE LAST RTMF IN MARCH 1994.

The former Secretary for Fisheries, *Mr. Sione Tualau Mangisi* retired from service with effect from March 1995. From than on the administration of the Ministry was taken over by the Chief Secretary and Secretary to Cabinet until February this year when '*Akau'ola* was transferred from the Prime Minister's Office and appointed as the new Secretary for Fisheries.

The new post of Deputy Secretary for Fisheries was filled by *Mr Mafi 'Akau'ola* who was officially transferred from the Ministry of Agriculture and Forestry in June, 1996.

Despite these two recruitment's the Ministry is badly suffered from under staffing. The heads of Extension, Computer and the Hatchery left at the beinging of this year for further studies. The Head of Research is still attached to the SPC's ICMP and we look forward for his return in 3 month's time. The Officer in charge of the Ministry's human resource and training has taken leave without pay for 2½ years.

The Tonga's 6th national 5-year development plan finished in 1995 and the Ministry of Fisheries, like other Ministries, has formulated its own 5 year strategic planning whereby each Division are charged with sets of objectives in order to achieve the Ministry's mission of maximises harvesting of the marine resources of the Kingdom in a sustainable ways to feed and enrich the Nation.

With the increasing orientation towards a cash economy and growing population, inshore marine resources in Tonga have been subjected to levels of exploitation significantly above traditional subsistence levels. Information available shows that most inshore commercial orientated resources such as sea cucumber, lobster, giant clams are heavily over exploited.

The Sea cucumber follow-up survey conducted in June, 1996 by SPC indicated about 93% of the original virgin stock of black teatfish and white teatfish in 1990 has been fished. Therefore to revive the fishery Ministry of Fisheries has recommended to the Government to ban the fishery for 5 to 10 years until the stocks recover.

A provision in the Fisheries Regulation (Conservation and Management), which became effective in September 1994, specify a size limitation for both lobster and giant clam. Taking of ovigerous (carrying eggs) lobster also prohibited. Commercial exploitation of giant clam is prohibited except those produced in hatchery.

To diversify the fishing pressure on the inshore fisheries resources the Ministry has made a great effort to develop its aquaculture programmes and to promote offshore fisheries.

The main objectives of the aquaculture activities are to create new commercial fisheries (such as pearl oyster farming and introduction of trochus and green snails), and to increase fisheries production for domestic consumption (such as giant clam hatchery, mullet farming and introducing of *Tilapia nilotica*)

The pearl oyster project has reached its final stage and FAO's SPADP has sought an assistance for two Consultancy to evaluate the project and to formulate policies to regulate the industry.

Evidences of trochus (*Trochus nilotica*) new recruitment from 350 shells imported from Fiji and released in Vava'u in 1992 were confirmed. The second introduction of about 1000 shells, again from Fiji, in 1994 were released in Tongatapu. The production of about 2200 from the first spawn induction in early 1995 will be released at the end of this year.

About 300 and 50 green snails (*Turbo marmoratus*) were introduced from Japan and Vanuatu respectively in 1994 and released in Tongatapu. The first natural spawning trial of green snail conducted in January, 1996 was very successful compare to the first spawn induction in 1994. The production of about 8,000 seven month young snails represent about 7.6% survival rate from larval stage.

The current demand of aquarium exporters for giant clam is supplied by the Ministry's hatchery and excess are distributed free to villages or islands communities to maintain until reached marketable size.

A study on the feasibility of mullet farming indicated that intensive farming in pen is not feasible. The main reason behind this is the shortage of seeds of the target species, *Mugil chephalus* and *Vulmugil seheli*. However, extensive culture of smaller species, *Vulmugil species* could be feasible. The internal rate of return for 1, 1.5 and 2 ha fish pen are found to be -7%, 14% and 29% respectively.

The Ministry with the assistance of the FAO's SPADP has identified a market for seaweed, *Cladosiphon sp* in Japan and a company has committed to buy all the production from Tonga at the end of this year.

One of the main fishery export commodities is deep bottom fishes. About 171 metric ton were exported in 1995 mainly to US and Japan. The 3 main species were *Etelis coruscan* (61%), *Pristimoides flavipinis* (19%) and *Epinephalus septemfasciatus* (14%).

The export quantity for the first 4 month of this year was about 35% higher compare to the same time last year. This significant increase was not a result of increasing in effort but rather due to a combination of some factors yet to be determined.

About 131 metric tons of fresh tuna were exported last year mainly to Japan, Hawaii and New Zealand. Frozen tuna was estimated to about 2 to 3 times higher. The research undertaken by RDA from 1991 to 1994 concluded that there is a sound resources prospects for the development of small-scale longlining in the country. It also shown that small vessels would be most suitable for longline fishing for tuna in Tonga's water. Unfortunately, no particular vessel design has been identified as being ideal for Tonga.

In consequence a FAO Consultant Naval Architect carried out a Consultancy in the Kingdom to determine the most suitable vessel design for small-scale tuna longline fishing in Tonga. Presenting of his report was open to public and it attracted at least 40 representatives from private sectors.

To promote the better utilisation of the resource Ministry of Fisheries is collaboration with the Ministry of Labour and Commerce conducted 2 national training courses on fish handling and electronic navigational equipment.