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COUNTRY STATEMENT - TUVALU

FADS IN TUVALU

22ND RTMF (6TH - 10TH AUGUST 1990)

COUNTRY PAPER - TUVALU

TITLE: "FADS IN TUVALU"

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1.0 BACKGROUND

Fish Aggregating Devices (FADS) were introduced to Tuvalu in the early 1980's by an SPC Masterfisherman Mr P Taumaia following a request by Tuvalu Government. The programme was initiated in conjunction with SPC Deep-Sea Fishing Projects. FADS construction and deployment were initially experimented around the Waters of Funafuti Island, the capital of Tuvalu.

Following the success of this programme on the capital, it was extended to the other Outer-Islands of Tuvalu. During the early stages of this programme, a lot of technical and financial problems were experienced by the Division. However, through the informations, trainings, provided by various regional organisations, the implementation of the programme was greatly improved.

Since the Inroduction of this programme 20-25 Devices have been deployed throughout the country. Apart from the FADS deployed by the Division, Six FADS were deployed by JICA IN 1984-1985, following a Joint resource Survey of Tuvalu and Fiji Waters. Over the 5-6 years it was noted from datas available that most local fishermen in Tuvalu undertook their fishing activities around the Devices, and that the catches by local fishermen, both artisanal and subsistence fishermen were substantially increased.

This year the Division have alreadyt deployed three FADS on the Outer-islands as part of the Extension Services Programme to the rural fishermen and will continue to do so far the rest of the Islands.

This Division will continue to support this programme in the future. However there is a need to seriously look into ways in which we could improve the overall design's of the Devices, which are Cost-effective, and are appropriate to Tuvalu situation.

2.0 PROBLEMS/CONSTRAINTS

- Lack of financial resources to effectively undertake FAD activities.
- Substantially high cost of hard-wares and ropes.
- Non-availability of hardwares locally (we have to order from overseas)
- Lack of appropriate equipments (sounders, etc) for Fad deployment. This problem was overcommed with recent provision Extension Vessel, which is well equipped for FADS deployment.
- Insufficient technical expertise on FADS Construction design.
- There is a need to properly initiate a monitoring strategy for FADS.

3.0 DESIGNS/CONSTRUCTION

With regard to design and construction. This was being kept simple to minimise cost. We cannot afford to undertake experimental work due to financial constraints. We have to use materials (resources) which are locally available. On new designs, introduced by other countries, we have to assess them carefully, whether they are appropriate for our situation before readily adopting them.

RAFTS/BUOY

a. Three 44, gallon drums were welded together end-to-end and were bounded by reinforcing rods to prevent them from falling apart. The drums were foam-filled to increase the buoyancy and to support the weight of chains, shackles, swivels, and bridle ropes. The drums were painted with Red-lead primer several times, before being paint-coated with "rescue orange" for easy identification purposes.

A 3/4" reinforcing rod was welded all along the bottom of the drums with rings welded on to it, for chain and bridle ropes connections. A rectangular-shaped component made of 3 reinforcing rod was connected (welded) on top of buoy/rafts. This was raised five-feet above for easy identification and for battery light attachment (flashing light). (Refer to Attach 1)

BRIDLES AND HARDWARE CONNECTIONS

The main ropes used are artificial ropes, particularly polypropylene, polyester, polyethylene, and nylon ropes (all three strands). These are relatively cheap-quality ropes. We have recently utilize 8 strands braided ropes (polypropylene) as bridles, but they are very expensive. The size of the ropes used varies from 16-22mm, depends on the size of hardware available.

4.0 DEPLOYMENT METHOD

The recent provision of the Extension Vessel by Japanese Government in 1989, greatly improves FAD deployment activities. The availability of this boat also enables the Division to expand its FADs Programme to the Outer-Islands.

However, 8 years ago since the initiation of this programme, FAD deployment was a very hard task. Without proper equipments (echo sounders, lighting gears etc), and the lack of a sea-worthy ocean going vessel capable to undertake this type of work, the Division relies heavily on local knowledge and improvised techniques to identify suitable sites and depths soundings.

Approximate depths and position of FADS were located with the help of Charts, and basic Navigational equipments. Depths soundings in particular were detected by the use of an improvised "lead-line" marked at every 100m interval. Normal depths for FADS varies from 800-1000 metres and are usually positioned one mile offshore.

The actual operation (FAD deployment) was carried out from different crafts; the 28' Catamaran, and 28' FAO designed diesel powered plywood launch.

The "Cat" carries the achors (300-400kg weight) whilst the launch carries the ropes (pre connected). The "cat" would be floating around the estimated FAD position taking depth soundings, while the launch would be paying out the bridles. With one more coilf of rope left the launch would steam back to the "Cat" for connection/attachment of ropes to the anchors. As soon as right depth as obtained the weights (anchors) were "let-go" immediately. Transit bearings were taken to ensure the actual position of the Device for future maintenance and monitoring activities.

5.0 MAINTENANCE/MONITORING SCHEDULE

In the past there was no proper maintenance and montoring schedule, due to staff-shortage and lack of sea-worthy ocean-going vessel to undertake repair and maintenance done on adhoc basis.

However with recent availability of the Extension Vessel a proper maintenance schedule was established. The average life of FADS in Tuvalu ranging from 8-12 months. The longest survived FAD is 3 years, however, with proper maintenance, this will lost manuy more years to come.

Monitoring activities were recently being initiayted by the Division, with the Primary aim of assessing the Surviveability of certain ropes and hardwares presently being used.

SITES SELECTION

Sites were chosen in advance in the chart, followed by the actual surveys of the sites prior to the actual deployment.

Other factors which influence the site selection process are as follows:

- easy access by local fishermen
- flat sea-bottom
- out of normal ships traffic lanes

- should be evenly distributed around the islands
- consideration should also be given to places where strong coastal current are prevental.
- best fishing grounds (trolling)

6.0 FUTURE FADS PROGRAMME

The Division will continue to support this programme as long as it is required by local fishermen, and provided there are adequate funds to keep it going. In the meantime there is a high demand for FAD by the Outer-Island Communities.

7.0 PRIORITIES

The major priorities in the future are as follows:

- to Collaborate with regional organisation in future development of FAD Programme in the region.
- to enhance the financial support of Government and donors for FAD programme.
- to identify the best FAD design which is most appropriate for Tuvalu situation.
- to initiate/establish an effective monitoring and maintenance system.
- to train locals in FAD construction/design.
- to encourage and educate local fishermen to be more fully responsible for the Devices.