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INTERACTION BETWEEN ARTISANAL FISHERMEN AND FADS

Interaction Between Artisanal Fishermen and FADs

by

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INTRODUCTION

1. The deployment of FADs in the Pacific region continues apace and the general success of these deployments are well known to fishermen and fisheries departments alike. However, many of the deployment programmes have been reliant on the provision of funds, FAD hardware or technical assistance from regional development bodies and aid-donor nations outside the region. Traditional sources of assistance are being cut back or at least rationalised and development projects must now compete for dwindling resources.

2. The most appropriate response for fisheries departments is clearly to develop their own national capabilities for FAD deployments. Training programmes conducted by SPC MasterFishermen have developed the construction and deployment skills of local staff in many Pacific nations (eg Tonga, Vanuatu and Fiji). There remains however the need for the departments themselves to be able to develop rational FAD programmes and to be able to justify the proposed expenditure to their respective Governments. Deployment of FADs remains a relatively expensive activity, with a high risk involved due to loss of FADs through cyclones, fish-bite and human interference. Although there is some literature that defines stages in determining whether a FAD deployment programme should be developed, there is little, if any, that approaches the problem from an analytical perspective.

PROJECT BACKGROUND

3. This project is conducted under the auspices of the Fish Management Science Programme (FMSP) of the Overseas Development Administration (ODA) of the UK Government and is managed by the Marine Resources Assessment Group (MRAG) in London, UK.

4. The FMSP has been developed to promote research in developing regions that perhaps do not have the financial and technical resources to carry out such work themselves. The FMSP aims to undertake research that has potential in being generic in nature and therefore has applicability to regions rather than single nations. Following the initial development phase, utilising data sets from a number of sources, there follows the 'adaptive research' phase where the work is tested and adapted for specific country requirements.

5. This current project has two components. Firstly, two case studies have been carried out, in Vanuatu and Fiji, to gather relevant data from the two FAD programmes undertaken by these countries in cooperation with the SPC. The results from this work will then be analyzed with the aim of developing advice on what information requirements are necessary and what criteria are to be met for a FAD programme to be valid for a particular fishery. Possible criteria would include market growth rates, the proximity of suitable deployment sites, the nature of demand for tunas and trends in species composition indicating a decline in the current fishery.

CURRENT STATUS

6. The FAD deployments off Espiritu Santo, in Vanuatu, did not generate the level of interest amongst artisanal fishermen that both the SPC and the FSMP had hoped for. The failure of these deployments to attract fishermen is believed to result from the relatively low demand for FAD associated species. In addition, the majority of the fishing carried out on Santo remains a part-time activity that competes with copra-cutting and production of agricultural produce.

7. Five FADs have been deployed off the Western coast of Viti Levu, three shallow, two deep-water. The use rate of these FADs (with the exception of the local sport-fishing community) has been similarly low. The critical aspect here is that tunas have very low demand and therefore receive a low price (F\$ 0.9/KG) compared with reef and other pelagic species (F\$2.50 to F\$ 5.00/kg). Many fishermen have commented that they are unwilling to change fishing behaviour, location and gears while the current reef fishery remain profitable and while demand for reef species and certain pelagic species (Carangids, *Sphyraena* spp and *Scomberomorus commerson*) is high.

8. In the Eastern Division, two FADs were already *in situ*, some 7 n.miles off Suva Point, at the time of project commencement although one was subsequently lost and replaced in September. Use rates for these FADs has been very high, up to 18 fishermen in any one week, with local landings of tunas being almost exclusively from the two FADs. Current figures indicate that these FADs have yielded 21mt of skipjack (*Katsuwonus pelamis*) with a CPUE of 18.8 kg/hr for Mau FAD and 26.9kg/hr for Nasese FAD. These tunas are sold at the local Nubukalau Creek market to the urban population of Suva and are proving to be a significant addition to fisheries production in the area. An encouraging development is the involvement in the marketing of FAD caught fish by a local export company, FijiFish Ltd. A hand-line fishery for deep-swimming tunas has evolved to service this market, with sales of 5.4mt of Yellowfin tuna (*Thunnus albacares*) as well as smaller quantities of Mahi-Mahi (*Coryphaena hippurus*) and other species, since early November, 1993. The value of these sales are estimated at F\$ 21600.

9. Although there are important physical differences between the two sites, the Eastern Division is characterised by the proximity of deep-water and smaller reef-area, the different receptions given the FAD deployments indicates the need for a full understanding of the trends and demands in the local fishery before FAD deployment is to be considered. For example, an important characteristic of the Nubukalau Market in Suva is that much of the reef fish sold is 'imported' from surrounding areas such as Rewa but also from as far afield as Kadavu Island, the Lau Group and Labasa (on Vanua Levu). In other words, the local fishery cannot meet the local demand for fish, this would seem to have important implications in explaining the relative success of Suva FADs compared with those in the Western Division. At Nubukalau Creek market in Suva there are many distinct fisheries that contribute to the overall sales with each fishery appearing to have its own characteristics in terms of species composition. The range of incomes of local people, the relatively high proportion of the population in employment and the relatively high density of population in the Suva area creates a wide and diverse local demand for fish of all types and prices. Finally, collation of fisheries data from 1986 to 1993, indicates that the actual level of sales of many reef species is in rapid decline, there is therefore a need and demand for the exploitation of new fishery resources.

10. The output from the FMSP FADs project will be a package of spreadsheets that will permit users to enter readily available fisheries statistics and assess the status of their fishery and the potential success of FAD deployments.

11. Having studied the fishery with regards to various 'indicator' statistics and assuming the department wishes to proceed with a FAD programme, then the spreadsheets will also offer a facility to actually quantify hardware requirements, costs and expected returns on a site specific basis. Finally, all the outputs can be fed into a Logical Framework that can then be presented to the relevant ministry or funding agency.

12. It is hoped that during the RTMF, delegates will be available to discuss their own FAD programmes and the project would welcome any suggestions for the production of the planning tools.