

A new approach to monitoring FAD programmes

Nearshore anchored fish aggregating device (FAD) programmes are being implemented widely throughout the Pacific. Numerous agencies are involved and FADs are deployed with a wide array of overarching objectives, including climate change adaptation, reef conservation, securing food and livelihoods for Pacific Islanders. The primary objective of FAD deployment, however, is universal: to improve the efficiency of small-scale fishers in targeting tuna and other pelagic fish.

The effectiveness of FADs in achieving this objective is confirmed when talking with fishers; however few data are available in support of this. The collection of data surrounding small-scale, diversified and geographically dispersed fisheries is generally problematic, so SPC and development partners are trialling a new approach to monitor FAD programmes.

The FAD sampling design is currently being trialled in Yap State in the Federated States of Micronesia, and there are plans to replicate this in other locations in 2013. The data collection methodology involves communities and fishers who are beneficiaries of FADs, and selects data collectors from each site to champion the monitoring process.

The sampling framework collects fisheries-dependent and independent data to understand the effectiveness of FADs in improving the efficiency of fishers' fishing activities and learn whether FADs change the fishing location, and consumption and sales patterns of households that have access to FADs or FAD-caught fish. The sampling design consists of the following components:

1) **FAD deployment registry** – records details (location, FAD type, rigging components, cost and maintenance) of every FAD that is deployed. These data, when linked to catch data, can facilitate optimisation of FAD programme design, including best locations, depths and rigging.

2) **Fishing vessel identification** – identifies and collects information on all active fishing vessels (name, owner, type, general catch and effort information, and safety equipment ownership) mainly to establish indices of fishing effort.

3) **Fishing activity log** – counts the number of fishing trips, by vessel type, returning to a pre-selected landing site over a series of random periods. These data form the basis for estimating total fishing trips from a landing site — indices of effort — which, in combination with trip-level catch data, allows for an estimation of total catch.

4) **Catch and effort log sheet** – general trip-level data are collected, including financial data, while fishing effort and catch data are collected by fishing event (i.e. location and fishing method), which allows disaggregation of catch and effort data by location (i.e. at and away from FADs). These data allow us to understand the effect that FADs have on the efficiency of fishers' fishing activities (i.e. catch rate and fuel consumption).

5) **Household fishing, consumption and sales calendar** – a daily household survey that is implemented before and after FAD deployment for at least two periods of four weeks. The survey, which is completed by households in beneficiary sites, collects data daily on household fishing activity by location (e.g. reef and lagoon, FAD, open water), fish consumption by fish category (reef and pelagic), and fish sales by category (reef and pelagic). The calendar helps indicate how effective the FADs are in achieving secondary objectives, such as transferring fishing effort from the reef to pelagic fisheries and increasing income generated from the sale of tuna.

The FAD sampling design is based on the regional artisanal tuna fisheries monitoring programme that is being implemented in a number of countries, and the data collected will help inform the management of small-scale fisheries.

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Yap State FAD monitoring programme

Six nearshore, subsurface FADs were deployed in Yap State in the Federated States of Micronesia in February and March 2013. The FADs were deployed as a component of the project "Coping with Climate Change in the Pacific Islands Region", which is funded by the German government and implemented by SPC and the German Agency for International Cooperation. Local partners in this project include Yap's Marine Resources Management Division of the Department of Resources and Development, and the non-governmental organisation Yap Community Action Program.

Four landing sites have been selected for implementing the FAD monitoring framework and five data collectors have been hired to facilitate data collection. The results of this exciting inter-agency project will be reported on once sufficient data become available.