

# The development of a semi-quantitative guideline for monitoring nearshore fish aggregating devices

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*Nearshore fish aggregating devices (FADs) are just that, a device for aggregating fish in nearshore areas. Nearshore FADs have been deployed in many Pacific Island countries and territories (PICTs) as a tool to enhance food security and income for fishers and communities (Albert et al. 2014; Masu and Albert 2014; Bell et al. 2015; Cambell et al. 2016; Tilley et al. 2019), and to reduce pressure on coastal fisheries (Sokimi and Beverly 2010; Amos et al. 2014).*



Fish around a fish aggregating device (Image: William Sokimi, SPC)

In support of FAD programmes in PICTs, several manuals have been produced in the past by the Pacific Community (SPC) to provide technical details on site surveys, construction, deployment and maintenance of nearshore FADs (Anderson et al. 1996; Gates et al. 1996, 1998; Chapman et al. 2005a), as well as for fishing at them (Preston et al. 1998).

In acknowledgement of technological progress and the uptake of FAD programmes across the Pacific Islands region, an ‘Expert Consultation on Nearshore FADs’ was held by SPC in Vanuatu in June 2016 (Albert 2016), and in October 2018, a joint Food and Agriculture Organization

of the United Nations (FAO) and SPC ‘Consultation on Small-Scale Tuna Fishery Development and Associated Value-Chains in the Pacific’ was convened at SPC headquarters in New Caledonia (Gillett et al. 2018). The results of these two consultations highlight the fact that there are still issues with the deployment of nearshore FADs, and that there is limited information concerning the costs and benefits associated with FAD use, as well as suitable monitoring advice to inform national nearshore FAD programmes. Overall, there has been limited monitoring associated with nearshore FADs (Sims 1988; Chapman et al. 2005b; Albert et al. 2013, 2018; Sharp 2014). The lack of both suitable

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information and the effectiveness of nearshore FAD monitoring programmes can be attributed to geographical remoteness, the costs involved in extensive monitoring programmes in often remote areas, and the lack of appropriate data collection methodologies.

To address these issues, in May 2019, 11 participants from the Pacific Islands region came together at SPC's headquarters to participate in a joint FAO/SPC 'FAD Monitoring Think Tank'. Representatives that attended this Think Tank included Candice Guavis (Marshall Islands Marine Resources Authority), Wilson Kaesi (Fishers Association – Vanuatu), Semisi Meo (Conservation International – Fiji), Rachael Rabi (Papua New Guinea National Fisheries Authority), Meshach Sukulu (WorldFish – Solomon Islands), Mele Tauati (FAO), Peter Tiamua (Vanuatu Fisheries Department), and Sapetu Tiitii (Samoa Ministry of Fisheries and Marine Resources). The Think Tank was facilitated by Joelle Albert (WorldFish), Anne-Maree Schwarz (Consultant) and Jeff Kinch (SPC).

To prepare for discussions during the Think Tank and the development of a simple nearshore FAD monitoring guideline, a questionnaire was provided to PICT representatives at the 11<sup>th</sup> Heads of Fisheries in March 2019. This questionnaire was also provided to targeted staff at national fisheries agencies using an online survey. In total, 16 responses were received and highlighted that the top three reasons why FADs are important for PICTs were that they:

- support coastal fisheries management activities by providing alternative fishing grounds that shift fishing effort away from coral reef systems;
- enhance food security and improve nutrition; and
- increase economic returns for fishers.

During the Think Tank, the pros and cons of different methods of collecting data were discussed. Methods discussed included fish landings (catch-per-unit-effort, creel survey), household surveys, focus group discussions, key informant interviews and market surveys. Key indicators and considerations were also discussed, including the number of fishers fishing at FADs and on reefs, FAD fishing frequency and catches (number, weight, length).

As a result of the Think Tank, a semi-quantitative guideline is now being developed that covers simple and low-cost sampling protocols based around focus group discussions and key informant interviews to monitor the key elements associated with FAD programme objectives.

The semi-quantitative monitoring guideline is intended to be accessible to all national fisheries agencies even where resources for monitoring programmes are limited, and as such, is purposely focused on simple sampling and low-cost methods. It does not preclude national fisheries agencies up-scaling monitoring efforts if financial, technical and human resources are available.

It is expected that a new nearshore FAD deployment manual, which is currently being finalised, and the semi-quantitative nearshore FAD monitoring guideline will be available in the coming months. The semi-quantitative nearshore FAD monitoring guideline will then be trialled with PICTs that are participating in the FAO/Japanese International Cooperation Agency's project for enhancing livelihoods and food security through nearshore FADs in the Pacific Islands region. Other national fisheries agencies are also welcome to test the semi-quantitative nearshore FAD monitoring guideline once it is available.



A coastal fish aggregating device. (Image: William Sokimi, SPC)



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