

# NAURU NEARSHORE FAD PROJECT – POST- IMPLEMENTATION REVIEW

In mid-2007, SPC's Nearshore Fisheries Development and Training Section helped the Nauru Fisheries and Marine Resources Authority (NFMRA) deploy seven simple inshore fish aggregating devices (FADs) in waters less than 320 m deep (SPC Fisheries Newsletter #121 – April/June 2007). These FADs, funded by Taiwan (ROC), have innovative mooring systems, using grapnels instead of concrete blocks, and can be deployed from small vessels. SPC also trained local fishermen in mid-water fishing methods and arranged for an Australian boatbuilder based in Kiribati to teach local boatbuilders how to construct small one- and two-person canoes using plywood and fibreglass. The canoes weigh only 40–65 kg, making them easy to launch and take out of the water, which is especially important in places where there are no launching ramps.

The main aim of the project is to improve food security in Nauru by giving communities easy access to pelagic fish. Other likely benefits include the potential to generate income through marketing the fish and reduced pressure on other inshore fishery resources.

To monitor the ongoing results of the Nauru project, about 30 fishers were given logbooks to record the size and location of catches and the disposal of the catch — whether it was kept, given away, or sold. NFMRA was charged with collating the data, conducting interviews with fishers to collect additional

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information, and forwarding the results regularly to SPC. Accurate monitoring of the project's results is important because it will show whether this relatively small investment in community infrastructure offers new and sustainable opportunities to boost long-term food security and improve livelihoods.

Seven months after the FADs had been put in place, Michel Blanc, SPC's Nearshore Fisheries Development and Training Adviser, returned to Nauru to review the results of the project to date with NFMRA staff.

On the positive side, feedback from local fishers was very encouraging. They considered that the inshore FADs had worked well and complemented Nauru's two offshore FADs. The FADs also provided good fishing opportunities for fishermen who did not have a motorised skiff. In Nauru, there are 40–50 motorised skiffs, only about 20 of which are used regularly, while around 70 canoes are actively used for fishing. In late 2007, NFMRA Chief Executive Officer, Charleston Deiye, commented that all the FADs had yielded fish and three had large mixed schools of rainbow runner, skipjack, frigate mackerel, yellowfin tuna and wahoo.

It was therefore doubly disappointing that a survey carried out as part of the review located only one of the FADs. Five FADs were confirmed to have been lost and the remaining one could not be located, though it may still be in place. Eyewitness reports from fishermen who had used the FADs indicated that they had stayed in place for periods of between four and six



**KIR 7 one-man canoe.**

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months. Reasons for the loss of the FADs included contact with motorised vessels (“the rope was cut off by a fisherman after it got caught in his propeller”) and possibly top ropes being bitten through by sharks attracted to hooked fish entangled in the rope.

After discussions with NFMRA, it was decided to modify the various FAD designs to combat some weak points. Pressure floats will be added to the “all-wire mooring” FADs to increase the buoyancy of the flotation section. All new FADs, especially those deployed in higher traffic areas, will be equipped with markers to make them more visible to motorised vessels. The top polyester rope on the FADs will be shortened (10-m lengths were used, but only about one-third of the rope was covered with floats). The ropes will be cut to the exact length of the string of floats, which should reduce the risk of FAD loss due to shark bites, and will be covered by plastic tubing as added protection against abrasion.

These modifications are no substitute for regular maintenance, however, and the review recommended that NFMRA should secure resources, such as a fuel budget and snorkelling equipment, needed to carry out monthly inspections and maintenance of FADs. This will help prevent unnecessary losses and enable quick replacement if FADs are lost.

After the canoe-building workshop in May 2007, the four canoes that had been completed were shared between two communities. One community was making regular use of the two



**Top: KIR 6 two-man canoe.**

**Middle: Construction jig for shaping the canoe hull.**

**Bottom: Canoe hull takes shape.**

canoes it had received, while the other one appeared to be using its canoes less often because there were no easily accessible launching sites nearby and the prevailing wind conditions were unsuitable for fishing. No further canoes of the type demonstrated at the workshop had been built, though some materials and tools were available. However, canoe building seems to have become a regular activity on Nauru, with new canoes being made from flattened aluminium roofing sheets. In the longer term, the renewed popularity of canoe fishing is likely to result in more use of the FADs.

The review found that data on FAD catches had not been collected regularly, either from the log-books or through interviews, at least partly because the Coastal Section of NFMRA did not have the dedicated resources, such as transport and a computer, needed to gather and enter the data.

There were limited data available, however, including NFMRA data on catch levels for different fish species from July to September 2007, and data on catches extracted from 15 log-books at least partly filled out by fishermen. These data showed that during the four-month period between July and

October 2007, catch levels at the nearshore FADs were twice as high as catch levels at the more traditionally fished mooring buoys outside the main harbour (4147 kg compared with 2038 kg) and were comparable to catch levels at Nauru’s two off-shore FADs (5373 kg). This shows that the nearshore FADs worked well and that local fishers quickly capitalised on their introduction to Nauru.

The market value of catches made at the nearshore FADs from July to October 2007 was estimated to be around AUD21,619. The total cost of one nearshore FAD was AUD2100, which meant the value of catches at the nearshore FADs was equivalent to the cost of 10 of the FADs. Considering that seven FADs were deployed in Nauru, and that the actual level of catches was likely to have been much higher than the estimates given above, the review concluded that the nearshore FADs tested by SPC and NFMRA were cost effective.

There were no data on the disposal of catches, so the contribution of the FADs to improving livelihoods could not be estimated.

Despite the loss of at least five of the FADs, and the problems in regular collection and collation of data, the project has been a positive demonstration of the value of deploying easily accessible nearshore FADs. Fifteen recommendations were made as a result of the review. They include modifying the design of the FADs, rapidly replacing lost FADs, ensuring that all FADs are deployed in locations that are easily accessible by canoe fishers, promoting canoe building through the establishment of a revolving fund, improving data collection systems, and setting up a scholarship to enable a local postgraduate student to be based on Nauru for a year to collect and analyse daily catch data.

PRE-DEPARTURE SAFETY PROCEDURES	
THINK SAFETY AT SEA	
CANOE SAFETY CHECKLIST	
 ANCHOR AND ROPE	 SEA ANCHOR
 ALTERNATIVE PROPULSION	 COMPASS
 SIGNALLING DEVICE	 FLotation DEVICE
 WATER IN CONTAINERS	 FOOD
 FIRST AID KIT	 KNIFE
 BAILING DEVICE	 USE A WIDE BRIM HAT FOR SHADE
Five Minutes Which Can Save Your Life	
Before Going out to sea: Check the Weather Forecast	
Tell someone who cares where you are going and when you plan to return	
Make sure all safety equipment is on board	
Make sure your paddles are in good condition	
Who pays the price ... When you get lost at sea?	
Don't be a fool ... Don't get lost at sea!	

Canoe safety checklist card.

The development of a small-scale tuna fishery in Nauru fits well with the NFRMA's strategic direction and SPC, through its Nearshore Fisheries Development and Training Section, is ready to provide continuing technical assistance and advice on the FAD project.

An additional benefit of the project is that it provides a model for other Pacific countries and territories to follow. Considerable interest has already been expressed in its progress to date,

especially in relation to the potential of nearshore FADs to improve food security for vulnerable communities.



**A workshop participant with an 8 kg tuna caught using the scatter bait method.**