Cost benefit analysis of deploying Fish Aggregating Devices (FADs) in Sri Lankan coastal waters

D.S. Jayakody and S.S.C. Pieris

Fishing Technology Division, National Aquatic Resources Research and Development Agency

Three Fish Aggregation Devices (FADs) were deployed off Panadura and Galle during January-March 2003 (two FADs off Panadura and one FAD off Galle). All three FADs were constructed using bamboo sticks and the cost of construction of a single FAD was LKR 48, 000. Deployment was done with the participation of the fishing community. All FADs were deployed around 6-7 nm away from the coast at a depth of 65 to 75 m. Around 90-95 % of the fish caught closer to FADs consisted of Dolphin fish (*Coryphaena hippurus*) – (82%) and Rainbow runners (*Elagatis bipinnulata*) – (12%). FAD 1 deployed off Panadura was lost after 42 days due to collision with a ship. The FAD deployed off Galle was drifted towards deeper waters after 38 days and was unable to locate afterwards. FAD 2 deployed off Panadura was noted functioning even after 62 days of deployment. Although hand line is the recommended fishing gear to harvest fish around FADs, other fishing gears such as gillnets and ring nets (only in Galle) were also found to be operating around FADs. The estimated catch rates and the economic returns of the fishing operations conducted in association with FADs are as follows:

Table 1 : Catch rates and income levels

Craft Type	Catch rate Kg/craft/ day	Crew	Fuel cost/ Day	Total income/ day	Net income/Day	Income/ fisherman/ day
3.5 ton boats	19.6	05	-	2352	2352	470.4
17-19' FRP	19.0	03	350	2280	1930	643.3
Oru	22.4	06	-	2688	2688	448.0

- All values are in Sri Lankan Rupees (LKR)
- 100 LKR per kg of fish was considered for calculations

Table 2: Longevity, fish production and income generated by FADs

	Longevity (Days)	Fish Production (kg)	Income generated by the FAD(LKR)
Panadura FAD 1	42	4,185	418,500
Galle FAD	38	6,693	669,300
Panadura FAD 2	62	7,285	728,500

The FADs could not attract fish of the tuna group perhaps because they were deployed within the continental shelf and closer to the shore. The average aggregation time was 14 days after deployment.

If fishermen involve themselves more by extending free labour for FAD construction, lending their boats for FAD deployment, regular repairing and by contributing to the construction cost, the total cost of FADs would be reduced.

It is advisable to promote the FAD technology in selected to harvest the yet under exploited Dolphin fish and Rainbow runner resources as they are not significantly harvested by other fishing gear types.