

The Maldives Tuna Fishing Industry



In 1989, the Government of Maldives applied to the World Bank for assistance with the development of the fishing industry. MEP were part of an FAO Investment Centre team working with Government to identify the most appropriate investment project.

The Maldives fishery for skipjack tuna is the world's largest remaining pole and line fishery. Each year, up to 80,000 tonnes of skipjack tuna are landed by some 1,400 traditionally constructed, motorised, timber bait boats (dhonis). As the tuna is caught in coastal waters by day fishing operations using rod and line and live bait, it is truly dolphin friendly and of the highest quality. The unique oceanic setting of the Maldivian islands, with their large areas of reef for the production of baitfish, has enabled this sustainable fishery to proceed for many hundreds of years.

The Government was keen to develop the tuna canning capacity beyond the single existing cannery at Felivaru. However, financial analysis revealed that the proposed investment would suffer from high costs and labour issues in such a remote island environment. Instead, it was proposed to develop tuna freezing facilities which could satisfy the artisanal fishery's need for a market by freezing and exporting tuna in the most cost effective manner.

The team surveyed atolls in the north and south of Maldives to identify sites adjacent to centres of artisanal fishing for the construction of a freezing plant. Two sites were proposed - one in Gaafu Alifu atoll in the south and the other in Haa Alifuyi in the far north - and it was agreed to proceed with the southern plant as a first phase.

As labour is in short supply in the atolls, plant design was crucial. A survey of all the islands in Gaafu Alifu, Gaafu Dhaalu, Addu and Laamu atolls demonstrated that the plant could expect up to 200 tonnes of skipjack tuna on any one day, though with marked seasonality and all the usual variations of a dynamic pelagic fishery. It was decided to use brine freezing to reduce fish handling and allow greater quantities of batch freezing than could be achieved using air blast freezing. The plant was designed to have a maximum single shift freezing capacity of 100 tonnes, and a cold store capacity of 1,500 tonnes. Specifications were drawn up for four tuna collection vessels, each capable of carrying 25 tonnes and fitted with high performance refrigerated seawater (RSW) systems, to collect tuna from surrounding atolls. It was anticipated that the collector vessels would land around 60% of production, while the remaining 40% would be landed directly by fishing vessels.

With landings from up to 100 dhonis and discharge of up to 100 tonnes of fish from the collector vessels each day, as well as the export of 1,500 tonnes of frozen fish at least once a month by refrigerated cargo vessel, a dedicated harbour was required. In the delicate environment of Maldivian atolls, this needed sensitive and skilled design and planning. The coralline islands are constantly moving as the sandy structure is pushed by wave action of the alternating monsoons. Construction of fixed-point structures on the coast of such islands can interrupt natural processes and cause distortion of island shapes. In addition, all construction materials must be imported.

The resulting factory and harbour on the previously uninhabited Kooddoo island in Gaafu Alifu atoll is proving to be a great success. The plant, commissioned in 1996, has frequently processed up to 180 tonnes of tuna in 24 hours by judicious use of double shifts and collector vessel capacity. The four collector vessels buy tuna from fishing centres in the southern atolls and deliver fish at 1°C, ready for the short freeze cycle. Deliveries are made in the morning so that freezing can be completed before the local dhonis land their fish in the afternoon and evening. Careful management by the Maldives Industrial Fishing Company (MIFCO), combined with high tuna prices, has resulted in a bumper year in 1997, exceeding all production and profit targets.

MacAlister Elliott and Partners are proud to have assisted with the design and implementation of the Kooddoo plant and its vessels, and of our ongoing association with MIFCO. Another exciting MIFCO project, also with MEP assistance, is now past the preliminary planning stage and should be under way in 1999. Watch this space!