

**A Study of Artisanal Fisheries in the Galapagos Islands, Republic of Ecuador**

In recent years, the World Wildlife Fund (WWF) has provided assistance in the development of institutional and legal frameworks for improving fisheries management within the Galapagos Islands. Workshops convened by WWF have raised awareness of the potential for a market-based approach to responsible fisheries management and sustainable fishing practices. Previous workshops have focussed on the potential application of the Sustainable Fisheries Certification Standard developed by the UK-based Marine Stewardship Council (MSC).

In support of these on-going activities, WWF commissioned MacAlister Elliott and Partners to undertake the preliminary assessment of the status of artisanal fisheries in Galapagos, the aim being to provide basic information for the next workshops to be held during 1999 and help participants to draw informed conclusions regarding the requirements for, and potential benefits of, MSC certification. MSC have previously experience with fisheries and certification matters in Ecuador, having undertaken the Ecuador Outreach Programme for the MSC in October last year.

The study was conducted between January and March 1999. We contracted a Galapagos-based fisheries specialist, Mr. Oscar Aguirre Abad, to conduct the in-country part of the study. MEP's fisheries specialist, Mr. Martin Froome, travelled to the USA and undertook a survey of Miami-based importers of fish products from Ecuador. Project management and production of the study report was undertaken by MEP's senior fisheries specialist, Mr. Paul Nichols.

The artisanal fisheries in Galapagos are fundamental to the socio-economic fabric of the island communities and constitute a significant source of seafood for both the islands and the mainland. According to available data, approximately 450 fishermen operate 270 small craft, fishing with relatively low-tech gear for a range of fin-fish and shell-fish species. The most important fisheries include a vertical drop-line fishery targeting species of rock-cod or grouper (locally called 'bacalao'), principally *Mycteroperca olfax*, plus other demersal species; and a seasonal dive fishery targeting two species of rock lobster, *Panulirus penicillatus* and *P. gracilis*. Other significant fisheries target tuna and other large pelagics, mullet, chitons, coral, shark, octopus and conch. Until recently a fishery for sea-cucumbers, principally *Isostichopus fuscus*, has been an important source of income, but is currently closed due to depletion of the resource.

*M. olfax* accounts for at least 85 tonnes of the annual total of 356 tonnes of monitored landings taken by the vertical drop-line fishery, worth at least US\$384,000. Landings of *Panulirus* rock lobster tails is around 65 tonnes per season, worth at least US\$522,000.

Fishing related employment varies considerably between the islands. Isabela is the most dependent on fishing activities with 32.7% of the economically active population involved in fishing. An average total of 8.2% of the economically active population depend directly on fishing activities. There are 3 to 4 jobs created in fisheries related activities ashore for each artisanal fisherman.

Under the recently enacted Galapagos Law, an Inter-institutional Authority for Management of the Galapagos Marine Reserve (Reserva de Recursos Marinos de Galapagos) has been established which is responsible for fisheries policy and management in the islands. This body has a broad membership of stakeholders and interested parties and is effective in addressing conservation issues and the formulation of realistic management options. A Participative Management Council operates at the provincial level and comprises representatives from tourism, fishing and conservation who have responsibility to provide guidance and assistance in the management of the reserve.

The Charles Darwin Research Station (CDRS) through its Department of Marine Research and Coastal Conservation conducts applied marine fisheries research. CDRS plays a central role in formulating management options for Galapagos fisheries.

The Galapagos National Park Service (GNPS) is charged with implementation of management of the Marine Reserve. The Marine Resource Department of the GNPS is effective in conducting monitoring, control and surveillance, enforcement of management regulations and for the detection of illegal activities. GNPS also plays an important role in improving the level of education and training of fisherman and their level of organisation. Fisheries data is accessible either from the CDRS library or institutional archives. During the course of the study detailed information was made freely available by businessmen, fishermen, administrators and local leaders.

All fin-fish production is consumed within the islands or on the mainland. An important seasonal activity is the production of dry-salted fish for consumption during Easter. The rock lobster fishery has developed since the early 1960s. Rock lobster is in high demand within the islands, on the mainland and between 30,000 and 48,000 pounds of tails are exported annually, mostly to the USA. Competition with rock lobster tail product from Caribbean, Central and South American states is strong in the US market, where average size, quality and continuity of supply is perceived to be better from these sources. Galapagos rock lobster on the USA market fetches relatively low prices due to smaller average size and a poor quality image.

Tourism is the major economic activity of the islands. Consumption of seafood sourced from local fisheries and from the mainland is greatest during the tourist high seasons (December to March and from July to August). More than 70% of Galapagos fish production is purchased locally. More than 60% of the seafood imported from the mainland is consumed on tourist boats. Seafood imported from the mainland comprises 99% cultured shrimp, all of which is consumed on tour boats. Less than 20% of the rock lobster produced in Galapagos is consumed by tour boats.

Artisanal fishing co-operatives are not well structured or organised. Fishermen interest in co-operatives is lacking and fishermen appear unwilling to pay membership dues. Consequently co-operatives have not been able to develop a significant role in regard to fish handling, storage, and marketing. Past efforts to improve organisation have been dogged by disagreements and internal conflicts. Continued assistance to help organise fishermen, increase education and general awareness of marketing, conservation, environmental and other issues is a fundamental requirement.

Intermediaries (or 'middlemen') have traditionally marketed fish products to the mainland and abroad. Dry-salted fish merchants are residents of Galapagos with contacts through which they sell product on the mainland. Merchants arrive in the islands from the mainland as Easter approaches to purchase dry-salted product. This activity is not formalised or regulated in any way, as such reliable data on volumes, prices and product destination are not available.

In general, intermediaries in rock lobster marketing are residents of Galapagos and work with companies from the mainland. They receive a sales commission or a profit agreed upon unitary sale. In the majority of cases, the company provides the intermediary with working capital to prepare the boats for fishing (finance for maintenance, repairs, required equipment, meals, fuel and extras) and to purchase the product once it arrives in port. In addition, the company provides the materials for packing and shipping.

The new Special Law for the Galapagos facilitates ready adoption of a system of fisheries certification. Fishery stakeholder awareness of the MSC Standard is already well developed in Galapagos and artisanal fishermen are supportive of certification.

Two fisheries have considerable potential for certification: the vertical drop-line fishery (targeting a rock-cod and relatively few other demersal species) and the rock lobster dive fishery. The process of certification would identify major those areas where the management system where corrective action is required. This would in turn stimulate greater monitoring, control, and enforcement of regulations and consequently conservation of stocks.

The study concluded that although production from these fisheries is relatively small, certification would be assured of gaining world-wide attention. At the national level, certification would underpin the effectiveness of the participatory management process already established in Galapagos. A primary concern for artisanal fishermen is to increase their involvement and control of post-harvest handling and marketing. Ownership of cold storage, handling and distribution facilities is currently precluded due to lack of organisation and access to credit. If tourist boats undertook to purchase fish certified product only from artisanal fishermen, an internal market could develop with a weekly demand of around 4,330 kg (9,530 pounds) of fresh refrigerated fish. Fisheries certification would send a strong signal to financial institutions that artisanal fisheries in Galapagos present viable investment opportunities. This in turn could lead to fishermen themselves becoming able to gain control of post-harvest matters from the hands of the existing few merchants who currently control infrastructure, marketing and ultimately, prices.