

All together

As the experiences from Mozambique show, fisheries management regimes and institutional arrangements can work

Due to financial problems and the lack of marine/biological investigation, very little is known about the potential of marine resources accessible to artisanal fisheries in Mozambique. Furthermore, systems to monitor and evaluate the fisheries, to assess the stocks and impact of fishing effort, are weak. Since Mozambique's independence in 1975, the control of fishing activities in the small-scale fishery became the responsibility of the *Administraco Maritima*-ADMAR.

During the 1980s, the strategy for developing small-scale fisheries in Mozambique was based on the *Combinados Pesqueiros*, a quasi-government company that supplied fishing inputs and services to artisanal fishermen and marketed their surplus production. In 1987, Mozambique launched a Structural Adjustment Programme (SAP) and started a new process that tried to create more incentives and facilities to enhance the role of the private sector in the development of the national economy. As a result, a privatization process of the *Combinados'* assets and activities began.

The institutional set-up of the fisheries sector changed after the SAP and the Institute for Small Scale Fisheries Development (IDPPE) came into existence, with the responsibility to promote small-scale fisheries development in Mozambique.

As part of global political changes, a new structure for the fisheries administration was established in 1994. The institutions of the Ministry of Agriculture and Fisheries (MAP) involved in fisheries management (and which advises and gives recommendations to the MAP), are the following:

- *Direcco Nacional da Pesca* (DNP), dealing with legal aspects, mostly dealing with industrial fisheries;
- IDPPE, whose objectives are to improve knowledge about small-scale fisheries and identify development programmes;
- IIP, for biological research on the resource;
- The *Servicos Provinciais de Administraco Pesqueira* (SPAP), the state institutions in charge of monitoring and control at the provincial level, in co-ordination with the *Administraco Maritima* which is the only institution with actual field representation in all the coastal districts.

The Fisheries Master Plan approved by the Mozambique government in October 1994 sets the priorities and strategies of development to be pursued in the next years. In relation to management of small-scale fisheries, the Master Plan emphasizes the involvement of fishermen in setting up and enforcing the management regimes.

The implementation strategy towards promoting co-management arrangements implies that the first step should be to research the existing management regimes, focusing on the traditional systems in place to manage the fishery. In this respect, baseline data, as well as biological, socioeconomic, technological and other information, must be collected.

Management committee

From 1 January 1997, the *Regulamento de Pesca Maritima* came into force. This regulation sets forward a fisheries management committee, *Comisso de*

Administraco Pesqueira (CAP) that includes fishermen representatives from artisanal as well as semi-industrial and industrial sectors.

This committee is an advisory body that will meet four times a year to recommend management measures for the national fisheries.

The CAP has an advisory role to the Minister of Agriculture and Fisheries, dealing with conservation, fisheries management and regulation.

More specifically, it focuses on determining:

- fisheries quotas;
- fishing closure periods;
- maximum number of licences for the various fisheries;
- value of fisheries licences; and
- definition of protected areas.

Although many issues still need to be addressed regarding the functioning of the CAP, and the legal and institutional aspects of co-management, the committee provides a framework for further development of co-management arrangements in Mozambique.

The small-scale fishery in the Angoche and Moma districts, in Mozambique's northern province of Nampula, is characterized by a low diversity of fishing techniques, with seven per cent of the fishing units using beach seines. Drift gill-nets and hand-lines are also used.

The fleet is almost totally non-motorized, paddles and sails being the normal ways of propulsion. This high concentration of beach seines, often made of small-mesh nets, leads to an intensive exploitation of coastal fish stocks.

An artisanal fisheries survey, carried out by IDPPE in 1994, recorded a total number of 1,460 boats and 12,160 fishermen for the two districts. The area is characterized by a very high concentration of fishermen, with an average of one beach seine every 140 m of coast and around 90

fishermen per km. The breakdown of fishing units by fishing gear used is as follows:

Type of gear	Share (%)
Beach Seines	71.2
Gill-net	17.5
Hand-lines	10.4

The fishery is based on exploitation of small pelagics, mostly from the *Clupeidae* and *Engraulidae* families, and, to a lesser extent, higher-value demersals. Drying and salting-drying are the most common fish processing methods in the area and seem to be quite appropriate, given the lack of cold storage facilities and the low purchasing power of the inland populations. Smoking is less developed and the market for the product is mostly in the more coastal part of the province. There is a relatively small market for good quality fresh fish in Nampula.

With support from the International Fund for Agricultural Development (IFAD) and the OPEC Fund for International Development, the Institute for Small-scale Fisheries Development in Mozambique (IDPPE) has been implementing, since 1995, a six-year project in the area. The project was established with the overall objective of improving the level of income, employment and food security of about 9,300 fishermen and their families living in the two districts. This objective was sought to be achieved through integrated interventions in the following areas:

- artisanal fisheries development;
- establishment of financial services; and
- institutional strengthening.

Under the artisanal fisheries component, several activities were foreseen. The knowledge of fisheries resource accessible to small-scale fisheries in Mozambique is very limited.

No reliable data

The only studies done till recently focused on the stocks exploited by industrial and semi-industrial fleets and there was no

reliable data on small-scale fisheries production. The need to emphasize the study and management of the fish resource appeared clear.

A programme to improve the knowledge of fisheries resources exploited by artisanal fishermen in the project area was initiated in 1996. The core of the programme consisted of a catch assessment survey. The system was designed by IIP (the Fisheries Research Institute) with some technical assistance from the Norwegian government aid agency, NORAD. Implementation occurs in close collaboration between IIP and IDPPE. Data collection is done by the project extension workers. Complementary biological studies, on some of the main commercial species, have just been initiated, in collaboration with the Faculty of Science of the Eduardo Mondlane University.

Some other activities under the fisheries development component are aimed at supporting the diversification of fishing techniques and practices, and promoting co-management initiatives to allow for better and sustainable use of the resources.

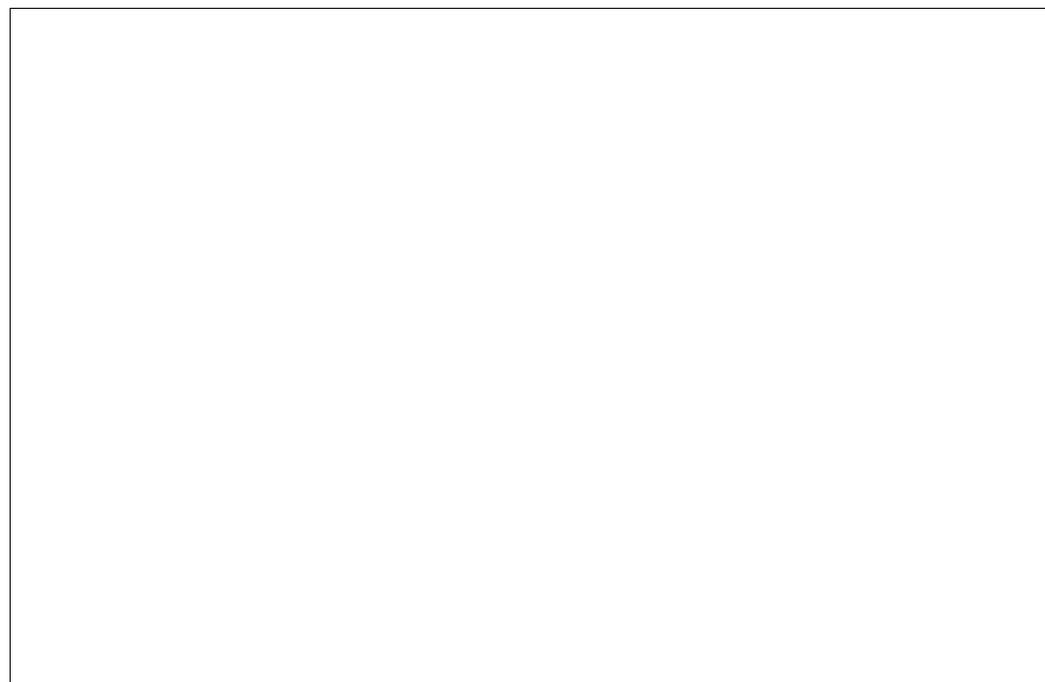
Experimental fishing activities also began in 1996 and are focused on fishing trials of different types of gears, e.g. improved drifting gill-nets for small pelagics, various types of longlines, improved

bottom-set gill-nets for medium- and large-size fish, fish aggregating devices (FADs) and improved beach seines. The experimental fishing takes place with an improved sailing boat provided by the project and also based on agreements with interested fishermen.

At the time of the project start-up, there was virtually no management of the artisanal fisheries in Mozambique. Aware of this situation, and of the lack of financial means to implement more classical fisheries regulation mechanisms, the government decided to encourage the development of co-management systems. This policy was made official in the Fisheries Master Plan.

The activities of this component of the project started with the undertaking of a study under an ICLARM/North Sea Centre-supported programme, to assess traditional fisheries management practices in the project area and the potential to promote fisheries co-management there. The main conclusion was that the situation seemed to be favourable to develop schemes that would involve fishermen and administration in managing fisheries resources. The main recommendations for short-term action were:

- the creation of local co-management committees composed of representatives of the





administration and fishermen, where fishery regulation issues would be discussed and actions to be taken agreed upon, on a consensual basis; and

- implementation of a mechanism to control access to fishery resources in the project area.

Following this, an informal co-management committee comprising representatives of ADMAR, IDPPE, IIP and fishermen, has met a few times in Angoche.

During these meetings, issues were raised in relation to the need to control fishermen and the shrimp industrial trawlers, and the use of mosquito nets at the cod end on beach seines.

Project technical staff (including a team of 10 fishery extension workers) has been working to sensitize fishermen on the need to preserve fish resources. Study tours for fishermen and representatives of the fisheries administration have been organized to Inhassoro and Malawi to build awareness on the key issues of resource management and the need to develop participatory fisheries management schemes. A training course covering basic theoretical concepts and practical experiences on fisheries co-management has been organized in Angoche, for IDPPE extension workers

and fishermen representatives. These activities have contributed towards the establishment of co-management systems in Moma and Angoche. In addition to the co-management committee, local fisheries management committees (similar to the Beach Village Committees in Malawi) have been created. During the last few months, structures of this type have been made official in three fishing centres. The fishermen of Quelelene Island have been playing a leading role in this process.

The control of access to fishing ground appears to be the key issue in the implementation of co-management systems. Fishermen of Quelelene Island *proposed* to restrict the access to their area to fishermen registered in the island. They would themselves compromise by not going fishing in other areas.

After some discussions with the project team and ADMAR, this decision, on an experimental basis, for one year, was made official through a note from ADMAR in September 1997. To date, the measure has been respected by the majority of fishermen. Another key issue to be addressed is the stabilization of the number of beach seines operating in the project area. A significant reduction is unlikely to happen in the short term.

Regulatory measures

Although there are regulatory measures on minimum mesh size for the beach

seines, enforcement is quite non-existent and, had there been any, it would have had profound social consequences.

The project is working on a proposal to amend current regulations for minimum mesh size for beach seines from 38mm to 12mm. The measure would be more acceptable to fishermen, as it would allow the catch of anchovies and other small pelagics, while permitting the escape of juveniles and larvae of commercially valuable species. Through the local fisheries management committees, there will be a chance to enforce such measure.

The present Maritime Fisheries Regulation constitutes a constraint to the development of small-scale fisheries in areas where artisanal fisheries are in direct competition with industrial and semi-industrial shrimp trawlers. According to this regulation, trawlers are allowed to operate as close as one mile from the coast, so condemning the gill-net and longline fishermen to operate very close from the shore or take the risk of losing their gear. The destruction caused by trawlers on the substrata and the fish stocks close to the coast, is quite likely going to prejudice a sustainable use of the resource not only for the artisanal, but also for the industrial fishery.

The project is also seeking to modify current marine fisheries regulations so that industrial and semi-industrial shrimp trawlers should not be allowed to operate at less than 3 miles from the shore, to prevent conflicts between these fleets and artisanal fishermen, and to reserve sufficient space for artisanal fisheries development in the open sea, at least on an experimental basis, for the Angoche and Moma districts.

Although the establishment of co-management systems has been regarded as a priority and the way forward to address problems related to the use of fisheries resources in the Fisheries Master Plan, legal and institutional frameworks to encourage these types of developments are completely lacking in Mozambique.

The current maritime fisheries regulation that has been in force since January 1997,

has established the Fisheries Management Committee, a consultative forum that advises the Ministry of Agriculture on fisheries management matters. This committee, composed of fishing industry representatives, fisheries research institutes and fisheries administrators, meet at least four times a year to jointly discuss and address fisheries management problems, and reach a consensus on the actions that need to be taken to solve them.

Artisanal fishermen's representatives have been invited to these meetings, but the experience so far shows that the main concerns have been usually biased towards problems that affect the shrimp fishing industry, since it involves bigger players and stronger interests for the country, since shrimp remains the most important export commodity. In addition to this, to date, no provisions are in place to integrate local fisheries management initiatives-for instance, the Moma and Angoche experiences-into this national framework.

Control of resources

Thus, the consultancy being prepared with the support of [he project will be a crucial development. It will help address issues related to the award of legal status to the local fisheries co-management committees. It will also contribute towards some devolution of power to fishing communities on the matter of exploitation and control of fisheries resources and for the establishment of more fisheries co-management systems in Mozambique.

This article has been written by Rui Falcao, Cassimo Marajo and Simeo Lopes of IDPPE, Mozambique