

A little help from South India

A unique exchange programme seeks to transfer artisanal fishing technologies from south India to Mozambique

In early October 1998 a group of Indians from the fisheries sector in the southern part of India landed at Maputo, the capital of Mozambique. Their mission: to help the traditional Mozambican fishermen learn to make and use fishing gear alien to Mozambique, to catch prawns and anchovies.

The idea for such an exchange programme was first mooted at the ICSF's general body meeting in Trivandrum in February 1998, when an invitee to the meeting, Simeao Lopes of the Social Development Department of IDPPE (Instituto de Desenvolvimento da Pesca de Pequena Escala), was struck by the diversity of fishing technologies available in south India. He was particularly surprised to find out, during an exposure trip to a fishing village, that artisanal fishermen in India have nets to catch prawns as well as anchovies—the trammel net and the anchovy gill-net.

Such gear were then unknown to the artisanal fishermen of Mozambique. Lopes conferred with ICSF and the South Indian Federation of Fishermen Societies (SIFFS) to work out the possibilities of sending a team of Indian fishermen to Mozambique to teach the local fishermen how to make and use these gear.

IDPPE, an autonomous body set up under the Mozambican Ministry of Fisheries to deal with issues relevant to the small-scale fishery sector, had another reason for the initiative. It was important to demonstrate that prawns could be caught by the traditional sector in Mozambique.

The absence of such artisanal fishing provided an excuse for industrial vessels (trawlers) to come very close—up to a kilometer—to the shore to catch prawns. In the process, they were destroying the

artisanal fishermen's shore-nets which extend almost a mile into the sea. This had often led to a certain amount of conflict between the industrial and artisanal sectors, and Mozambican traditional fishermen were feeling grieved. IDPPE was thus keen on providing small-scale fishermen the technology for catching prawns so that government policy could be influenced to keep the trawlers at bay.

In the northern part of Mozambique, the most important gear used is the shore seine or beach seine to catch fish in shallow waters. As productivity has fallen, the fishermen have reduced the mesh size of their nets so that, at the cod end, they are now using mosquito nets to catch small fry which are then dried for the market.

In the absence of transportation and marketing facilities, there is hardly any market for quality fish, with demand confined to the nearby towns. Only the smaller fish, including dried juveniles, which go to the nearby rural markets command a reasonable price. This has led to the overexploitation of certain varieties of fish.

In discussions with Simeao Lopes and Rui Fa1cao of IDPPE, the Indian team had been told that the Mozambicans were specifically interested in two types of gear—the trammel net and the anchovy gill net.

From the Far East

The trammel net is a three-layered net, sometimes also called the 'disco' net in south India, not itself indigenous to India, but which appeared 15 years ago from the Far East and soon become very popular with the local fishermen. The anchovy gill-net is used from canoes and catamarans. The Indian team's brief was

to train their Mozambican counterparts in using—and setting—these nets.

The final structure of the exchange programme was designed to address the following objectives:

- the exchange programme would train Mozambican fishermen in fishing with anchovy gill-nets and trammel nets;
- the programme would train Mozambican fishermen to “set” both the nets and fine-tune the settings to suit the local geography;
- the Indian team would interact with the fishermen and staff of IDPPE, and provide them with the history of fisheries interventions in economic programmes as well as other areas such as trade unionization;
- at a deeper level, IDPPE was also concerned about the inequitable nature of fisheries development in Mozambique. Some of the staff of IDPPE who had had an exposure to the dynamics of fisheries development in countries like India felt that the fishermen and their organizations in Mozambique had many things to learn from the Indian experience.

The final programme was drawn up as a tri-partite programme involving ICSEF, IDPPE and SIFFS. It was decided that a four-member team from India, consisting of two master fishermen, a translator and a documentalist would visit Mozambique in October 1998, and work through IDPPE for the actual training programme. The details of the 15-day programme in Mozambique was left to IDPPE to finalize.

At the outset, SIFFS decided to select fishermen from the southernmost district of Kanyakumari in the State of Tamil Nadu, where some of the most skilled fishermen can be found. They are competent, versatile all-rounders, proficient in a range of activities—from making their own nets to navigating under different sea conditions.

The fishermen in the team comprised Anthony Adimai, President, and P.Varghese, Secretary of the Kanyakumari District Fishermen Sangham’s Federation, a member federation of SIFFS. They are also board members of SIFFS, with Adimai being the current chairman. The other two members of the team were V. Vivekanandan, a member of ICSEF, and Satish Babu, Chief Executive of SIFFS.

First impression

At first impression, recalls Vivekanandan, the choice of the Indian fishermen seemed to have been influenced more by political than technical factors, but once the

exchange programme was over, there was absolutely no doubt that it was an excellent choice. Not only were the fishing skills of Adimai and Varghese exemplary, but their previous exposure to the outside world through their roles in SIFFS also imparted a broader vision to their perspectives.

In preparing for the exchange programme, the Indian team had long discussions centred around the suggestions of the master fishermen, Adimai and Varghese. The team also kept in mind the six-year old experience of a previous ICSF exchange programme involving the transfer of the same trammel net technology to Senegal.

Each fisherman was assigned responsibility for one net—Adimai was put in charge of the trammel net, while Varghese was responsible for the anchovy net. The team decided to take enough webbing to make nets large enough for the larger craft found in Africa, like the long pirogues. They were also prepared to demonstrate straightaway how to make and use a net.

To do so, they took along completely weaved nets of both types, ready to be cast out into the water to fish, as well as raw webbing to demonstrate the assembling of the nets during the 2-week stay in Mozambique.

Earlier, Adimai and Varghese had applied their minds to come up with pedagogic innovations—for example, to teach how to tie the knots for the trammel nets, they got the knots readied up to the penultimate stage, leaving the tying of the final knot as a demonstration lesson for the Mozambicans.

The team left Trivandrum for Maputo on 3 October 1998, and reached there a couple of days later. They carried with them about 100 kg of fishnet webbing, ropes, lead sinkers and PVC floats. They were received at Maputo by Rui Falcao.

After an initial briefing at IDPPE, the team left for the province of Nampula, in the extreme north of the country with Casim, head of field operations of IDPPE at Nampula. The team was taken to the village of Angoche, a three-hour drive

from Nampula. The team interacted mainly with staff and some fishermen of the Angoche project of IDPPE, and was first involved with setting of both the nets. This was an instructive occasion, where it was soon found that despite not having a common language, fishermen could communicate reasonably well.

At first, the IDPPE project staff in Mozambique were surprised to see a trammel net, which they claimed to have already been tried. Apparently, a European adviser had recommended it for the project and a smallish second-hand Indian disco net was procured via Vietnam. The IDPPE had been using that to conduct its own trials.

However, according to Adimai and Varghese, the Vietnamese net found in Mozambique was not state-of-the-art. Over the 15 years that it has been in India, Indian fishermen have improvised on the original disco net and changed its design parameters so that the net today is a pale imitation of its original self.

Nonetheless, the Indians did not get off to a flying start. On the very first day that they went fishing, in the province of Nampula, they caught not a single fish. The completely barren expedition was a huge shock for the Indians, especially since the disco net is a non-specific, non-discriminatory net which can catch almost anything. Since few of the IDPPE project staff were very experienced in identifying fish species, the team did not have a clue to the anchovy seasons. They soon realized they had arrived in the wrong season. In Mozambique, the monsoon starts in mid-November, and only then do the anchovy species abound.

Unfavourable conditions

At Angoche, a town with a population of over 100,000, the sea was very clear. From experience, the Indian master fishermen knew that this was an unfavourable factor. Only turbid conditions, as occur during the monsoon, lead to plenty of fish during the day. Moreover, the sea bottom at Angoche was sandy, not very hospitable for prawns. But the Indian fishermen were more or less sure that there would be other species like tuna *for* which, unfortunately, they had not brought gear.

Mozambique : a brief sketch

With a relatively narrow but long (2,500 km) coastline, Mozambique (population 17 million) is on the east coast of Africa, just above South Africa. Along almost 1,200 km of the coastline from the central part to the north, adjoining the shallow waters between Madagascar and Mozambique can be found mangroves.

However, available information suggests that these water are not as productive as the water of, say, southwest India, in the same Indian Ocean. Though its coastline is four time as long as Kerala's, Mozambique's fish landings are, on average less than a fourth of Kerala's.

An erstwhile colony of the Portugese, Mozambique became independent only as late as 1975, through an armed insurrection led by the Marxist group, the Mozambican Liberation Front (FRELIMO). When the Portugese fled, most the capital which were in their hands fled too. Post —independent Mozambique was starved of capital and FRELIMO promoted the Soviet model of planned, centrally controlled. State-run economic development. This too discouraged the private sector, and contributed to the capital flight.

Before independence, mechanized trawlers, entirely owned by Portugese capital, operated in the shallow waters of the central-northern parts of Mozambique. This are , known as the Sofala Bank, is a good prawn ground. With the flight of the Portugese and their capital, the mechanized sector collapsed.

After independence, the Mozambican government entered into joint ventures with the Soviet Union and eastern Europe for mechanized fishing by large (over 25m) industrial trawlers with onboard freezing facilities. The government also began settling up co-operatives in the fisheries sector. Fishermen got all their inputs through the local co-operatives and all the fish they caught were sold through the co-operatives. These were reasonably successful in supply and distribution.

Today, there are 200 industrial vessels and 164 semi-industrial vessels-all trawlers- employing less than 10 per cent of the Mozambican workforce. Almost 90 per cent of fishermen are in the artisanal sector, operating small-scale, non motorized wooden canoes in very shallow waters just a mile off the coast.

At another village, the Indians saw that the Mozambican fishermen were catching juveniles of the species, including anchovies, at least two months from full adulthood. The juveniles were too small for the Indians' nets.

Yet another reason for the failure was timing. Normally, in India the disco net is set before dawn. At Angoche, for various reasons, the team never managed to set out before dawn. All the three trips at Angoche were generally disappointing. The fishermen caught only small sharks and crabs in meagre quantities, and no prawns at all.

At the next centre, Moma, further to the south, the situation turned out to be much better. Having learnt from the Angoche experience, the Indians had told the IDPPE staff that on arrival at Moma, they wanted a dialogue with a group of local fishermen. This helped them form an idea about fishing grounds and seasons. The first day that they set out early, the team was rewarded with near-bumper catches

of shrimp. Much to the delight of the Indian team, the trammel net caught about 65 kg of shrimp in the three-hour fishing session.

The trammel net caught prawns in decent enough quantities to cause excitement among the IDPPE project staff. The local fishermen too were enthusiastic and curious on seeing the trammel net. They showered the Indians with questions on its catch potential, cost, availability, etc. So confident did they seem about the catching potential of the net that they decided to send three fishermen, by rotation, on the fishing trips.

Professionalism

The Mozambican fishermen were very surprised at the professionalism of Indian fishermen, their skills at navigating with the aid of star constellations, and their intuitive adaptability to the sea conditions. Gill-netting calls for specific skills of shooting and hauling the net, and, while hauling, removing the fish carefully from the net. These skills, taken for granted in Kanyakumari, India, were not

During the Marxist Soviet-inspired regime, the government bought and distributed outboard motors (OBMS), 700 of which are now in operation.

With the end, in 1992, of the 15-year civil war that erupted soon after independence, between FRELIMO and the Mozambique National Resistance (RENAMO), things began to change in Mozambique. The process was also hastened by the collapse of the old support systems represented by the Soviet Union and East European economies.

In the first multiparty general elections in 1994, FRELIMO came to power. It remains the dominant part, with RENAMO making up a sizeable opposition. FRELIMO soon set about reforming the economy, liberalising and opening it up, wooing capital, allowing goods to be freely imported and making foreign exchange much easier to obtain.

In the fisheries sector, the public sector collapsed. The co-operatives, which had not been functioning too badly, closed down. Government subsidies have disappeared and the absence of maintenance facilities have caused the OBMS to become disused. At

present, the artisanal sector is left to fend for its own, with hardly any government inputs.

Although the economy has been opened up, the response of entrepreneurs and the private sector has been slow and inadequate. In the case of fisheries, for instance, no local net-making facility has yet been set up. Since the demand is seasonal and nets are difficult to stock, businesses would enjoy only poor levels of profitability.

Moreover, the cost of capital in Mozambique is very high, with bank prime lending rates, hovering around 25 per cent, though inflation is less than 10 per cent.

Due to capital scarcity and the effects of the long civil war, Mozambique's infrastructure is extremely poor. Whatever roads there are, are mere mud roads. In some major towns, the local governments have not been able to resurface the roads for the past 12 years. The towns have no electricity and so, ice/freezing plants are immediately ruled out.

Credit in the Mozambican fishing sector is also a major problem. There are no moneylenders, nor rights to land in rural areas.

evident in Mozambique, since the artisanal fishermen there had never had to use such nets.

Though Mozambique is several thousands of kilometres away from Kanyakumari, both places share a common ocean—the Indian Ocean. The Mozambique sea is generally much shallower. Although the Indians had prepared 500-mesh depth nets, they found they needed only 300-mesh depth. They used the extra 200-mesh to increase the length of the net.

That was about the only concession they had to make, for the Indian fishermen could easily identify with the sea in Mozambique. Furthermore, there was not a single species of fish they came across that they could not identify. For them, the Mozambican sea was second home, though cultural and social conditions may have been more difficult to adapt to.

After fishing in the mornings, the team would return to the village and start teaching the Mozambican fishermen how

to make the nets. Some of the IDPPE project staff, thanks to their technical training, were quick to pick up net-making skills.

However, since there were no freezing facilities on shore, all the prawns caught had to be eaten by the Indians and Mozambicans themselves. (The trawlers that catch prawns in Mozambican waters have onboard freezing facilities.)

Wishing to learn more from the Indian experience, a return exchange programme was organized for the Mozambicans.

A five-member team from Mozambique, led by Rui Falcao, visited India in December 1998. The team comprised one fisherman, two members of the IDPPE staff, a woman representative, and a representative of the fishing supplies industry.

Daily expeditions

Daily fishing expeditions for the fisherman and IDPPE staff members were arranged to expose them to the different fishing technologies of the region. There



Initiative

were visits to fishing villages and fish markets as well as visits to fishermen societies, women's organizations, and SIFFS' ice plant and boatyards.

The group also visited the facilities of Matsyafed, the co-operative venture for fishermen started by the Kerala government. Some of the Mozambicans also visited Goa to meet manufacturers of net-making machines—and also for sentimental reasons: some of Rui's ancestors, it appears, came from Goa.

The return trip could achieve whatever gaps that existed in terms of things that the Indian team could not demonstrate in Mozambique. The team was stationed at Kanyakumari for most part, and worked closely with the two master fishermen who had originally visited Mozambique.

Since the Mozambicans have only been exposed to European large-scale businesses, the small-scale ventures of a developing country like India were eye-openers. They demonstrated the scope and power of appropriate, intermediate technology solutions.

The Mozambicans were also exposed to the institutional aspects of organizing commercial activities in fishing—new ways of organizing fishermen for, for instance, marketing and credit disbursements.

Ideally, the exchange programme should be viewed as just the very first step in a long process. If it is to continue the momentum it has generated, good follow-up will be needed.

It will be important to provide information and create institutional and other linkages for the Mozambicans to strengthen all aspects of the production and distribution system, e.g., supply lines, marketing channels for the nets, etc.

The odds are heavily stacked against any easy solution. So far, for instance, not a single meeting of fishermen's representatives from all parts of Mozambique could be organised in one central location—because there is no public transportation. Only a project like the IDPPE is even remotely equipped to bring Mozambican fishermen together.

For the Indian fishermen from Kanyakumari, apart from the learning experience gained from an exposure to a totally different economic, cultural and political system, the exchange programme was also a reaffirmation of their skills. And for SIFFS it was reassuring to learn that through Years of organisational work, a new generation of fishermen, skilled not only in fishing but also in administration and management has emerged in South India.

At one level, the exchange programme can be viewed as a mere example of the possibility of transferring 'technology from one developing country' to another. Important as that may be, the more lasting benefit, perhaps, will be the realization of the potential of artisanal fishermen.

The Indo-Mozambican exchange programme has been very useful starting point for the Mozambican fishermen and their organizations to formulate a strategy' for the development of the sector. SIFFS has found the experience very valuable and is especially satisfied that the skills from one Southern fishworker organisation could prove so important in formulating the strategy' for the development of the fisheries of an entire nation.

This article is based on an interview with V. Vivekanandan, a member of ICSF, and one the participants in the exchange programme to Mozambique.