Case Study:

Supporting small-scale fisheries through the reactivation of fish-landing centres in Timor-Leste

Overview

Through support of the Regional Fisheries Livelihoods Programme (RFLP), fish landing centres in Timor-Leste were transformed from being inactive and unused to playing a variety of important roles aimed at enhancing the management and quality of small-scale fisheries. Their new role saw them transformed into centres for fisheries data gathering and information dissemination to fishers. They also became ice production and distribution centres to improve market chains while acting as venues for training and community events.

Key lessons learned

- Despite design and siting flaws, landing centres can play a wider role by being put to use for information gathering, training etc.
- Properly utilised the landing centres can play an important role in fostering better government/fisher relations.
- A development project needs to carefully select the sites it works with and not attempt to support landing centres which are too poorly sited or which cannot realistically be made functional.
Context

In Timor-Leste, fishers land their catch at more than 160 fish landing centres scattered around the 730km coastline. Fishers usually sell their catch directly at the fish landing centres to middle-traders who transport on and sell the fish at other hamlets further away from the coast or to big traders who transport fish to the capital Dili to be sold.

In an attempt to better manage small-scale fisheries resources and to improve the quality of aquatic products, in 2008 the National Directorate of Fisheries and Aquaculture (NDFA) built nine Lotas de Pesca (the Portuguese term for fish landing and auction centres) in different locations around the coast. These were located at Oesono (Oecusse district), Vemasse (Baucau district), Suai Loro (Covalima district), Betano (Manufahi district), Adarai (Viqueque district), Lamsama (Manatuto district), Atauro (Dili), Dato (Liquica district), and in Beacou of Bobonaro district. The construction of the landing centres, which was finished the same year, was fully financed by the Government of Timor-Leste.

The National Directorate of Fisheries and Aquaculture planned that the fish landing centres would:

- Concentrate fishers thereby allowing both better control of the fishery and cost-efficient data gathering for the effective management of the fishery sector;
- Improve the quality of aquatic catch and improve food safety and ensure better post-harvest practices and processes; and,
- Facilitate market chains for aquatic catch through the provision of ice, which would increase the consumption of fish and as a result promote the fishing sector throughout the island.

However, the nine landing centres that were constructed by the NDFA never became operational, for a variety of reasons, mostly financial, but also because of the lack of in-country technical expertise. As a result when RFLP began activities in Timor-Leste in 2010 the nine centres were unused and in disrepair.

As part of its collaboration with the Government of Timor-Leste, RFLP supported the reactivation of five of the nine landing centres. It also supported a pilot ice distribution system. The ultimate purpose of the RFLP intervention was to improve the quality of fishery products and market chains, to enhance aquatic product food safety and to reduce health hazards, to add value to the catch of fishers and to make aquatic products available to inland areas of the country.

Fishers need support to improve fish quality

A fish consumption survey conducted by RFLP in Timor-Leste found average annual per capita fish consumption was only 6.1 kg which was approximately one third the Asian average of 17.8 kg.
The assessment

A technical assessment of the landing centres was conducted in 2010 by RFLP Timor-Leste staff. The assessment covered the following criteria: water quality and quantity, electricity supply, access road condition and site location in relation to the concentration of the majority of fishers who were actively involved in small-scale fisheries. Other data was also recorded to provide a broader perception of management issues of the centres and to identify possible alternative uses for them. The assessment highlighted that the reactivation of the landing centres would require continued government and in particular NDFA support, and that the initial expectations of using them as auction centres may have been too ambitious.

A second technical assessment was conducted in 2011 by an international consultant as part of a feasibility study on the potential for the hygienic production of ice. This assessment identified additional issues with the landing centres, such as unfenced premises allowing free roaming animals to enter the buildings, and inappropriately selected construction materials. In addition in the opinion of the international consultant, the design and lay-out of the structures gave no clear indication of what the structures were built for, and what specific activities the premises should host. Moreover, the smaller fish brokers operating at sub district level were not using ice at all and principally sold surplus low cash value aquatic species such as sardines, needlefish, mackerel and flying fish. This group generally distributed their products using motorbikes or bicycles for transport.

With no running water and no ice available at landing centres, fish needed to be sold quickly before it would spoil.
The RFLP intervention

The technical assessments recommended three main areas for action, i) repair and improvement works for the landing centres, ii) information sharing and capacity development, and iii) improved access to ice through a pilot ice distribution system.

Repair and renovation work at the five best landing centres

Five landing centres were selected for rehabilitation based on criteria relating to water quality and quantity, electrical supply, access roads and location in relation to fishing activities. These were Dili-Atauro, Beacou (Bobonaro), Baucau (Vemasse), Liquica and Oecusse. Rehabilitation started in August 2012 and was finalized by the end of February 2013.

Due to the progress with electrification in Timor-Leste, and because of budget limitations, the NDFA and RFLP prioritized renovation work and the installation of ice production machines at four landing centres, namely Oeccuse, Liquica, Vemasse, and Dili-Atauro, while only limited repair works were conducted for the Oeccuse and Atauro building. The rehabilitation works conducted varied with the state of the landing centre and mainly consisted of potable water and water tank installation, deepening of wells, electricity

Fishers examine information posted at a landing centre
connection, and plumbing, generator and water pump installation. At some sites local community members provided labour and assisted with the repairs.

Sharing of information and capacity building

The following actions were conducted to utilize the landing centres even before rehabilitation was completed:

- **RFLP Field Manager office**: District Field Managers, seconded to RFLP from the NDFA, were assigned to work from the site to coordinate the implementation of RFLP field activities at the local level. RFLP provided them with 3G telephone devices, which proved an effective method for regular communication with the RFLP central office in Dili.

- **Information gathering**: The fishing centres where the landing centres were located became crucial locations for data gathering including bathymetric data, fish catch and prices, as well as on traditional rules and arrangements relating to resource management. Information regarding weather forecasts, tides, and wave heights was shared with fishers at the landing centres with District Field Managers printing out information from the National Fisheries Statistical System website [www.peskador.org](http://www.peskador.org) and posting it on a notice board for fishers to read.

- **Training centres**: Awareness raising events, and training courses on engine repair, post-harvest, first-aid and other topics as well as meetings with fishers were conducted by RFLP in the landing centres.

*Fishers learn about using fish finders at a training session held at a landing centre*
Improving fishers’ access to ice first by piloting an ice production and distribution system

At the same time that the reactivation of the Lotas de Pesca was taking place, the RFLP and NDFA were studying the feasibility of a centralized system of production and distribution of ice. For this purpose, a pilot was set up at the end of 2010. Several NDFA staff were trained on hygienic practices in post-harvest, installation and maintenance of ice machines and delivery of ice.

- **Piloting the distribution of ice:** In 2011, RFLP supported the NDFA to pilot ice distribution to two landing centres: Beacou and Vemasse. The main aim was to gain information on the cost and feasibility of ice production prior to considering the launch of a nationwide ice distribution scheme. The pilot also sought to improve the capacity of fishers to chill and maintain the quality of their aquatic catch and thereby facilitate the access of fishers to wider markets. Ice was produced in the NDFA compound in Dili, using the NDFA ice machine, which the RFLP-engaged international consultant had repaired and brought back into use. Ice was delivered on a number of occasions. Fishers were eager to receive it and also indicated that they would be willing to pay for it. The ice allowed both fishers and traders to sell/distribute catch both locally and in inland areas where previously fresh fish could not be supplied. However, the pilot was not sustainable due to coordination issues amongst NDFA staff and the limited availability of refrigerated vehicles as well as financial and personnel constraints.

- **Supply and installation of ice machines directly in the landing centres:** Following the installation of electricity along the northern coastal road and due to the promising pilot ice production and distribution results, it was decided in 2012 that RFLP would procure and install ice machines at the five landing centres selected for renovation. However, due to budget limitations the procurement and installation of only four ice-machines was possible. The decision was made not to install an ice machine at Beacou landing centre due to water supply contamination and insufficient RFLP funds to rectify the problem. Ice machines procured and imported from Denmark were installed at four sites namely Liquica, Atauro-Dili, Oecusse and Vemasse in Baucau.

- **The installation started in December 2012 and was finished by the end of February 2013, under the supervision of the international RFLP consultant safety at sea engineer.** During the installation period, officers from the Fishing Industry Department of the NDFA were also trained on how to maintain and
operate the ice machines. The ice machines and the renovated landing centres were inaugurated by Mr. Mariano Assanami Sabino, Minister of Agriculture and Fisheries on 1 July 2013. In addition, 250 cool boxes were distributed to fishers so they could better utilise the ice and 50 cool boxes were directly delivered to the landing centres to store the ice after production.

Management plan

Management plans were drafted for each landing centre aimed at introducing a collaborative co-management approach and specifying which agency was responsible for what specific tasks. The management of the centres will involve NDFA staff, fisheries cooperatives and the local authorities, with each being assigned different roles to ensure sustainability and accountability. The roles were defined as:

- The NDFA will monitor the operation of the centre, gathering catch data and empowering cooperatives to enhance their income generating options.
- Cooperatives will be assigned to distribute and sell the ice, maintain the operation of ice machines, and pay electricity and other bills.
- The local authorities will provide oversight to ensure the success of the centre and the equitable distribution of benefits among fishers.

The NDFA will allocate one staff member to each landing centre. They will be responsible for ensuring their efficient operation, including maintenance the ice machines, collecting catch data, distributing ice to fishers and sharing important weather data etc.

Initially, ice will be provided free of charge in return for fishers providing fisheries related data on their catch (e.g. quantity, species composition, sale price, etc.). The landing centre coordinators will send this information to the NDFA main office for inclusion and updating of the National Fisheries Statistical System. At a later date fishers will be charged for the ice at a rate to cover the operating costs of the ice plant at the landing centre.
Lessons Learned

- Even though landing centres are not ideally located or designed their use can be maximised by providing access for fishers to services such as ice, weather, and fish price information while also being used to gather catch data and for training.
- Functioning landing centres can play a major role in enhancing fisher-government relations.
- Management plans should ideally be developed in a participatory manner and agreed before any renovation work takes place on landing centres or equipment provided.
- The renovation of the landing centres must follow a sound technical assessment to avoid problems in the future or increased costs.
- Careful consideration must be made as to whether landing centres can realistically be made operational. For some sites it may not be worthwhile doing so.
- Road conditions and lack of equipment (e.g. refrigerated trucks, ice machines) mean that decentralized ice distribution systems are not feasible in the context of Timor-Leste.
- Equipment costs in Timor-Leste are high and spare parts often unavailable. It therefore makes sense to go for quality (e.g. ice machines) over cheaper models.
- On the job mentoring (such as with the installation of ice machines) has proven to be the best strategy to implement national level capacity building. This type of support should be undertaken both by the NDFA and donors.
Recommendations

- Regular government investment should be allocated to ensure that the landing centres are maintained and that the ice distribution system continues to operate. There should be further investment in infrastructure in order to increase the number of ice production and distribution locations and the available quantities of ice.

- It is advised that no additional investment in landing centres is made until the current ones are fully operative under the guidelines of an approved Management Plan.

Ice boxes are distributed to fishers

About RFLP

The Regional Fisheries Livelihoods Programme for South and Southeast Asia (RFLP) sets out to strengthen capacity among participating small-scale fishing communities and their supporting institutions in Cambodia, Indonesia, the Philippines, Sri Lanka, Timor-Leste and Viet Nam. The four-year (2009 – 2013) RFLP is funded by the Kingdom of Spain and implemented by the Food and Agriculture Organization of the United Nations (FAO) working in close collaboration with the national authorities responsible for fisheries in participating countries.