A FAR-REACHING project funded by the Global Environment Facility (GEF), an independent financial organisation that provides project grants to developing countries, has been instrumental in reducing by-catches in shrimp fisheries by between 30 and 70%. The project Reduction of Environmental Impact from Tropical Shrimp Trawling, through the Introduction of By-catch Reduction Technologies and Change of Management is a truly international effort that is running across South America, Asia and Africa.

In Asia, the project involves Indonesia and the Philippines, plus the intergovernmental organisation SEAFDEC. Gulf states Bahrain and Iran are involved, as are Cameroon and Nigeria in Africa.

Further west, Colombia, Cuba, Costa Rica, Mexico, Trinidad & Tobago and Venezuela have all seen benefits of reducing by-catches in their shrimp fisheries. Improved trawls have been tested in almost all of these countries, resulting in lower catches of non-target species as well as savings in time and money due to lower fuel costs and improved catch quality.

"It is no secret that fishing has become an area of enormous international concern with many stocks being fished unsustainably," I'm told by Monique Barbut, new chief executive officer of the GEF which was established by governments.

"Far too many young fish of target and non-target species are being caught before they can mature. Worldwide losses, as a result of juvenile fish failing to reach marketable maturity, are thought to run into billions of dollars a year. "Currently over 60% of what is caught in the global shrimp fishery is discarded, making it among the most environmentally damaging in the world." This initiative – now in its fourth year – could be a blueprint for better use of the world’s finite natural resources, according to Achim Steiner, under secretary general. He is also the executive director of the UN Environment Programme (UNEP) which is co-ordinating the $9 million project executed by the UN Food and Agriculture Organisation (FAO).

"There are important lessons to be learnt here for other fisheries and, indeed, across a wide range of environmental challenges from forestry to energy. Creative management, technological improvements and a willingness by a wide range of partners to embrace new ideas can deliver significant improvements towards the sustainable use of economically and biologically important resources," he comments.

**FAO guidance**

FAO has been assisting shrimp fishermen, artisanal fishermen and regional fisheries organisations to introduce different by-catch reduction technologies, taking into account specific environmental conditions and the interests of participating countries. Different countries are moving at different speeds. However, preliminary results of the initiative, scheduled for completion in 2006, are now beginning to emerge in several of the participating nations, according to FAO information.

Some of the best results are coming from Mexico, where more than 2000 shrimpers operate off the Pacific and Gulf of Mexico coasts. Work carried out has included fitting research vessels with sensors to monitor the effectiveness of the new trawls and methods, while commercial shrimp trawlers are equipped with new-design fishing gears.

"The new technologies are accepted by fishermen and 140 vessels are using the new gears voluntarily," I’m told. According to the latest FAO progress report: “Preliminary results show by-catch reduction of 30 to 60%... a reduction in fuel consumption and a 20% increase in the shrimp catch.”

"Due to improvements in shrimp quality and catches, durability of the trawls as well as fuel consumption reductions, fishermen are very keen to use the new prototypes. The number of vessels that use the new designs, materials and fish eye are increasing," it adds.

Promising results are also emerging in Colombia, where the shrimp fleet numbers some 100 vessels, many working in the Caribbean. Here, fishermen have been testing three new trawl designs also fitted with by-catch reduction devices.

Preliminary results indicate that unwanted by-catch can be reduced by over one-fifth, with fuel consumption cut by a similar amount.

Trials in the Philippines have focused on boat owners and fishermen operating in the major shrimp fishing areas in Lingayen Gulf, Manila Bay, San Miguel Bay and Cabayog City in the Samar Sea. This project is being carried out in collaboration with the
QUENTIN BATES’ GEAR TALK

Nigeria’s ticket to export

Main headline

Fishing News International  December 2006

Then the book moves on to cover an array of Turtle Excluder Devices (TEDs) and By-catch Reduction Devices (BRDs), as well as Juvenile and Trash Excluder Devices (JTEDs).

This book is liberally illustrated with both photos and diagrams – and Steve Eayrs kindly supplied all of the pictures used with this article.

His book is accessible and straightforward, describing in detail the different types of TEDs and BRDs – from simple square mesh to several complex devices – and how to make them, plus some frequently asked questions and troubleshooting guides.

In addition to the discussion of different methods and the detailed technical data sheets included in the book, it is likely the most useful thing will be the practical pointers in avoiding mistakes.

These can include ‘over-turning’ TEDs, relocating a fisherman and generally optimising gear for best performance.

Southeast Asian Fisheries Development Center (SEAFC/FAO).

Preliminary results, using three types of By-catch Reduction Devices (BRDs), show cuts in unwanted fish of between 33 and almost 70%.

“This technology has the potential to reduce our catch of juveniles and other small fish, and I can only laud the efforts to involve us in activities like this and enable us to appreciate and see for ourselves its benefits,” says Marita Lakindanum, owner-operator of six shrimp trawlers.

“I can only laud the efforts to involve us in activities like this and enable us to appreciate and see for ourselves its benefits,”

Left: this NATFED grid, designed by the Australian Maritime College, is a rectangular grid using bent bars to minimise the risk of sponges and other objects catching against the bars. The bar spacing here is 60 mm so as to exclude large jellyfish.

Left: this IDisposable grid, designed by the Australian Maritime College, is a rectangluar grid using bent bars to minimise the risk of sponges and other objects catching against the bars. The bar spacing here is 60 mm so as to exclude large jellyfish.

A striking illustration of the difference a selectivity device can make. The fish in the box on the left is from a trawl with a grid, while the trawl that caught the fish in the box on the right was not fitted with any selectivity device.