

pollution. India has been chosen as the co-ordinator. The WFF has declared November 21, its foundation day, as World Fisheries Day. On this day, every year, all over the

world actions, campaigns will be organized with the view to protecting the fish resources and the fishing communities through a sustainable small fisheries.

(“Part 2: The impact of aquaculture on coastal management and fisheries” will be published in the next issue)

Indigenising The Turtle Excluder Device For Indian Waters

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Introduction

The Turtle Excluder Device, which was first tested out in US waters and then extended to the Wider Caribbean/Western Atlantic Region, is now used in as many as 43 countries. As a result, wild caught shrimp does no longer threatens the survival of sea turtles or other endangered marine species. The prototype of TED which originated in the 1960s was then known as Trawling Efficiency Device, whose sole function was to prevent/reduce the unwanted by-catch and thereby ensure a trouble-free and more profitable shrimp fishing. The TED is a metal grate of inter-spaced bars through which the shrimp can pass whereas turtles or other large by-catch escape through the opening. The TED has been found effective in saving endangered sea turtles and other marine animals by 97 percent. The Government of India have both international and national obligations to protect endangered sea turtles on its coasts. The technology transfer of TED has been effected through a Workshop-cum-Demonstration on the Georgia Jumper model from the NMFS, USA to the local artisans and trawl crew in 1996 in Orissa. However, the trawlers of Orissa coast still resist the idea of TED in the apprehension that many commercial fish species would also escape along with the turtles. In view of this, an imperative need exists for indigenising the

TED to suit the mixed catch of Indian trawlers.

Background

In the 1960s, some shrimpers of USA designed a device, called "Trawling Efficiency Device", which when fitted to the trawl-net enabled unwanted by-catch to escape through an opening while the shrimp catch was retained. When the Endangered Species Act was passed in 1973 enjoining the Federal Government of USA *inter alia* to protect the endangered sea turtles, necessary research was commissioned to study the feasibility of TED as a turtle saving device. In 1987, the National Marine Fisheries Service (NMFS), USA, introduced regulations requiring the use of TED for all mechanised shrimp trawlers in domestic warm waters. However, since sea turtles were a migratory species, it was felt that protecting them in U.S. waters alone would not be enough to protect them. As a result, in 1989, the United States passed a complementary law to the Endangered Species Act, US Public Law 101-162, Section 609, which stated that “all nations exporting shrimp to this country (US) must be certified by the US Government for protecting sea turtles from incidental death in shrimp trawl nets. Certification requires that levels of protection be comparable to those in the United States. Shrimp harvested using TEDs, manually hauled nets, or aquaculture

qualifies for certification. Shrimp from states not complying is subject to embargo.” In 1989, the Section 609 was applied only to countries where US sea turtles traveled, in the Wider Caribbean/Western Atlantic region. But a group of environmental organisations led by Earth Island Institute petitioned for applying the same regulation to all the shrimp exporting countries of the world with whom USA had a trade relation. In December 1995, a US Court of International Trade decreed in favour of the petition. As a result, as of May 1996, the embargo was extended to over 70 countries including India. The decree stated that those trading countries who do not use TEDs in their trawl nets can not export shrimp to US market. However, the US decree was challenged by four countries namely Malaysia, Thailand, Pakistan and India before WTO in October 1996 saying that the US ban on shrimp imports was against the rules of free trade under GATT. In February 1997, the WTO panel gave its interim judgement declaring the US ban illegal. The final report of the WTO in October 1998 further reinforced its interim judgement. However, the US Government have filed the formal notice of intent to appeal the WTO panel's decision. Thus, the issue may crop up again in the near future at WTO with the latter supporting the US position and thereby forcing shrimp-exporting countries to use TEDs.

Status of the Olive Ridley in India

India has international obligations to conserving sea turtles arising out 3 global agreements, Conference on International Trade in Endangered Species, Washington 1973, Convention on Conservation of Migratory Species, Bonn 1979 and Convention on Biodiversity, Rio 1992. In India the olive ridley sea turtle is listed under the Schedule 1 of the Wildlife Protection Act (1972). The Government of India have in fact taken several measures in the last two decades towards this end, including the seasonal ban of fishing along Orissa coast under Orissa Marine Fishing Regulations Act (1982) and Rules

(1983), the recent declaration of Gahirmatha as a Marine Sanctuary in October 1997, and deployment of the Coast Guard to check the illegal fishing. Despite these measures, there has been a sudden spurt in the mass mortality of sea turtles all along the Orissa coast and non-occurrence of mass nesting in the Gahirmatha consecutively for two years in 1997 and 1998.

Designs of TED

There are basically two kinds of TED, Hard TED and Soft TED. It has been observed that though the Soft TED is useful in certain conditions, it was not a foolproof device for the exclusion of turtles in most conditions. Therefore, the general preference is for Hard TEDs. There are six basic designs of Hard TED depending upon the grid size, bar spacing and construction materials, the simplest and most widely used being the Georgia Jumper model. It is an oval grid made from steel rods (or fibre glass or aluminium) and features a horizontal cross brace for added strength. The turtle escape hole can be positioned either at the top or bottom of the TED frame. Bottom opening TEDs exclude unwanted debris, shell, sponge, jelly fish, sharks and rays from the trawl, in addition to turtles. However in areas relatively clear of debris, a top opening TED is more suitable. The TED works best for turtle exclusion and shrimp retention when installed at angles between 30° to 55° from the horizontal. However, the ideal angle is 45° which can be slightly changed according to requirement. The bottom opening TEDs are attached with floats which are made of aluminum, PVC or hard plastics.

Transfer of TED Technology

The Government of USA are committed to a programme of free transfer of TED technology to the people of the countries covered under the shrimp embargo. A team of experts from NMFS, USA visited Orissa twice in 1996, first in February to Dhamra mouth and Bhitarkanika to study the area suitability, and

then in November to Paradip to impart hands-on training in manufacture, installation and operation of TED to the local artisans and fishermen. The workshop was held during 11-14 November, 1996 at Paradip in Orissa under the joint aegis of Department of Fisheries, Government of Orissa and Project Swarajya. It was attended by Marine Products Export Development Authority (MPEDA), Fishery Survey of India, National Institute of Oceanography, UNDP, and Chief Wildlife Warden, Forest Department, Orissa. In addition to the elaborate training in fabrication and fitting of TED, a practical on-sea demonstration of Georgia Jumper TED by the NMFS experts was held on 3rd day of the Workshop in the presence of the trawl owners and operators.

Reform of the TED Design

Unlike the fishermen in USA and other advanced maritime countries who go for exclusive shrimp fishing, the fishermen in Indian coasts want a mixed catch of shrimp and fish in their trawl net. The Georgia Jumper TED is meant to exclude all the by-catches including fish and retain only shrimp in the net bag. Conventional design of the Georgia Jumper therefore needs to be modified to

comply with the Indian fishermen's desire for mixed catch. A simple reform can ensure the retention of mixed catch of shrimp and fish in the trawl net along with exclusion of turtles and other large size by-catch like Dolphins, Sharks etc. Firstly, enlarging the space between the bars would allow the fish to pass through into the cod end. Second, an upper opening would help turtles escape from the net while preventing the escape of small and big fish. This is suitable for Orissa, where the problem of bottom debris is minimal. The revised design will need to be subjected to repeated field testing in different parts of the country to arrive at an appropriate design for each particular coast. When a suitable design of TED is thus formulated for a particular coast, the next step would be to demonstrate it to the community of trawlers to elicit their voluntary compliance for the device.

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A report on the Turtle Conservation Project, Sri Lanka

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Five of the world's seven species of marine turtle come ashore to nest in Sri Lanka. All five species are listed as endangered by the International Union for the Conservation of Nature (IUCN) and protected under national law. Although government legislation has protected them since 1972, they are still being consistently exploited:

- TCP surveys have revealed that for the past 30 years almost 100% of turtle nests

occurring on the South and Southwest coasts of Sri Lanka have been robbed of their eggs by poachers. If this continues, TCP speculates that the nesting population of Sri Lanka will be eliminated within the next 20 years.

- Nesting females are slaughtered for their meat.
- Turtle rookeries are being disturbed and destroyed by tourist industry development.