

30th Annual Symposium  
on Sea Turtle Biology and Conservation  
at Kala Academy, Panaji, Goa, 24-30 April 2010

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Abstract#: 3460, Subject: Fisheries & Bycatch

Title: *IS TRAWL GUARD AN ALTERNATIVE TO TED IN MIXED-CATCH MARINE FISHERIES? Or No to TED, Yes to Trawl Guard- Why?*

### **ABSTRACT**

#### ***Challenge to TED:***

The use of Turtle Excluder Device in trawl nets is now mandatory for all the maritime countries which export shrimps caught from turtle sensitive waters. Such a regulation has overall gone well with both trawl industry and turtle conservationists in all the marine environments, where, of course, trawlers engage in exclusive shrimp catch. It has however encountered stiff opposition from the trawl industry in India where most of the trawlers go for harvesting a mixed catch i.e. shrimp plus fishes of any size. The anti-TED protestors point to the huge loss of fish catch caused by the TED fitted to the trawl nets. They argue that whatever be the design of TED, there is perforce a technical limit beyond which the gap between its solid bars can't be widened enough to allow the fishes of medium to large sizes to pass into the cod end of the trawl net.

#### ***Emergence of Alternative to TED-***

In 2002 the anti-TED stir by trawl industry took a violent turn in Orissa, when the Government sought to make the use of TED compulsory in every fishing trawler so as to protect Olive ridleys visiting Gahirmatha the world' largest rookery of the said species. Coincidentally in the said year came to light a unique, alternative device, called 'Trawl Guard' invented by a local fisherman, that could address at a time to the trawl industry's priority of preventing the fish loss and also to the global mandate of preventing the accidental turtle drowning.

### ***TED & TRWAL GURD- A Comparison***

Unlike TED, which is a slightly elliptical metal grid of bars, fitted to the neck of the trawl net with an opening at its upper or lower end (called TED hole to facilitate the escape of turtle), the Trawl Guard is an inexpensive network of nylon wires, which is simply attached to the mouth of the trawl net to serve as a guard against the entry of any sizable by-catches including turtles. Further, unlike the severely constricted scope for widening the space between the TED bars which mainly accounts for loss of medium to large fishes, the size of the nylon meshes of the Trawl Guard can be manipulated to a considerable degree keeping in view the possible size of the fishes sought to be hauled in a particular ground. However, TED and Trawl Guard share a common feature too. Just as TED, which was initially a Trawling Efficiency Device having nothing to do with turtles, so was the Trawl Guard, which emerged in the aftermath of Orissa Super Cyclone of 1999 simply to safeguard the trawl net from the menace of disaster-borne sea debris that had piled up on the sea bottom. Since 2002 when the first experiment of Trawl Guard was made by an NGO, two more comparative experiments, involving Government of Orissa and WWF-India were successively carried out too. And each time while both devices were equally effective in exiting turtles, the trawler that used Trawl Guard showed a better catch of both shrimp and fish than the one that used TED.

## **Inventor of Trawl Guard**



**Mr. Anirudha Dalai (48), a self-trained Trawl Driver by occupation**

**Village- Patasundar Pur, Block- Astarang, Dist- Puri in Orissa**

*(NB- Astaranga coast in Devi mouth happens to be one of 3 major Olive ridley rookeries of Orissa)*

There is a striking resemblance between US trawler crew who invented in early 70s the Trawler Efficiency Device (subsequently called Turtle Excluder Device or TED) and Mr. Anirudha Dalai of Orissa, India, a trawl driver, who invented Trawl Guard in the wake of Super Cyclone that swept Orissa coast in October 1999. Neither of them had designed their respective devices for protecting sea turtles, but to ensure a smooth hauling by way of avoiding by-catches; however, in each case the device served not only the cause of fishery that was intended but also that of endangered turtles that was not intended.

### **On-sea Field Trials of Trawl Guard in India**

#### ***First Trial (11 Feb. 2002, Off Paradip coast, Orissa)-***

On the 3rd day (11<sup>th</sup> Feb.) of the TED Workshop (9-12 Feb 2002) at Paradip, when TED experiment in 4 vessels commissioned by the Fisheries Department was being conducted off Paradip coast, a separate experiment on Trawl Guard was conducted in the same ground in 'Maa Janani Trawler' in the presence of the trawling crews and some delegates of the Workshop. It was demonstrated by Mr. Anirudha Dalai, inventor of Trawl Guard. Mr. Rakhil Shyam Mishra, ex-

Deputy Director of Fisheries Orissa who was a Resource Person for the Workshop and who had gathered a close knowledge of the working of the new device, recommended its further trial in the interest of both trawl industry and sea turtles.

***Second Trial (18-19 Nov 2004, Off Gahirmatha & Devi, Orissa)-***

On the recommendation of Orissa State High Power Committee on Turtle Protection in its meeting held at Orissa Secretariat on 25 September 2004, it was decided to get the trawl guard field-tested in regard to its efficacy for both turtle protection and catch retention. Accordingly, a two-day comparative trial of trawling with and without Trawl Guard was held off Gahirmatha and Devi mouth coasts on 18 and 19 Nov. 2004. It was jointly organized by Project Swarajya and Dept of Fisheries in collaboration with Wildlife Wing of Govt of Orissa and trawlers associations. Dr.Chandra Sekhar Kar, Senior Wildlife Scientist representing the State Government observed the trial all through. The comparative results from the field trial showed that while both devices could effectively exit the turtles, the fish catch brought with the help of Trawl Guard was far better than the fish catch brought with the help of TED.

***Third Trial (11 Jan. 2006, Off Paradip, Orissa) –***

Sponsored by WWF for Nature-India, the field-trial of Trawl Guard was conducted on 11 Jan 2006 off Paradip coast by Project Swarajya (an NGO) involving the representatives of all the stakeholder groups including the trawl industry and a premier turtle conservation group OMRCC (Orissa Marine Resources Conservation Consortium). 3 trawling vessels, each a Stern Trawler of Sona make having 42' LOA, namely Satyam Sivam Sundaram, Jay Jagannath and Ashutosh were used for the trial voyage. The first one was fitted with Trawl Guard, the second one with TED and the third one with no device attached to it. Each trawler was provided with trawl nets, each 4-Seam High Opening Type. The Trawl Guard was made of 10mm PP rope with 12 inch x 12 inch mesh size. Between 12 noon and 4 PM each of the 3 vessels conducted 2 hauls, one haul lasting about 45 minutes, at a depth of 7 to 7.5 fathoms, and at a distance of 6 to 8 km off Paradip fishing harbour. Though a large number of Olive ridley turtles were found swimming and also mating around in the waters, none had entered the haul of any vessel.

### ***Catch comparison between TG & TED***

In the 1<sup>st</sup> Haul, the trawler with TG brought 10.1 kg of a composite fish catch, while the trawler with TED made a catch of only 2.5 kg. Thus catch by TG was more than 4 times the amount caught by TED

In the 2nd haul, the trawler with TG could catch as much as 24.9 kg while the trawler with TED only 2.5 kg., the difference between the two being almost 10 times.

### ***Catch comparison between TG & No-device***

In the first haul TG brought a catch of 10.1 kg of fish and trawler with no device about a kg less i.e. 8.9 kg

In the second haul, of course TG brought only 24.9 kg while no-device trawler a larger amount i.e. 32.1 kg., which is about 7 kg more than the amount caught by TG.

Thus, while both Trawl Guard and TED are effective in protecting turtles, the Trawl Guard is by far superior to TED in respect of retention of fish catch.

### **Is Trawl Guard legally OK?**

Media Note issued by the US Department of State on December 9, 2004 reads inter alia, “Section 609 prohibits imports of shrimp harvested in ways that are harmful to sea turtles. This import prohibition does not apply where the President certifies to Congress not later than May 1 of each year either: (1) that the harvesting nation has adopted a program governing the incidental capture of sea turtles in its commercial shrimp fishery comparable to the program in effect in the United States; or (2) that the fishing environment in the harvesting nation does not pose a threat of the incidental taking of sea turtles”.

### **Interpretation:**

If the very wording of the provision is carefully observed, it merely says that the harvesting nation has to adopt a program ‘comparable to the program in effect in the United States’. It further implies that if a device other than American TED can be demonstrated for its viability comparable to that of American TED, then the US Department of State shall raise no objection to its adoption by the harvesting nation in its commercial shrimp fishery.

Thus Trawl Guard can be conceived as a device for sea turtle protection ‘comparable to the program in effect in the United States’. Therefore, there shouldn’t be any legal hassle for any country (especially those who like India go for mixed catch of shrimp and fish in the wild) adopting Trawl Guard as an alternative to American TED.

## **Salient advantages of Trawl Guard over TED**

- Unlike TED which has its origins in USA in the context of exclusive shrimp trawling but is imposed on maritime countries world-wide including India, the Trawl Guard is completely indigenous, in the sense that it has been invented by a trawl operator of Orissa, for application in India's mixed catch (shrimp+ fish).
- Unlike the metal frame of TED which is designed and manufactured following a special method, Trawl Guard is made of only 4 kg of nylon rope, costing only less than INR 500 (about US \$ 12 only), which any ordinary fisherman can easily procure and leisurely shape by himself with a little effort.
- Unlike TED which requires the trawl net to be cut at its throat for installation of TED at a specific angle, along with a flap atop the TED hole, the Trawl Guard is fitted just at the mouth of the Trawl net, and any trawl worker can fit it.
- Unlike TED, which requires daily and meticulous maintenance, the maintenance of Trawl Guard is damn easy and simple, which any untrained trawl crew can look after.
- Unlike the TED, which is basically meant for shrimp catch and excludes fishes (medium to large size) along with turtle, the Trawl Guard is foolproof in exiting the turtles while retaining the medium to large size fishes each weighing upto 40 kg.

## **Presentation on Trawl Guard before marine fishery and turtle experts**

- National level Workshop-cum-Demonstration on TED, held at Paradip, Orissa, India, 9-12 Feb. 2002, by Project Swarajya in collaboration with Wildlife Institute of India, Dehradun under UNDP-GEF Project for Sea Turtle Protection. Mr. Anirudha Dalai, inventor of Trawl Guard showed a demo of Trawl Guard on sea on 11th Feb to a section of delegates while Mr. Rakhal Shyam Mishra, a fishery expert (retired Deputy Director of Fisheries, Orissa) and Mr. Chitta Behera, Advisor to Project Swarajya circulated a joint paper on Trawl Guard on the concluding day on 12<sup>th</sup> Feb.

- Twenty-third International Sea Turtle Symposium held at Kuala Lumpur, Malaysia in 2003. Poster Presentation and Miniature Demonstration on Trawl Guard by Chitta Behera, Advisor to Project Swarajya, Orissa, India
  
- National level Workshop on TED held at Hotel Daspalla, Vishakhapatnam, Andhra Pradesh, India on 10/11 Dec. 2003 under the joint aegis of MPEDA ( Marine Product Export Development Authority), Cochin and Wildlife Institute of India, Dehradun. Mr. Chitta Behera presented a paper 'Trawl Guard versus TED', while Mr. Anirudha Dalai, the inventor of Trawl Guard demonstrated a miniature of the device and explained the operational nitty-gritty of the new device before an assembly of wildlife scholars, TED experts, Govt. officials and leaders of trawl fisheries.
  
- Circulation of the success story of Trawl Guard Demonstration held off Paradip coast on 11 Jan 2006 to IUCN and leading dailies of India like Times of India & Indian Express by Ashis Senapati, Orissa