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The Shrimp-Turtle Dispute at the WTO: Conserving Sea Turtles and Protecting Livelihoods

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Introduction

The shrimp-turtle dispute at the World Trade Organization (WTO) between the United States and several Asian countries is the first case that involved a Multilateral Environmental Agreement (EU 2001). All species of sea turtles are included in Appendix I of the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This means that they are considered to be species threatened with extinction and no international trade is permitted in these species. They also appear on the Red Data List of threatened species of the International Union for the Conservation of Nature (IUCN).

The shrimp-turtle dispute is testimony to the emerging dynamics in international trade in fish and fish products that involve the unilateral application of environmental regulations of one country to the fishing practices of others. By leveraging on the sheer size of its domestic shrimp market, the U.S. forced shrimp exporters in the tropical belt to kow-tow to its conservation regulations for the protection of all species of sea turtles in their natural habitats. This was attempted by extending its turtle protection measures, more specifically, the use of Turtle Excluder Devices (TEDs)¹, which was mandatory to its Gulf of Mexico shrimp trawling industry, to the rest of the tropical world. In this process it also ‘rewarded’ its domestic shrimp industry by providing it with a level playing field: turtle conservation standards that were applied to the domestic industry were extended to other importing countries too. It was very similar to the dolphin-tuna conflicts between the U.S. and the Latin American countries since the 1970s when the U.S. extended its domestic dolphin mortality standards to all tuna purse-seiners in the Eastern Tropical Pacific (ETP)². In both instances, the species that the U.S. tried to protect were not the target species. If sea turtle mortality was primarily due to drowning in bottom trawls that were targeting shrimp, dolphins were drowned in purse-seines targeting adult yellowfin tuna that have the habit of aggregating with dolphins in the ETP.

History of the shrimp/sea turtle dispute

Recognizing that drowning in shrimp trawls was a major source of turtle mortality, and believing that the TEDs—developed in the 1980s, modelled after the Cannonball Shooter, a device some American trawlers used to keep jellyfish from clogging their nets (Christrup 1989)—were the most cost-effective solution to minimize turtles drowning in bottom trawls,

¹ A TED is a grid of bars installed into the neck of a shrimp trawl with an opening, either at the top or the bottom that allows shrimp to pass to the codend, while letting sea turtles escape.

² This is because dolphins aggregate with yellowfin tuna only in the Eastern Tropical Pacific.

the U.S. environmental groups successfully lobbied the U.S. government to make the use of TEDs mandatory to their shrimp trawlers in 1989. The United States, thus brought in the 1989 Section 609 of Public Law 101-162 (hereafter “Section 609”), of the Endangered Species Act of 1973 (ESA), to protect sea turtles, which required the use of TEDs in all U.S. shrimp bottom trawlers. Right from 1981, the National Marine Fisheries Service (NMFS) had begun to promote the voluntary use of TEDs among trawlers and in 1983 had even begun distributing TEDs free of cost. However, trawlers refused to install the device (Chessick, 1999).

Vessels equipped exclusively with types of gear that do not pose a threat of incidental drowning of sea turtles were not required to use TEDs. Barred beam trawls, roller trawls, wing nets, skimmer trawls and pusher-head trawls were the ones exempted. Also exempted were fishing vessels whose nets were retrieved exclusively by manual means, and fishing grounds where TEDs would be impractical because of special environmental conditions such as the presence of algae, seaweed or debris, or if it was proved that TEDs would be ineffective in protecting sea turtles. The maximum duration of such exemptions was confined to 30 days and, maximum, twice a year (Federal Register Document. 28 August, 1998 Volume 63, No. 167).

The mandatory requirement of TEDs in 1989 led to hundreds of trawlers blockading the Houston shipping channel, one of the world’s busiest, in a spontaneous protest against what they felt was a blow to their livelihoods (Chessick *ibid.*). Moreover, there were no corresponding restrictions on shrimp importers. Subsequent to this development, in response to complaints from the U.S. trawling industry and environmental groups that foreign countries who exported shrimp to the U.S. market enjoyed an unfair competitive advantage over the U.S. shrimp industry, an amendment to Section 609 was brought in 1991 to restrict imports of shrimp caught by fishing methods harmful to sea turtles into the U.S. from the Caribbean/western Atlantic region (Crouse, D. 1999). The exemptions given to the U.S. shrimp industry, however, were not extended to other countries. As a result of this amendment, the President of the United States had to annually certify to the U.S. Congress that the harvesting foreign nation has a regulatory programme and an incidental catch rate of sea turtles comparable to that of the U.S. The President further delegated this authority to the Secretary of State to make certifications pursuant to Section 609.

The U.S. issued guidelines for assessing comparability. To be found comparable the countries were either to give a commitment that in three years time all shrimp trawl vessels will be using TEDs or that they will engage in a statistically reliable and verifiable scientific programme to reduce the mortality of sea turtles. Fishing gear that did not involve any mechanical means, however, were exempted. Lack of a mechanical retrieval system was believed to restrict tow times to shorter duration, thereby limiting the threats of incidental drowning of sea turtles. The Guidelines were, however, revised in 1993 and to receive certification, countries in the Caribbean/western Atlantic region were required to use TEDs on all commercial shrimp trawl vessels by 1994, even if they had a statistically reliable and verifiable scientific programme to reduce the mortality of sea turtles.

In December 1995, in response to a petition filed by an environmental NGO called the Earth Island Institute, the U.S. Court of International Trade (CIT) found that the 1991 and 1993 Guidelines were contrary to law and directed the Department of State to expand the scope of Section 609 from the Caribbean/western Atlantic region to shrimp harvested anywhere in the wild where there was incidental catch of sea turtles. The deadline given by the CIT was 1

May 1996. Although the U.S. State Department requested the Court for a one-year extension for the worldwide enforcement of Section 609, the Court turned it down. Subsequently, the revised 1996 Guidelines, published in April 1996, extended Section 609 to shrimp harvested mechanically in all countries for export to the U.S. (WTO 1998a) The shrimp harvesting countries outside the Caribbean/western Atlantic region basically had four months after the judgment of the CIT and just one month after the publication of the revised Guidelines to comply with the Guidelines. Three types of fisheries were exempted: (1) artisanal fisheries for shrimp, especially if the fishermen harvested shrimp using manual means to retrieve nets; (2) shrimp produced from aquaculture; and (3) shrimp fisheries in cold waters where there was no risk of taking sea turtles.

To prevent foreign harvesters from fraudulently claim that their shrimp has been harvested with TEDs, the Guidelines required every shipment entering the U.S. market to be accompanied by a “Shrimp Exporter’s/Importer’s Declaration”, or Form DSP-121, indicating either that shrimp was harvested in a certified nation or that it was harvested in an uncertified nation under one of the conditions that do not adversely affect sea turtle species. For shrimp harvested in certified nations only the exporter was to certify that the shrimp was harvested in a manner indicated on the form. For shrimp harvested in uncertified nations both the exporter and a government official in the harvesting nation were to certify. The Declaration was to accompany the shipment through all stages of the export process, including any transformation of the original product and any shipment through any intermediary nation. The requirement to use TEDs was also not to be confined only to vessels harvesting for the U.S. market and was to apply to all shrimp trawling wherever there was a likelihood of intercepting sea turtles. The country of origin was to be the nation in whose waters the shrimp was harvested, whether or not the harvesting vessel was flying the flag of another nation. The U.S. Department of State was to undertake regular examinations of the procedures that governments of uncertified nations were adopting to verify the accurate completion of the DSP-121. The State Department also was to intensify efforts to negotiate agreements comparable to the Inter-American Convention for the Protection and Conservation of Sea Turtles, in the Indian Ocean region³.

Taking the shrimp-turtle dispute to WTO

In October 1996, a few of the affected countries, *viz.*, India, Malaysia, Pakistan and Thailand requested consultations with the Government of the United States regarding the ban on import of shrimp and shrimp products under Section 609 and the 1996 Guidelines. They found these laws and regulations (1) contrary to Article I, Article XI, and Article XIII of the GATT, (2) not covered by the exceptions under Article XX(b) and (g) of GATT 1994; and (3) nullifying or impairing benefits accruing to them. Consultations were held in November 1996 without resulting in a satisfactory solution to the matter. In early-1997, the disputing countries independently requested the Dispute Settlement Body (DSB) to establish a panel to examine the issue. The Panel was set up in April 1997. In its report, dated April 1998, the Panel ruled that the import ban on shrimp and shrimp products under Section 609 was not

³ The 1996 Inter-American Convention for the Protection and Conservation of Sea Turtles is the only international treaty dedicated exclusively to sea turtles, setting standards for the conservation of these ‘endangered’ animals and their habitats. The Convention will come into force on 02 May 2001. It has already received the required number of eight ratifications.

consistent with Article XI: 1 of GATT 1994⁴, and could not be justified under Article XX of GATT 1994⁵. The Panel recommended that the DSB request the United States to bring this measure into conformity with its obligations under the WTO Agreement.

The United States appealed the Panel Report in July 1998. The Appellate Body recognized the significance of protection and preservation of the environment and found nothing wrong with Members of the WTO adopting measures to protect endangered species, such as sea turtles. The Report of the Appellate Body dated 12 October 1998 reversed the findings of the Panel that the disputed Section 609 was not within the scope of measures permitted under Article XX of the GATT. It concluded that the United States measure was indeed justified under Article XX(g). But it observed that the measure contributed to arbitrary and unjustifiable discrimination between countries where the same conditions prevailed (See footnote 5). This situation arose because while countries in the Caribbean/western Atlantic region got three years to comply with Section 609, other shrimp producing countries that were required to use TEDs had only four months to comply with the measure. The latter group of countries also did not benefit from any consultation before the embargo was imposed.

Section 609 also did not permit any shrimp to be imported into the U.S. market from non-certified countries, even if the shrimp were caught in trawls with TEDs comparable in effectiveness to those required in the U.S. The Appellate Body noted that the United States required “other WTO members to adopt a regulatory programme that is not merely *comparable*, but rather *essentially the same*, as that applied to the United States shrimp trawl vessels”. The Appellate Body held, “It is not acceptable, in international trade relations, for one WTO member to use an economic embargo to *require* other Members to adopt the same comprehensive regulatory programme, to achieve a certain policy goal....” The measure, the Appellate Body observed, therefore, was not justified under Article XX of the GATT. The Appellate Body, therefore, found Section 609 acceptable, but it did not agree with the way the measure was implemented by the United States.

The Appellate Body Report was adopted by the DSB in November 1998 and the United States was given thirteen months time to implement the DSB rulings. The U.S. was expected to implement the recommendations by December 1999. The DSB, however, did not suggest ways in which the U.S. could implement its recommendations (Non-Confidential Summary Malaysia 2001).

U.S. response to the Appellate Body Report

How did the United States respond to the Appellate Body Report? In July 1999, the United States State Department published a new set of Guidelines in response to the Appellate Body

⁴ Article XI: General Elimination of Quantitative Restrictions: “no prohibitions or restrictions other than duties, taxes or other charges...”.

⁵ Article XX: *General Exceptions*. Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: (b) necessary to protect human, animal or plant life or health; (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

Report. It decided (1) to evaluate comparability of sea turtle protection programmes with greater flexibility, transparency, and predictability; the shrimp import policy was changed from one of country-by-country certification to one of shipment-by-shipment certification, thus reverting back to its position in April 1996; (2) to provide more thorough technical training in the proper use of TEDs; (3) to allow importation of shrimp products from fishermen who use TEDs in countries that remain uncertified; and (4) to seek to negotiate a multilateral agreement among shrimp fishing nations in the Indian Ocean. In January 2000 the U.S. informed the DSB that it had implemented the recommendations and rulings of the DSB. The shipment-by-shipment certification was, however, ruled violative of Section 609 “on its face” by the CIT in its judgement dated 19 July 2000⁶.

There was, however, a caveat attached to points 1 and 3. “The State Department will certify a nation with a different turtle protection programme as having a “comparable” programme if the nation demonstrates—based on empirical data supported by objective scientific studies—that its programme is as effective as the U.S. TEDs programme” (65 Federal Register 25785, 3 May 2000). To that date, there was no programme that was demonstrated to be as effective as the U.S. TEDs programme. In other words, the U.S., in the absence of other sea turtle conservation programmes as effective as the U.S. TEDs programme, continued to insist on TEDs for other shrimp exporting countries into the U.S.

Malaysia goes back to the WTO

At the DSB meeting in October 2000 Malaysia, one of the four complainants, stated that the U.S. had not implemented the DSB rulings, and requested that the matter be referred to the original panel. The 19 July judgement of CIT was also cited by Malaysia in its complaint. By not lifting the import prohibition and by not taking the necessary measures to allow the importation of certain shrimp and shrimp products in an unrestrictive manner, the U.S. has failed to comply with the DSB rulings, argued Malaysia. The DSB agreed to refer the matter to the original panel. The European Communities and the governments of Japan, Ecuador, Australia, India, Thailand, Canada, Mexico, Pakistan, and Hong Kong, China have indicated their interest to participate in the dispute as third parties.

In December 2000, the National Wildlife Federation of the United States filed a “precedent-setting” *amicus curiae* brief on behalf of environmental groups in Chile, India, Kenya and the United States⁷, requesting the Panel to reject Malaysia’s claims and arguments, and to find that the U.S. has complied with the recommendations and rulings of the DSB in this case. Although the Panel was expected to issue its report by mid-March, it has not done it so far apparently for logistical reasons. It has, by end-April 2001, provided the parties with the draft descriptive part of the panel report, for comments. Pursuant to an understanding between the United States and Malaysia, either party may request that the WTO Appellate Body review the report of the dispute settlement panel.

⁶ Turtle Island Restoration Network v Robert L. Mallett. United States Court of International Trade, Final Judgement dated 19 July 2000.

⁷ Center for Marine Conservation (U.S.), Centro Ecoceanos (Chile), Defenders of Wildlife (U.S.), Friends of the Earth, -US, Kenya Sea Turtle Committee, Marine Turtle Conservation Group of India, National Wildlife Federation (U.S.), Natural Resources Defence Council (U.S.), Operation Kachhapa (India), Project Swarajya (India), and Viskha Society for Prevention of Cruelty to Animals (India).

In the meantime, with the exception of Malaysia, which has taken a principled stand on the issue, the complainant nations finally seemed to have abandoned their resistance to Section 609. According to a press release from the U.S. Department of State dated 3 May 1999, Thailand, along with eleven other countries, was certified as having a comprehensive TEDs programme⁸. In another press release the U.S. Department of State announced certification to Pakistan on 6 July 2000. India is also developing a TED programme and a scheme to distribute TEDs free of cost is being implemented.

Sea turtles in India

According to the Report of the Expert Scientific Panel on sea turtles (Govt. of India 2000), five of the seven species of sea turtles found worldwide occur in Indian coastal waters. These are olive ridley, green turtle, hawksbill, leatherback and loggerhead. The most common sea turtle found in Indian waters is olive ridley, which is also believed to be the most abundant marine turtle in the world (WCMC/WWF 2001). It is known for mass reproductive aggregations, popularly known as *arribada*. The largest known nesting aggregations of olive ridleys in the world is in Gahirmatha, Orissa, on the eastern seaboard of India. It was made known to the outside scientific world in 1976 by an FAO/UNDP crocodile project (Pandav, Choudhury and Shanker 1998).

The earliest historical reference to the large aggregation of turtles on the Orissa coast, India, however, is from the 18th century travel accounts of an English trader, Alexander Hamilton titled 'A New Account of the East Indies'. He refers to "prodigious number of sea tortoises" resorting to lay their eggs on the Orissa Coast (Hejmadi. 2000). Gahirmatha is also the largest known rookery of any species of nesting turtles in the world. Two more rookeries are located in Orissa, *viz.*, Devi and Rushikulya, to the south of Gahirmatha. Sea turtle conservation in India thus essentially is a matter of protecting sea turtles on the East Coast of India, particularly in Gahirmatha, Devi and Rushikulya. All the five species of sea turtles found in Indian waters are protected under the Indian Wildlife Protection Act of 1972. India is also a signatory to the CITES and a party to the 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals.

Tortoises and sea turtles are both worshipped as a God and consumed as food in India. They are worshipped as the *Kurma avatar*⁹ of Vishnu, the God of Creation. The poor, irrespective of their caste and community, consume the eggs and meat of tortoises and sea turtles all over the country. In West Bengal, the biggest market for turtles and turtle eggs, for example, turtle meat is eaten on *Pausha Sankranti*, a harvest festival dedicated to Laxmi, the Goddess of Harvest and Wealth in the Hindu religion. From Orissa, since the 13th century, boatloads of olive ridley eggs were traded with the neighbouring state of West Bengal (Chadha and Kar 1999). About 100 boatloads, up to 100,000 eggs, were sold every year since 1957 (*ibid.*). The poorer segments of the population mainly consumed these eggs. Dried turtle eggs were also used as cattle-feed. The legal trade of olive ridley eggs went up to an astronomic one-and-a-half million eggs in the 1970s, according to FAO (FAO 1974, quoted in Chadha and Kar *ibid.*). The actual number of eggs traded was believed to be even higher. Assuming that one in every 1,000 eggs became an adult olive ridley, these eggs were the equivalent of

⁸ (<http://www.usconsulate.org.hk/uscn/state/1999/0503.htm>)

⁹ *Kurma* means tortoise and *avatar*, means incarnation.

150,000 adult turtles. The Orissa Government, however, banned the legal trade in eggs in 1975. Adult olive ridleys were also traded during the nesting season from Orissa to Calcutta, the capital of West Bengal, also on the East Coast. In the 1970s and 1980s, for example, an estimated 50,000 to 80,000 olive ridleys, both male and female, were sold illegally (Chadha and Kar 1999). In spite of the attempts of the Forest Department, the Indian Navy, and the Coast Guard, illegal trade in olive ridleys continued well into the 1980s.

Unlike other sea turtles, olive ridleys have an annual nesting cycle and they migrate into the Indian coastal waters by November. The *arribada* often takes place twice a year, early January and early April (Das 1998). According to turtle biologists, eggs that hatch in winter are predominantly male, and those that hatch during the warmer temperature are mainly female hatchlings¹⁰. According to the Expert Scientific Panel (Government of India 2000), between 1976 and 1999, the highest number of nestings was in 1991 (610,000), and the lowest, in 1976 and 1977 (1,50,000 each). According to a recent Reuters dispatch dated 19 March 2001, already over 1,000,000 turtles have nested this year, the highest recorded number in history. There were also years when no mass nesting took place. From the data on olive ridley nestings from 1976 to 1999 it is worth noting that there is no declining trend that can be observed in its population.

The stranding figures, or the number of carcasses, for olive ridleys in Gahirmatha was 5,000 in 1997, 16,000 in 1998 and 9,000 in 1999 (Government of India *ibid.*). According to the Central Marine Fisheries Institute (CMFRI), it was 7,500 in 1982-83 (Silas et al. 1983). Most of the dead turtles are female ones (Pandav and Choudhury 1999). The main cause of death is believed to be drowning in bottom trawls¹¹ as well as entanglement in gill-nets, according to turtle scientists. About 90 per cent of mortality occurred during December to February (Government of India *ibid.*). The mortality for the rest of India put together for all turtle species was 3,000, 2,600 and 1,900 for 1997, 1998 and 1999 respectively (Government of India *ibid.*). About 99 per cent of mortality was on the East Coast of India. This year, according to a dispatch from the United News of India dated 22 January 2001, the mortality is 6,000.

Olive ridley protection measures in Orissa, India

There are already provisions under the Marine Fishing Regulation Act of India to declare measures for conservation of fisheries resources, including declaration of closed area/season. The Orissa Marine Fishing Regulation Act, 1982 (Orissa Act 10 of 1982) and Rules, 1983 have declared a 3 nautical mile zone from the Orissa seaboard, closed to all mechanized fishing vessels presumably for this reason. With effect from 27 September 1997, specific programmes were developed to improve sea turtle conservation. Gahirmatha was declared as a Marine (Wildlife) Sanctuary under the Wildlife Protection Act of India, 1972, and fishing activities were banned in the sanctuary. The Fisheries Department expanded the scope of the Orissa Marine Fishing Regulation Act, 1982 also to protect reptiles, and issued a Notification in June 1997 prohibiting all fishing within the seaward radius of 20 km. from the Gahirmatha

¹⁰ UNDP/GOI Workshop, Orissa April 2001.

¹¹ The Government of Orissa, under the Orissa Fisheries Corporation, introduced bottom trawling in the year 1957. In the private sector, bottom trawling was undertaken since 1974. The total number of trawlers in the 1990s peaked and increased to about 880 in 1998-99.

area, round the year, to protect olive ridleys¹². With the same intent, another Notification¹³ was issued prohibiting all fishing to a seaward distance of 20 km. from the high tide line around Devi and Rushikulya river mouth, two other nesting sites in Orissa, during the period January to May in 2001 and 2002. Again, not only bottom trawls but all fishing activities, including artisanal fishing that involve only manual retrieval of nets, have been banned from the closed areas. No regulation for TEDs has been enacted as yet. However, at the valedictory meeting of the GOI/UNDP Workshop for the Development of a National Sea Turtle Conservation Action Plan at Bhubaneswar, Orissa, from the 9 to 10 April 2001, Mr. Naveen Patnaik, Chief Minister of Orissa, announced that TEDs will be made mandatory for all bottom trawls from this year.

According to Dr. E. Vivekanandan, Senior Scientist, CMFRI, a member of the Expert Scientific Panel of the Government of India on sea turtles, one of the main problems facing shrimp fisheries in Orissa is that the *arribadas* of olive ridleys occur at a time when shrimp resources are at their peak. December to April is also the best fishing season for shrimp in Orissa. The tow time used to be about one and a half to two hours in duration, which has of late gone up to two and a half hours. According to Mr. Tarun Pattanaik, President, Orissa Fish Producers Association, the closed areas around Gahirmatha, Devi and Rushikulya, about 1,200 sq. km., would constitute a significant area of the territorial waters adjacent to the Orissa coast. These closed areas are believed to deprive the fishing industry of 2,000 tonnes of shrimp, about 50 per cent of the total marine shrimp production of Orissa (excluding the *tiny* variety of shrimp). It is also believed to affect the catch potential of species like pomfret, ribbonfish, cuttlefish, sole and croaker, fish varieties with good consumer demand both in the export as well as the domestic market.

Impact of closed areas/seasons on marine fisheries

According to Mr. Pattanaik, the closed area in Gahirmatha alone is believed to affect the livelihood of 2,000 fishers in artisanal fisheries, about 7,000 fishers in mechanised gillnetting and about 2,000 people dependent on bottom trawling. In Devi, about 2,000 workers on board bottom trawlers are affected by the closed season and in Rushikulya, about 10,000 artisanal fishers are affected by the closed area/season to protect sea turtles. It is significant that while a 3-nautical mile zone is reserved for non-mechanized traditional fishing crafts under the Orissa Marine Fishing Regulation Act, 1982, no such provisions are made under the closed areas declared for sea turtle protection. For Orissa, Mr. Pattanaik estimates a potential loss of Rs. 1,000 million (about U.S.\$22 million at 2001 prices) to the fishing industry as a result of sea turtle conservation programmes. The impact, he said, has been particularly severe on the 400 bottom trawlers (all below 15 m. in length) operating from Paradip, affecting the livelihood of 10,000 fishworkers in production, processing and marketing sub-sectors. On the whole, between 40,000 to 50,000 fishworkers and fishing vessel operators have been affected in Orissa as a result of sea turtle conservation programmes, according to Mr. Pattanaik. In a state with 48 per cent people below the poverty line (annual income of U.S.\$300), and with marine fishers having an annual per capita income of less than U.S.\$200, the potential loss of livelihood opportunity as a result of losing access to fishing grounds seems quite significant. This aspect has so far been neglected and

¹² . This has now been extended until May 2002 by Notification No. 10463/FARD dated 20 May 2000.

¹³ Notification No. 10454/FARD dated 20 May 2000.

needs to be urgently looked into. A compensation package for fishing opportunities foregone should be worked out, including provisions for earning an alternative livelihood.

Resistance to turtle excluder devices (TEDs)

There are two schemes for the distribution of TEDs although both are yet to be operationalized due to resistance from the trawler operators. One is an externally funded programme for U.S.\$100,000 to distribute 1,000 TEDs (Frazier and Tiwari 1999) in Orissa alone. It is now two years since the programme started. The second, based on the recommendations of the Expert Scientific Panel, is a national project (four maritime states on the East Coast and one on the West Coast) to fabricate and distribute 600 TEDs and to train fishers in its use. It has an approved budget of U.S.\$45,000 from the Marine Products Export Development Authority (MPEDA), under the Ministry of Commerce, Government of India. The trawler operators are reluctant to use TEDs because of its potential impact on their shrimp catch. Mainly three reasons were attributed to this reluctance. First, 30 per cent of their catch is feared to get lost if TEDs are to be fitted to their trawls. The fish would escape through the exit hole provided for turtles. It is further feared that turtles or ray fish, if caught in the grill of TEDs, might block the path of fish to the cod end. Second, use of TEDs would increase the drag on the net while trawling, and this would add to their fuel costs, which are already on the higher side due to a 16 per cent diesel price hike in India in September 2000. And third, TEDs can destabilize the trawl gear in inclement weather conditions. They also fear that a royalty for the use of U.S. TED designs will have to be paid¹⁴. Dr. Hajmadi, a turtle biologist attached to the Utkal University, Orissa, is of the view that TEDs are impractical in Orissa because of the massive number of olive ridleys that aggregate during the nesting season. She thinks TEDs would be practical only for a smaller population size.

According to Mr. Pattanaik, the only conservation measures that his Association can agree to are a 3 nautical mile closed area round the year for mechanised fishing, and a closed season from 15 April to 31 May every year, for all fishing vessels. The closed season is also observed in the maritime states south of Orissa, *viz.*, Andhra Pradesh and Tamil Nadu from 2001. The Association, however, is not at all in favour of installing TEDs¹⁵. The trawler owners of Paradip do not believe that drowning in trawl nets is the single most important cause of death of sea turtles. They demanded an autopsy of sea turtles to ascertain the real cause of death. While they are being forced to comply with the TED regulation, they consider it discriminatory that fishing vessels beyond the territorial sea are not bound by any such regulation¹⁶. They also wanted an enquiry into the impact of pollution on turtle mortality¹⁷.

¹⁴ However, sources in MPEDA said there is no patent on TED models and that there is no need to pay any royalty.

¹⁵ The MPEDA sources said trawler operators in Dhamra, north of Paradip, Orissa, are willing to fit TEDs, provided they are given access to all closed areas outside the Gahirmatha sanctuary. This refers to the 3 nautical mile no-fishing zone along the Orissa seaboard for mechanised fishing vessels. There are about 100 trawlers based in Dhamra.

¹⁶ According to a CMFRI study, sea turtles were poached off the Orissa coast by Thai and Taiwanese fishing vessels in the late-1970s (Silas, et al. 1983)

¹⁷ Personal interview dated 12 April 2001 with Mr. Tarun Pattanaik and others at the Orissa Fish Producers Association, Paradip, Orissa.

Status of enforcement of turtle conservation measures

What has been the status of implementation of the sanctuary and closed area programmes? Although it is not one of their principal tasks, the Coast Guard of India has been assisting the Forest and Fisheries departments, to implement closed area regulations for the protection of sea turtles. Yet, the turtle mortality figure shows these legal measures have not significantly contributed to reduction in sea turtle mortality. During 1998, the year immediately after the legal measures to protect turtles were adopted, the highest mortality of turtles was recorded.

Several reasons have been attributed to the continued ineffectiveness of turtle conservation programmes in Orissa. Operation *Kachhapa*¹⁸, a non-governmental initiative set up in 1998 for beefing up enforcement of turtle conservation programmes in Orissa by the Wildlife Protection Society of India, with support from the Humane Society of Canada and the Barbara Delano Foundation of the United States, attributed the following reasons for ineffectual turtle conservation programmes: (1) lack of training and expertise in marine patrolling; (2) lack of funds at the implementation level, and (3) inadequate co-ordination between different departments. The Forest Department, for example, has jurisdiction within the sanctuary limits and the Fisheries Department has the jurisdiction outside the sanctuary. According to Operation *Kachhapa*, the Coast Guard of India, although effective in patrolling deeper waters, is unable to effectively patrol the shallow inshore waters because their vessels are constrained by limitations of draught.

It really remains to be seen how effectively the Orissa Government could implement the TED regulation. With abysmally poor enforcement capacity at the disposal of the Forest and Fisheries Departments, it may not be possible to make sure that all trawlers are indeed fitted with TEDs and are fishing in designated waters. Since all the trawlers are not to be simultaneously licensed, a few TEDs, repeatedly changing hands could make it deceptively appear that they are all indeed fitted with TEDs! Even if TEDs are installed it may be difficult to make sure that the fishers are using them. Ironically, because of poor enforcement capacity, trawler operators might agree to install TEDs, knowing fully well that they cannot be easily apprehended. Thus, from an enforcement point of view, the TED measure is bound to be a failure, unless there is a serious attempt to beef up enforcement capacity, which is an expensive affair. It is difficult to believe that this will be a possibility in the near future, especially if fishers feel alienated by sea turtle conservation measures. Further, in exchange for the requirement of TEDs if trawlers are given access to the 3-nautical mile zone, it could potentially be threatening to the fishing opportunities of the artisanal sector, which has been motorized and has expanded its fishing grounds up to about 6 nautical miles from the seaboard.

Even in instances where fishing vessels are apprehended it is difficult to implement turtle protection measures. At the GOI/UNDP Workshop on Sea Turtle Conservation and Management, the spokesperson of the Indian Coast Guard complained of lack of co-ordination between the Forest Department and the Coast Guard. The Coast Guard has been appointed as wildlife warden of Gahirmatha sea turtle sanctuary, with power to stop and seize fishing vessels, especially trawlers, and to hand them over to the Forest Department for

¹⁸ *Kachhapa* means 'turtle' in *Oriya*, the language of Orissa.

further action. The Forest Department has been tardy in taking possession of the seized vessels and crew. On several occasions, the Coast Guard complained, this led to inordinate delay in undertaking other official sorties. In the absence of adequate enforcement capacity, which even rich countries sometimes can ill-afford, it is moot to what extent sea turtles can be effectively protected through command and control structures. Perhaps there is need for a participatory, inclusive approach to sea turtle conservation. Without co-operation, especially from the fishing communities, it is difficult to imagine such programmes realistically making any impact.

Impact of U.S. Section 609 on Indian exports

What was the impact of the U.S. requirement for certification under Section 609 on Indian exports? A 1994 study done by the Ministry of Commerce, Government of India for United Nations Conference on Trade and Development (Bharucha 1994) had estimated a loss of U.S.\$23 million, if TEDs were to be made mandatory to Indian shrimp trawlers. Since 1996, when Section 609 was made applicable to India, United States, after Japan, continued to be the second largest market for the Indian frozen shrimp. The quantum of exports in fact increased from 16,000 tonnes in 1996-97 to about 20,000 tonnes in 1997-98 and reduced to 18,000 tonnes in 1998-99. The value increased from U.S.\$94 million in 1996-97 to U.S.\$129 million in 1997-98 and declined to U.S.\$111 million in 1998-99. The fall in quantity and value of shrimp export to the United States in 1998-99, in fact, reflected the general trend in Indian shrimp exports to Japan and the EU. The impact of Section 609 was not significant even on exports of shrimp from Orissa to the U.S. although shrimp caught in bottom trawls constitute about 50 per cent of the exports from Orissa.

In contrast, according to the *Non-Confidential Summary of the First Written Submission by Malaysia* on the issue of import prohibition of certain shrimp and shrimp products, October 2000, as a result of Section 609, Malaysian exports to the U.S. market declined from U.S.\$ 9.1 million in 1995 to U.S.\$4.86 million in 1996. Since then, Malaysian companies have ceased exporting to the United States and had to develop other export markets in Europe, Hong Kong, Australia, Japan and China. Malaysian exporters continue to suffer loss of export opportunities and market share in the United States, for wild-harvested shrimp due to the prolonged import prohibition.

Are olive ridleys a species threatened with extinction?

With regard to the nesting population of olive ridley, even methodologies to count its nesting during an *arribada* are quite complex and a reliable estimate would require the supervision of competent biologists, according to the 1995 Status Reviews of Sea Turtles Listed Under the Endangered Species Act of 1973 (Plotkin, P.T. ed 1995) There is also a need to better understand factors contributing to olive ridley mortality other than destructive coastal zone activities. For a species that undertakes trans-boundary migration, all factors that have an impact on its survival rate have to be carefully studied. The Indian Ocean has some of the busiest oil tanker routes in the world and the impact of oil pollution on these marine reptiles have to be looked into. It is also difficult to conclude if a mortality rate, on an average, of one turtle per 15 nesting ones is indeed of a higher magnitude. According to Mr. Guinea, a turtle expert consulted by the WTO Panel on the shrimp-turtle dispute, "an annual mortality of 5,000 from fish trawls and set nets from a nesting population of 600,000 with a

recruitment of 85,000 appears relatively minor” (WTO 1998a). Although the recruitment figures for olive ridleys in India are not available, perhaps what is most significant is that there does not seem to be any downward trend in the nesting population of olive ridleys in spite of trade in olive ridley eggs and live animals for at least fifty years.

While discussing the status of large whales it has been pointed out by scientists of the U.S. National Marine Fisheries Service that “One of the most difficult problems in implementing the Endangered Species Act (ESA) is that objective criteria for what constitutes being in danger of extinction is not defined in the Act or elsewhere” (Perry et al. 1999). The same applies to olive ridleys. According to communication received from the CITES Secretariat, no criteria were used at the time when the olive ridley was included in the CITES Appendices. The first Appendices were based on lists provided by the Parties and olive ridley was included in Appendix II in 1975. At the first meeting of the Conference of the Parties in Berne, Switzerland, in November 1976, the United Kingdom proposed to include all species of sea turtles in Appendix I and it was approved. At the same meeting the parties also adopted criteria—known as “Berne Criteria”—for the inclusion of species in the CITES. These Criteria were replaced with the current set of criteria—called “Everglades Criteria”—at the ninth meeting of the Conference of the Parties at Fort Lauderdale, Florida, U.S. According to the current criteria, even if it can be demonstrated that olive ridleys are not threatened with extinction it will be difficult to de-list this “charismatic” species from Appendix I because it would require the support of 66 per cent of the Parties. CITES signatories have grown from 21 in 1976 to 152 in the year 2000. A de-listing proposal would now require the support of 103 countries and it proves to be a difficult task.

In spite of poor understanding of the rationale for olive ridley conservation, however, one would still argue for better compliance with international obligations that India is party to, like the CITES and the Bonn Convention, for the conservation of sea turtles. Such compliance would be consistent with a ‘precautionary approach’, a concept that is part of international legal instruments in fisheries management like the 1995 United Nations Fish Stocks Agreement and the 1995 FAO’s Code of Conduct for Responsible Fisheries. As para 7.5.1. of FAO Code of Conduct for Responsible Fisheries states, “The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures”. However, precautionary approach should be seen as a short-term step until population characteristics are better understood to take concrete measures. Especially in a situation where the livelihood of thousands of fishworkers is at stake, such a measure should also explore concrete means to harmonize turtle conservation needs with livelihood needs of fishworkers.

Need for non-exclusionary approach to sea turtle conservation

As India has stated at the WTO *Panel’s consultation with scientific experts*, it would prefer a “non-exclusionary approach”—meaning an approach that would consider “TEDs as one of the many ways for conserving and protecting sea turtles”. Other measures, according to India, could include, by inference, measures like seasonal ban on trawling¹⁹. India’s preference to resort to an area closure to trawls in the breeding and mating grounds of sea

¹⁹ Para 5.309 WTO 1998a.

turtles was also evident from its position during the Panel hearings²⁰. A closed area for trawling was to give complete protection to sea turtles from propeller injuries.

Instead of having a no-take zone within a 20 km. radius of Gahirmatha, Devi and Rushikulya, gears, except bottom trawls, could be allowed round the year. Bottom trawls may be allowed to fish outside the sanctuary or closed areas without the use of TEDs. In addition, a comprehensive programme to understand causes of turtle mortality other than drowning in trawl gear, such as pollution, artificial illumination along the seaboard, and predation of nests should be adopted. Such a programme should also be shown to be effectively implemented and contributing to minimize turtle mortality.

Conclusion

As developing countries increase their share of world trade, and as environmental awareness further continues to grow, the exports of developing countries will be subject to a greater degree of scrutiny especially in the American and European markets. Rational or not, signs of this are already evident from the shrimp-turtle and the dolphin-tuna disputes. In this context, countries that seriously honour their commitment to international legal instruments for the protection of the environment and conservation of fisheries resources will benefit more from trade opportunities than others. Even in instances where protectionist measures are couched as environmental concerns, it will be much easier for affected countries to expose such hidden motives if they already have transparent conservation and management measures in place.

However, a single-species agenda for protection and conservation—in this instance, of sea turtles—is bound to be counterproductive if adopted in isolation especially in a multi-species, multi-cultural context with numerous fishing gear and fishing methods, and with varying dependence on the fishery for life and livelihood. As Joseph (1994) demonstrates in the context of the tuna-dolphin controversy, particularly with regard to the U.S. standards for dolphin mortality, “Prohibiting dolphin fishing would eliminate the incidental mortality of dolphins but would probably result in adverse long-term consequences for yellowfin tunas and possibly harm the ecosystem of the eastern Pacific as a whole. Changing from fishing in international waters for the large, sexually mature yellowfin usually found associated with dolphins to fishing on logs and schools for predominantly smaller, sexually immature yellowfin and skipjack tunas closer to shore would, at current levels of effort, lead to overexploitation of the resource and also give rise to political problems over access to areas under national jurisdiction.” Protecting olive ridleys without making an effort to understand the ecosystem, which they are part of, may not perhaps bode well for the chain of prey-predator relationships at sea. What is most significant in this context is to resort to an ecosystem approach to the management of marine living resources, which would, *inter alia*, include sea turtles, fish and the coastal habitat. This is the direction in which we have to turn now. To be meaningful and sustainable, such an approach should be developed in a consultative manner with all nations concerned and with all relevant stakeholders.

²⁰ Para 3.90. WTO 1998a.

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