

INTRODUCTION ON BY-CATCH OF MARINE TURTLE ISSUE

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1. INTRODUCTION

Turtles are ancient reptiles, which appeared on earth millions of years before humans and are now often endangered or threatened. Marine turtles disperse and migrate over vast distances, often crossing ocean basins, and individual turtle routinely live successively in the territories of numerous sovereign nations, as well as on the high seas.

Sea turtles are highly migratory animals and are known to inhabit the waters of the Southeast Asian region regardless of the geographical and political boundaries. Six species of marine turtle are reported to occur in the territorial waters of Southeast Asian region i.e. the olive ridley (*Lepdochelys olivacea*), the green (*Chelonia mydas*), hawksbill (*Eretmochelys*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and flatback (*Nator depressus*) turtles.

2. BY-CATCH OF MARINE TURTLE IN SHRIMP FISHERY

All life stages of marine turtles are vulnerable to human activities. Human interventions, such as beach armoring, beach nourishment, beach lighting, and beach cleaning, can reduce the survival of eggs and hatchlings on the beaches. The most important human associated source of mortality is incidental capture in shrimp trawls.

Mortality due to escalating incidental captures in coastal and oceanic fisheries constitutes one of the most challenging issues in marine turtle recovery and protection. In recent years, a raising national and international concern is focusing on evaluating the interaction between marine turtle conservation and fisheries in a more systematic and integrated way. The long line fishery, in particular, often results in considerable marine turtle mortality and financial losses (even if not yet clearly assessed), due to lowered productivity on the line for target species.

3. ISSUES ON SHRIMP EMBARGO

U.S. law prohibits imports of shrimp products harvested in a way that may be harmful to marine turtles. To avoid an embargo, a country must show that there are specific measures to prevent the incidental catch of these turtles in its shrimp fisheries. The main component of the U.S. sea conservation program is that commercial shrimp boats use a Turtle Excluder Device (TED).

Section 609 of U.S. Public Law 101-102 requires adequate measures to conserve marine turtles with respect to commercial shrimp operations. This was met through the adoption of Turtle Excluder Devices (TEDs). The law was intended to extend the protection given to marine turtles under U.S. regulations, for marine turtles habitats located beyond the U.S. borders.

The top shrimp exporters to the U.S. are India, Indonesia, Thailand, Mexico, Malaysia, Korea, and Japan. Four Asian countries – Thailand, India, Malaysia and Pakistan – have complained against the United States of America for stopping imports of wild caught shrimp into the U.S. market unless the shrimp were caught with nets fitted with TEDs.

4. INFORMATION CONCERNING THE PROBLEMS AND ISSUES IN THE ASEAN MEMBER COUNTRIES

To obtain information on the problems and issues of the ASEAN Member Countries, the SEAFDEC Secretariat has designed a simple questionnaire on four issues related to marine turtle, as follows:

- 1) Does your country have trade problems in relation to marine turtle by-catch? (shrimp embargo, trade of turtle eggs, etc.)
- 2) Does your country have specific program on marine turtle conservation and management?
- 3) Does your country use Turtle Excluder Devices (TEDs) in shrimp trawl fishery?
- 4) How many marine turtle hatcheries do you have?

The analysis was done based on the feedback from eight ASEAN-SEAFDEC Member Countries excluding Japan, Lao PDR, and Singapore. The results were summarized as follows:

4.1 Trade Problems relation to marine turtle by-catch

The United States import shrimp embargo against shrimp caught with gear not equipped with means of prevention Marine Turtle catch was unilaterally imposed upon the Southeast Asian countries on the 1st May, 1996.

Currently, shrimp fishing practices in the ASEAN Member Countries are still using without TEDs in their nets. For this reason, some member countries, like Thailand, Indonesia and Malaysia, which are the top shrimp exporting country to U.S. have a trade problem in relation to marine turtle by-catch. Other member countries have no trade problem in relation to marine turtle by-catch; because of the small amount of capture shrimp they are exporting, either because their shrimp shipments mostly come from aquaculture or because of the small size of their trawl fisheries.

4.2 Specific Program on marine turtle conservation and management

Realizing the needs to conserve and to protect the turtle population from further depletion, most of the member countries have Specific Program on marine turtle conservation and management. Most of the country fisheries' agency issued many laws and regulations to protect marine turtle and their habitat. Attempts have been made to promote education, awareness building, as well as conservation campaign programs.. However, problems in the programs still exist in all member countries, such as perturbation of nesting habitats (due to tourism and urban development along the shore line), destruction of foraging habitats (seagrass beds and coral reefs areas) as well as incidental capture of sea turtle from various fishing gears.

At present, Brunei Darussalam has seven Conservation and Management Programs, all these having been just start in 2000. Cambodia has two programs and also a collaborative program

with NGOs such as WWF, SEASTAR and CITES. Thailand conducted marine turtle conservation program since 1971. Marine Turtle Conservation Station at Mun-Nai Island in the Gulf of Thailand has been established as a pilot project under the Queen's Project. Vietnam has on-going marine turtle conservation and management program since 1990. At present, there are two Marine National Parks and nine Natural Sanctuaries in Vietnam for turtle conservation and management. Other member countries, like the Philippines, or Malaysia, also have on-going programs on marine turtle conservation and management.

4.3 Using Turtle Excluder Devices (TEDs) in shrimp trawl fishery

TED are panels of large mesh webbing or metal grids, inserted into the funnel-shaped shrimp nets. As the nets are dragged along the bottom, shrimp and other small animal pass through the TED into the cod end of the net, the narrow bag at the end of the funnel where the catch is collected. Marine turtles, sharks, and fish too large to get through the panel are deflected out and escape.

TEDs have been required for most of U.S. shrimp trawlers since 1989. Foreign vessels were required to reduce turtle mortality to levels comparable to the U.S. shrimp fleet as of 1st May 1991 under a provision of the Endangered Species Act (P.L 101 – 162, section 609) passed by congress in 1989.

The U.S. shrimp embargo posed a serious threat to the livelihood of the fishermen of the Southeast Asian Region. National governments in the region view the threat in various way but always seriously. Through SEAFDEC, the Council Directors' approval was given for the urgent consideration of practical designs of additional shrimp trawling gears, thus defecting the U.S. import ban by effecting the release and potential conservation of marine turtle.

A series of TEDs experiments were conducted in many ASEAN Member Countries and the results were disseminated to the fishermen and fisheries officers in the region. Although most of the responsible fisheries officers and some fishers in this region acknowledged and understood well the use of TEDs in shrimp trawl nets as a necessity for marine turtle conservation, almost all the member countries still do not use TEDs in their trawl fisheries. Even Thailand and Indonesia, the leading countries in fisheries in the region, are still not successful in using systematically TED in their trawl fisheries. Although some countries, like Thailand, Malaysia, and Philippines, have good extension service and technology in TEDs, most of their fishers are still refusing to use TED in their nets, due to difficulties in trawling, the fear for reduced catch, and to avoid additional operation cost. The other member countries still face a lack of technology, insufficient extension service, combined with inadequate training and awareness in using TEDs in their trawl fishery.

4.4 Marine Turtle Hatcheries

Realizing the needs to conserve and to protect the turtle population from further depletion, coupled by awareness and concern from the relevant authorities, the public and the non-governmental organizations, are giving much attention effort on turtle conservation, especially focused on one stage: the nesting and release of eggs on the beach.

As a result, management programs were orientated toward the establishment of turtle hatcheries. Hatchery operation as a conservation technique is now practiced in many member countries.

Currently, there is one hatchery in Brunei Darussalam, 8 hatcheries in Malaysia, 9 hatcheries in Myanmar, 12 hatcheries in Philippines, 20 main hatcheries and many small hatcheries in Thailand, two Turtle and Marine Hatchery Center in Vietnam, and 2 hatcheries in Indonesia. Only Cambodia has currently no hatchery.

5. CONCLUSION

- It is obvious that no single approach can be successfully emulated in every country of Southeast Asian Region to promote effective and successful marine turtle conservation. Each strategy must be unique to each country as various internal and external factors contribute toward determining the best conservation approach. However, turtle conservation should continue to involve the local communities and the government with the facilitation of NGOs. A close and functional working relationship of NGOs with the stakeholders, especially the local government and communities is a requisite for the success of turtle conservation in the region;
- In general, the development of TEDs has been successfully and effectively conducted by SEAFDEC/TD and introducing to fishermen in ASEAN Member Countries. However, it was found that the fishermen were very reluctant to use the TEDs for the following reasons.
 - a) In some part of the region such as the Gulf of Thailand, the populations of sea turtles were already reduced and a catch of turtle cannot be anticipated;
 - b) Heavy devices are sometimes dangerous to handle on board and in the water;
 - c) Fear for reducing of catch; and
 - d) Try to avoid from additional operation cost.
- Most of the ASEAN Member Countries have established national or regional conservation programs to protect marine turtles and habitats. However, some of these programs are under national jurisdiction and there is a need for greater regional cooperation to coordinate the conservation and management activities and to provide an overall picture of the stock, breeding behaviour and migratory patterns. Also, all member countries are needed to start a comprehensive research or study on turtle population, especially for the factor related to the reduction of turtle population, such as impact of fisheries, impact by collecting turtle eggs, and non-fisheries factor.