

Fish Trade and Environment

The Need for Fisheries Management Measures for Sharks and to Reduce Antibiotics Residues in Farmed Shrimps

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At the recent ASEAN-SEAFDEC Regional Meeting on 'Fish Trade and Environment', held in Bangkok from 14-16 October 2002, delegates from Brunei Darussalam, Cambodia, Indonesia, Japan, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam discussed three important thematic issues: the need to develop fisheries management measures for sharks; the by-catch of marine turtles; and antibiotics residues in farmed shrimps.

In addition to ASEAN Member Countries, represented by government fisheries policy makers and technical officers from departments of fisheries or other concerned agencies, speakers from the Food and Agriculture Organization of the United Nations (FAO), the ASEAN Fisheries Federation (AFF), Taiwan and others were also invited to the meeting.

This paper focuses on two of the three issues discussed: the need to develop fisheries management measures for sharks and antibiotics residues in farmed shrimps. The marine turtle by-catch problem will be presented in the next issue of *Fish for the People*.

Sustainable management of shark fisheries – A new challenge

The long overdue recognition of the need for sustainable management of shark fisheries in the ASEAN region was acknowledged in the meeting. Delegates from Member Countries unanimously agreed to incorporate shark fisheries management measures into their respective national fisheries management policies and framework.

Why focus on sharks?

The elasmobranch biodiversity of the ASEAN region is among the richest in the world, with at least 136 species of sharks and rays, with

Indonesia being the richest country in terms of chondrichthians species in the world. Ironically, information on shark fauna in the region is scanty and poorly documented, and the status of shark populations is still largely unknown. Shark fisheries data and statistics are likewise rather limited and open to question. These shortcomings have been due to the fact that most shark species are caught as by-catch, and in rather small quantities in the course of daily fishing operations. As a consequence, information on elasmobranchs has usually been recorded as "sharks" or 'sharks and rays,' and there is no specific information on what species and quantities of sharks and rays have been caught.

Over the past two decades, exploitation of sharks has substantially increased with the lucrative demand for shark fins, particularly appreciated in Chinese cuisine. As shark fins have traditionally been preliminarily dried, processed and kept in backyards until collected, the limited amount of sharks caught on a daily basis have masked their economic importance. Many other parts of sharks' bodies, such as the skin or the liver, are tradable commodities. Sharks should be considered as highly profitable fisheries resources.



Sharks and CITES

The Convention on International Trade in Endangered Species (CITES) was intended to promote the conservation of wild animals and plants considered as endangered species. Once species are listed in Appendixes 1, 2 or 3 of CITES, depending on the level of endangerment, the member countries of the Convention are obliged to take the required actions with respect to international trade. For example, if a species is listed in Appendix 1, international trade of that species will be prohibited.

Initially, CITES focused on rare species, mainly for terrestrial animal and plants. For such fauna and flora, the level of endangerment of a population can in most cases be easily evaluated through observation. However, due to the deterioration of the global environment, the numbers of species listed in the CITES appendixes has continually increased throughout the past decade, expanding to species that are harvested from the wild, including fisheries resources.

The latest CITES Meeting held in Santiago, Chile in November 2002, agreed to include two shark species, whale sharks (*Rhincodon typus*) and busking sharks (*Cetorhinus maximus*) in CITES Appendix 2. To do so, required the support of two-thirds of Member Countries' votes, obtained after heated debates inside and outside the meeting. As a consequence, Member Countries of CITES are obliged to take regulatory

Critical issues at the Santiago CITES Meeting

What are the criteria to be used for judging which species are endangered? Compared with terrestrial animals and plants, it is very difficult to evaluate whether a species is endangered or not, since it is rarely physically visible. In the case of sharks, no scientific data and information is available in the ASEAN region.

In addition to existing national fisheries management authorities (such as ministries and department of fisheries), other governmental structures normally responsible for CITES issues in the ASEAN region (such as ministries of the environment) will have responsibilities for the management of endangered species. Management actions by such organizations might not be limited to the species, but might also cover species caught together with the threatened ones.



Shark fins remain a highly demanded product for chinese markets.

measures on the international trade of these shark species. In addition, related measures must also be taken on the management of fisheries that have the potential to by-catch these species.

Management responsibilities of shark fisheries

Under the United Nations Law of the Sea, management responsibilities have been clearly mandated to national fisheries authorities with respect to the resources within Exclusive Economic Zones (EEZ) and relevant regional fisheries management bodies for transboundary and high sea fisheries resources. The prevailing ASEAN common position, however, is that the management of commercial fisheries, including shark fisheries, should come under the purview of the FAO. The FAO has advisory and promotional roles on fisheries management at the global level, and on the Code of Conduct for Responsible Fisheries (CCRF). This ASEAN position was asserted at the 23rd Meeting of the ASEAN Ministers on Agriculture and Forestry (AMAF) in October 2001, with the recognition that CITES is not the most appropriate forum to manage fisheries.

Status and trends of shark fisheries

The International Plan of Action for the Conservation and Management of Sharks, which covers both national and international waters, has been promoted by FAO to encourage all concerned states

and fishing entities to adopt a national plan of action (a ‘Shark Plan’) for the conservation and management of shark stocks. Unfortunately, limited knowledge of shark biology, of the size and status of stocks, of the real volume of captures, and of shark population dynamics are serious constraints on national fisheries authorities’ ability to manage shark stocks in their national waters.

Hence, as a prerequisite for sustainable management of shark fisheries, the Regional Meeting on Fish Trade and Environment has agreed and endorsed that the collection and analysis of data and information, combined with efforts to understand the status and trends of shark fisheries, are important bases for the development of appropriate fisheries management policy and actions. However, based on the recognition that shark fisheries in the region are generally small in terms of daily catch and by-catch, it was considered that the creation of a separate fisheries management policy for shark fisheries might not be useful.

The International Plan of Action for sharks

ASEAN Member Countries were therefore encouraged to further pursue and implement the regional common fisheries policy adopted at ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: “Fish for the People” held in November 2001 and the Regional Guidelines of the Code of Conduct for Responsible Fisheries. Through the development and improvement of national fisheries management plans, the required actions suggested by the International Plan of Action for Sharks will be accommodated in practical terms as follows:

- Expanding the classification of some major commercial shark species into the national fisheries statistics
- Using species composition as an indicator for better understanding the dynamics of shark fisheries
- Developing pilot projects to understand and manage shark fisheries
- Improving the coordination mechanism with industries for data collection and better

understanding of the status and trend of shark fisheries, and

- Promoting research activities to maximize the utilization of harvested sharks and to ease species identification of shark products.

Although the lack of financial resources may impinge upon the achievement of these activities, no fisheries management authorities amongst the ASEAN Member Countries should delay actions to understand and manage shark fisheries. Failure in conceiving timely and appropriate management actions on national shark fisheries management will further aggravate the political atmosphere, as seen from the debate in the CITES Meeting at Santiago. This is especially true in regard to



the current ineffectiveness of national fisheries management authorities for species such as sharks. This may lead to additional pressure for external intervention on national fisheries management, this time not limited only to shark species but open to other species and issues.

Antibiotics residues of farmed shrimp in Southeast Asia and their impact on trade

Another issue discussed at the Fish Trade and Environment meeting concerned the presence of antibiotics residues in farmed shrimps. This issue was



Shrimps are essential export commodities for many Southeast Asian Countries.

discussed at the meeting because some ASEAN Member Countries are facing huge problems in exporting shrimps. In this regard, the year 2002 will long be remembered by those involved in the shrimp farming business in Southeast Asia. Under stringent new regulations and controls on antibiotic residues from the European Union (EU), now being followed by other countries, the shrimp industry is being seriously affected.

Thailand, the biggest shrimp producer in the world, has seen its exports of frozen shrimps fall 40 percent in value and 27 percent in volume during the first six months of 2002, compared to the same period in 2001. The most important importers, such as the EU, Canada, and the USA, are now imposing new regulations for shrimp imports from Asia. Systematic examination and lower tolerance to antibiotic residues are the most notable new regulations. As a result, many shrimp shipments from Southeast Asian countries, especially Thailand and Vietnam, have been rejected.

What are the concerns about antibiotics?

The use of antibiotics for food animals raises two main issues: the risks to human health, and bacteria resistance acquisition to used antibiotics. The effects on human health of the main antibiotics found in cultured shrimps (*chloramphenicol* and *nitrofurans*) with parts per billion (ppb) amounts or less has not yet been studied in detail. These antibiotics are believed to be associated with increased risks of cancer. However, recent studies conducted in the Netherlands show that

risks are negligible unless an extremely excessive amount of contaminated food was consumed.

Reducing the prevalence of antibiotics in shrimps

In order to alleviate the issue, ASEAN Member Countries adopted four recommendations in the meeting:

- To promote the implementation of the ASEAN guidelines on *Good Aquaculture Practices* in farms
- To closely regulate and monitor the use of antibiotics in aquaculture
- To develop a public awareness program on the effects of using antibiotics, and
- To develop ASEAN-SEAFDEC training programs for the detection of antibiotic residues.

In the past, each Southeast Asian country and related regional organizations have tackled the issue independently. As such, recommendations adopted in the meeting underline an important shift in regional policy on the management of shrimp culture.

Although the situation is improving in terms of systematic inspection of shrimp shipments, as it has recently been seen by the lifting of the one-year embargo on exports from Vietnam, the Maximum Residue Limit (MRL) issue is still being discussed. The ‘zero tolerance’ set by the EU is considered by many countries as unreasonable, since only the most sophisticated equipment is able to detect these very small amounts

What is the Maximum Residue Limit?

The Maximum Residue Limit (MRL) is the amount of residue considered to be without any significant toxicological risk for human health. MRLs are based on Acceptable Daily Intakes (ADIs), which in turn are based on NOAEL (No Observable Adverse Effects Level) derived from animal and in vitro trials.

Trends in Chloramphenicol MRL for the main shrimp importers

EU	0.00 ppb
USA	5 ppb to 1 ppb to 0.3ppb
Japan	30 ppb

of antibiotics. Although zero tolerance can ideally be pursued, application of zero tolerance ignoring MRL may not be practical for the inspection of all consignments.

Brussels' European Seafood Exhibition

The issue of antibiotic residues in shrimps was also discussed in the Industry Meeting on Antibiotic Residues in Asian Seafood Products, at the European Seafood Exhibition, Brussels, Belgium, on April 24, 2002. The meeting focused especially on the MRL for *chloramphenicol*, *furazolidone* and *nitrofurans* antibiotics. Delegates at the meeting stated that the setting of such limits should be based on the amount of residue considered without any significant toxicological risk for human health (in terms of quantitative risk assessment), while residue-testing protocols for those antibiotics should be standardized.

They are everywhere!

Recent studies have shown that these antibiotics are nowadays commonly found at significant dosages in our natural environment and even in wild animals. In a study by the US Geological Survey on water samples from 139 streams across 30 states in the USA, results indicated the presence of antibiotics in 48% of the samples at combined level of 3.6 ppb. Hence, if sophisticated equipment had been used in analyzing the samples, it is almost certain that antibiotic traces would have been detected in a majority of the waterways. Very preliminary analyses of a variety of aquatic products as well as terrestrial animal foods have revealed a

disturbing number of trace amounts of *chloramphenicol* and *nitrofurans* among the samples, as mentioned by Dr. George Chamberlain, President of the GAA (Global Aquaculture Alliance), in the European Seafood Exhibition meeting.

Dealing with the situation

Several meetings on this issue between representatives of shrimp exporting countries and EU authorities have been held in an attempt to arrive at a practical and acceptable solution for both parties. Although many difficulties have been faced by Thailand, the latest news from the EU has encouraged the Thailand Farmer Organization. The news mentioned that the EU was satisfied with Thai food products, after having found no antibiotic substance contamination during its latest round of inspections. However, the EU authority stated that it would continue checking Thai products for a further short period of time before taking Thailand off its import control list.

Further discussion on the international harmonization of the tolerance level needs to be clarified soon, especially on the EU position in regard to lower *chloramphenicol* threshold levels than the US and Japan, since they are not really based on existing toxicity data, analytical capabilities and background contamination levels.

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