REPORT OF THE REGIONAL WORKSHOP FOR LATIN AMERICA AND THE CARIBBEAN FOR PROJECT EP/GLO/201/GEF: *Reduction of Environmental Impact from Tropical Shrimp Trawling through the Introduction of By-catch Reduction Technologies and Change of Management.*
27 - 30 September 2004
Kapok Hotel, Port of Spain, Trinidad and Tobago

OPENING CEREMONY

The Regional Workshop for Latin America and the Caribbean was held at the Kapok Hotel, Port of Spain, Trinidad and Tobago, 27 – 30 September 2004.

The Opening Ceremony was chaired by Dr Arthur Potts, Acting Director of Fisheries, Ministry of Agriculture, Land and Marine Resources.

The opening address was delivered by Dr. John Pegus, Acting Permanent Secretary in the Ministry of Agriculture, Land and Marine Resources, Trinidad and Tobago on behalf of the Honorable Minister of Agriculture, Mr. Jarette Narine. Dr Pegus expressed the government of Trinidad and Tobago's recognition of the need to ensure sustainable biodiversity of the marine resources and reiterated its support for the Project. He concluded that the workshop should provide an opportunity to move forward in achieving the objectives of the Project.

Mr David Bowen, FAO Regional Representative for Trinidad and Tobago, Guyana and Suriname addressed the meeting on behalf of the FAO and gave some brief remarks in which he described the objectives of the trawl Project within the context of the FAO Code of Conduct for Responsible Fisheries.

Dr Wilfried Thiele, International Project Co-ordinator, gave an overview of management objectives of national shrimp trawl fisheries and developments under the Project in this regard. The objective of this project is to reduce the amount of by-catch by 50% by the end of the project and Dr Thiele reiterated the need globally for shrimp fishing countries to demonstrate their willingness to participate in environmentally friendly fishing. He also emphasized the importance of co-operation between the fishing industries, scientists and other stakeholders within the project.

The workshop was formally opened by Dr Pegus and Dr Arthur Potts, Acting Director of Fisheries, provided the closing remarks.

PRESENTATIONS

The workshop agenda is attached in Appendix 1 (see file on CD compiled at the workshop). The main working language was English and there was an English-Spanish simultaneous interpretation by members of the workshop when necessary. The general content of each presentation, including information gleaned from the group discussions after each presentation is provided in the following section.

Background of the Project and Responsible Fishing Technologies

Dr Thiele gave the background to the project and gave an overview of progress in each of the main international regions in which the Project is being executed. He stated that non-participating countries were invited to each of the regional workshops held for Latin America and the Caribbean, Asia, Near East and Africa as a means of sharing the information gathered under the project and to harmonise data collection and research activities in the respective regions. A description of the various types of gear modifications that are being considered and tested under the project was given. Dr Thiele stated that the execution of the project was difficult in many countries primarily due to the marketability of by-catch and suggested that economic incentives from the respective governments may encourage the introduction of the new gear. It was again stressed that participation of the industry in Project activities was critical since techniques that are not accepted by the industry will fail to be implemented.

Dr Thiele stated that the Project supports ongoing work by the FAO on by-catch reduction and therefore activities will not finish after the end of the GEF funding since the FAO is committed to the development and promotion of by-catch reduction technology on an international level. Scientists will continue to research by-catch reduction technologies in response to the growing environmental lobby for a global ban on bottom trawling. This Project is one opportunity to gather scientific information to provide evidence to support bottom trawling since it is the most efficient fishing method to harvest shrimp. The livelihood of fishermen must also be considered. The FAO will ensure that all shrimp fishing countries benefit from lessons learnt under the Project. Several countries asked to participate in the project, but according to the rules of the financing agency GEF and FAO, they cannot become a project member, however they can request technical assistance from FAO under TCP Projects.

A Guide on by-catch reduction technologies will be completed by FAO by the end of 2004 for distribution to fishermen. In addition, a FAO Technical Report on survival rates of fish after escaping trawl gear will soon be available.

Legal aspects related to by-catch reduction technologies

The legal aspects of by-catch reduction were presented by FAO Legal Representative, Mr Blaise Kuemlangan. Mr Kuemlangan outlined why legislation is important to by-catch reduction technologies. By-catch must be viewed from a global perspective and countries need to consider their environmental laws and subsidiary legislation in addition to fisheries law when dealing with the issues related to by-catch reduction. For instance, quite often, the export market often influences the manner in which by-catch is legislated and the way in which by-catch issues are regulated.

Mr Kuemlangan gave an overview of international law and soft law (Conventions) such as the 1982 UNCLOS, 1995 FAO Code of Conduct on Responsible Fisheries, the UN Fish Stocks Agreement and the Biodiversity Convention. The presentation also focused on specific articles in the FAO Code of Conduct with regards to by-catch reduction. Conservation and management measures such as licensing regimes as the main means of limiting fishing effort were reviewed. The structure of legislation was described and reference was made to the inclusion of

specifications for gear and fish sizes and the fact that legislation must be site specific. Globally, administrative sanctions are being favoured over traditional criminal enforcement systems and they also work by complimenting the export market. The role of monitoring and surveillance was also discussed. Consultation with stakeholders ensured greater compliance with regulations.

National project activities by countries

The status of national shrimp fisheries and progress under the Project were presented by each of the participating countries. Digital copies of the respective country reports were given to workshop participants.

Cuba has an industrial shrimp fishery comprised of twin trawl vessels which trawl on the southeastern shelf of the country. Subsequent to the period 1990-1999, production has decreased due to a 37% decrease in fishing effort, with average shrimp and by-catch landings for the period 2000-2003 recorded at 1,417.5t and 3,774.2t respectively. The by-catch:shrimp ratio decreased from 5.8 for the period 1990-1999 to a current value of 2.7. This decrease is due to concentration of fishing activity in areas of higher shrimp abundance as well as the implementation of measures related to the increase of the total closed season and the protection of nursery areas. A shrimp trawl net (twin trawl) was designed with a 30% decrease in the total length of the body of the net based on Mexico's design and tested. Results differed based on the environmental conditions of the test site however in general they showed a 2-3% increase in shrimp catch and no significant difference in by-catch retention. Trials utilizing the modified net with a "fish eye" type BRD were also conducted, and results indicated a 3.1 % increment in the shrimp catch and a 15.2% escape of incidental fish catch.

Mexico has a shrimp fishing fleet of 2,412 registered vessels, of which 1,674 vessels using twin trawls operate on the Pacific side and 738 vessels, using single trawls, trawl in the Gulf of Mexico. Annual shrimp landings are estimated at 23,503t and 16,938t respectively for the two areas. Main issues of concern are the high volume of by-catch and discards and the high production cost as a result of the inefficiency of the old fleet's engine and gear design. These problems have been addressed through the application of improved gear, primarily the knotless netting material (SPECTRA) as well as new computerized engines. A new vessel by-back programme funded by the Ministry of the Environment has been implemented and it is estimated that 40-50 vessels have been removed from the Gulf of Mexico and plans are being made for the removal of 20 vessels from the Pacific side.

Two research vessels operate on the Pacific coast and one in the Gulf of Mexico. Prototype nets for the industrial vessels were constructed with the knotless mesh for the gear trials. The estimated cost of the experimental nets was approximately eight times that of the traditional nets however they have a longer lifespan. These nets can be use up to 14 fathoms but work best at 1-2 fathoms. There is currently no research using modified gear for artisanal vessels which operate in the Sonora region.

Comparative tests in 2003 using traditional and modified trawl nets gave significantly favorable results with a 19% increase in shrimp catch and a 43% reduction in by-catch. By-catch reduction

technologies were tested in 2004 and utilized single and double trawl nets and included modifications to the TED. Results showed a general loss of both shrimp and by-catch. It is mandatory to use BRDs in the protected areas and it is estimated that 100 vessels operate there and are primarily fishermen who have participated in the research involving BRDs.

Trinidad and Tobago has a fleet of 126 vessels comprising 22 industrial trawlers. Estimated landings for trawlers (2002) are 940t of shrimp, valued at 23.9m$TT and 1005t of by-catch valued at 4.2m$TT. Available data indicates that the industrial trawlers have the smallest ratio of by-catch to shrimp (0.6 to 1). However data for this fleet is limited. The project has been presented to the general stakeholders in the trawl fishery and the National Steering Committee was formed in 2004 comprising mainly representatives of the trawl industry. This committee will serve as an important platform to coordinate data collection and trials for the project which effectively commenced in 2004. Currently, project activities are focused on collection of catch, species composition and discards data from commercial vessels.

Venezuela gave an overview of its shrimp fisheries, gear and estimated by-catch. Total annual production from the shrimp fisheries was estimated at 9,978t of shrimp. However this amount is not only caught with trawl nets but also include cast nets and flat beach seines. Testing of BRD's (fish-eye) in both the artisanal and industrial fleets has also begun. Results from testing of BRDs in the artisanal fleet indicated a favorable decrease of 41.1% of by-catch with a loss of 20.6% in shrimp catches (FE-closed). Results of the industrial fleet (Margarita Island) demonstrated a decrease from 4,500kg to 1,700 kg of non commercially important by-catch. Recommendations include further BRD testing in the industrial fleet and consideration of other more viable methods for the artisanal fleet.

Columbia gave an overview of its shrimp trawl fisheries operating on both the Pacific and Atlantic coasts. 53 vessels operate from the Atlantic coast and on the Pacific coast the industrial fleet decreased from 104 to 47 over the period 1990-2004. It is estimated that 80% of landings on the Atlantic coast are from the industrial fleet while on the Pacific coast the artisanal fleet accounts for 70% of the landings of shrimp. The vessels in the industrial fleet operating on the Atlantic side use four trawl nets whereas those operating on the Pacific use two trawl nets. The Marine and Coastal Research Institute (INVEMAR) is the executing agency for the Project. National project activities commenced in 2004 when the LOA with FAO was signed and have focused on the fishing technology of the shrimp fleets currently operating on both coasts.

Costa Rica provided a description of shrimp trawling activities. The commercial trawl fleets comprises 3,230 vessels operating out of ports on the Pacific coast. Puntarenas is the main fishing port from which a total of 1,787 vessels operate and it is also the port from which the semi-industrial and industrial fleets operate. In 2002, landings from the trawl fleets averaged 1,034 tonnes and comprised 339 tonnes shrimp, 428 tonnes sardines and 267 tonnes of discards. Landings of white shrimp showed a general decline which may be due to an increase in fishing effort due to an increase in the number of vessels. National activities under the Project have focused on the collection of information from the semi-industrial trawl fleet and preliminary data on the species composition of discards, particularly with regards to species of no commercial importance.

Shrimp Trawling Issues and experiences – Non Project Countries

Brazil has a fleet of approximately 11,012 vessels comprising 10,500 artisanal and 512 industrial trawlers. The industrial trawlers operate mainly on the southeast coast, but may also trawl on the northeast coast of Brazil. The artisanal vessels trawl closer to shore mainly on the north coast of Brazil however they may even trawl in the Amazon River basin. Total annual shrimp landings for the industrial fleet are estimated at 18,000t, while the artisanal fleet contributes an estimated 10,500t. Investigations were done by two agencies CEPNOR and CEPENE with the objective of reduction of by-catch without major losses in shrimp catches. Results were not presented.

Suriname has an extensive coastline (400km) and marine waters (1,060 sq km) but however does not have adequate human and financial resources to adequately monitor and control its fisheries. The industry is focused on shrimp production with an annual value estimated at US$60 million. The main target species is the pink-spotted shrimp, and to a lesser extent the brown shrimp, targeted by 99 vessels and it is estimated that 27 vessels target the seabob. About 98% of the fleet is operated by Japanese/Korean owned vessels. Within the trawl industry, the seabob fleet is perceived to be responsible for seabed and habitat destruction in the trawl grounds which negatively impacts on the other trawl fleets. It is estimated that 10-12 kg of fish is discarded per kilogram of shrimp and 10% of by-catch is sold. The pressure on the finfish resources is very high and attempts by an independent individual have been made to introduce BRDs but this was not successful. During the workshop Suriname asked to participate in Project EP/GLO/201/GEF.

In **Guatemala** trawl fishery there are 48 industrial and 28 medium-scale vessels targeting shrimp on the Pacific coast and 51 medium-scaled vessels operating on the Atlantic coast and concentrated around Bahia de Amatique. Studies on the shrimp catches in Guatemala show a general oscillation in shrimp abundance on the Pacific coast, fluctuating between 115 and 455 tonnes per trimester over the years 1991-2002. Landings in 2001 were estimated at 300 tonnes on the Atlantic coast. Studies show that the landings of shrimp are strongly influenced by environmental conditions with increased landings coinciding with times of higher rainfall and lower temperatures.

Development and Discussions of Workplans

Dr Thiele made several recommendations based on the country presentations and decisions for future work were agreed to after discussions were held among the participating countries to develop coordinated activities.

1. Workplans should be prepared for both artisanal and industrial fleets. It is easier to implement BRD technology in industrial fisheries therefore efforts need to be concentrated on the artisanal fleets such as those predominating in Trinidad and Tobago and Venezuela.

2. It is recommended that **Cuba and Mexico** collaborate since both countries use similar gear however Cuba has had limited success with the use of the fish eye getting only a 16%

reduction in by-catch. A technical expert will visit Cuba to make necessary proposals. Cuba must request the purchase of new netting materials and a schedule must be agreed to for the collaborative work.

3. **Mexico** will provide technical assistance through the dispatch of a gear technologist to **Colombia**. Colombia will organize two workshops (one on Pacific, one on the Atlantic Coast).

4. **Trinidad and Tobago** will provide a description of artisanal and industrial gear to Mexico for development of appropriate modifications.

5. There are possibilities for co-operation between **Mexico and Venezuela** regarding the industrial fleet.

6. **Mexico** will provide an expert to work with **Venezuela and Trinidad and Tobago** in March 2005. Gear trials will be performed on artisanal nets used in the Orinoco delta and on the inboard artisanal vessels operating in the Gulf of Paria.

7. **Suriname** will purchase new trawl gear and perform appropriate tests.

8. Recognising the by-catch problems in **Suriname, Guyana and Brazil**; it was recommended that these countries should request FAO's technical assistance under TCP arrangements.

Miscellaneous:

- The FAO/ ICES Working Group on Fishing Technology and Fish Behavior (FTFB), held its next meeting on invitation of FAO in Rome from 18 to 22 April 2005. One of the theme sessions will deal with selectivity and by-catch in Shrimp Trawls. A representative from Latin America and the Caribbean will be invited to participate in this meeting as well as the other regional groupings??? under Project EP/GLO/201/GEF.

- Countries were also invited to participate in a 'smart gear' fishing gear competition, promoted by the WWF, in which the development of environmentally friendly gear will be judged.

Field Study Tour

A study tour was made to two major landing sites for the trawl fishery in Trinidad and Tobago. These were the National Petroleum (NP) Compound which is a major landing site for industrial trawlers operating in the Gulf of Paria and Columbus Channel, and Otaheite which is a major landing site at which artisanal trawlers operating in the south Gulf of Paria are based. The aim of the field trip was to observe the gear used by each of these fleets and to observe the landings. Due to the timing of the field trip, landings were only observed at Otaheite.

Project Implementation/Administrative Issues

Mr Janne Fogelgren, Project Operations Coordinator, FAO addressed several administrative issues regarding the Project.

1. Progress Reports

The Project Implementaion Agency, UNEP, has requested that all exceeding US$500 should be listed in the 6 monthly Project Progress report, also indicating the Serial numbers of each.

2. Draft Terms of Reference for the a National Legal Consultant to review national legislation.

Countries are to submit curriculum vitae of three suitable candidates to the national FAO office as soon as possible. The consultancy will be funded from each country's project budget allocation, and the consultancy will be implemented in phases..

3. Project Budget

Budget revisions should be submitted within one month He advised the countries that with sufficient justification, funds which are not used as planned can be brought forward to future years.

4. Web Site for Project

Each country can provide information on their national project activities, technical reports, progress reports for posting on the project web site soon to be released.

End of Meeting

The meeting ended with Dr A. Potts congratulating the participants and FAO to a successful and constructive workshop. He was looking forward to follow the future progress of this important project. FAO thanked Dr. Potter, and expressed gratitude to the Ministry of Agriculture, Land & Marine Resources, Fisheries Division for organizing the workshop and the interesting field trip.

ANNEX 1

EP/GLO/201/GEF "Reduction of Environmental Impact from Tropical Shrimp Trawling" Regional Workshop for Latin America and the Caribbean
Trinidad and Tobago, 27-30 September 2004

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