



REBYC
Reduction of Environmental Impact from Tropical Shrimp Trawling,
through the introduction of By-catch
Reduction Technologies and Change of Management
(EP/GLO/201/GEF)

**Minutes of
National Coordinators Global Review Meeting
Manzanillo/ Mexico 10 to 16 July 2005**

Opening ceremony

The Mid term meeting of the National Coordinators was held at the Manzanillo Gran Costa Real Resort, 10 – 15 July 2005 (attendance list Appendix 4).

The opening ceremony was chaired by Mr. Ignacio Mendez, Director General de Investigación Pesquera en el Pacífico sur Del INP.

The opening address was delivered by Mr Louis Fleischer, Deputy Director of INP on behalf of Dr. Guillermo Compeán Jimenez, President of INP (Instituto Nacional de la Pesca).

He welcomed the participants to Mexico, highlighted environmental, capacity and economic problems in the Mexican fishing Industry and expressed his satisfaction that INP is hosting this important project meeting. Furthermore he pointed out that the Mexican shrimp trawling industry will benefit from the results achieved under the project. The full speech is attached as Appendix 2.

Mr Norman Bellino, FAO representative in Mexico addressed the meeting on behalf of FAO and gave some remarks in which he described the objectives of the shrimp by-catch project within the context of the Code of Conduct for Responsible Fisheries. The welcome address of Mr Bellino is attached as Appendix 3.

The representative of the hosting institution, Mr Ignacio Mendez was appointed as chairperson for the scientific sessions of the meeting.

Presentations

The meeting agenda is attached as Appendix 1. This agenda was slightly changed, due to the unfortunate absence of the national coordinators of Iran, Nigeria and Cuba. UNEP, the project Implementation Agency, had advised that they regrettably could not attend the meeting.

Introductory presentation

This presentation was given by the project coordinator. Starting with a short outline of the project history he focused on results achieved in each of the participating countries.

After a slow start, caused by administrative problems at FAO as well as in the participating countries, most countries made good progress in the implementation of their national project activities.

Furthermore it was pointed out that the justification for the by-catch reduction project in tropical shrimp trawling is still relevant to the actual situation in world fisheries.

FAO's recent estimation of global discards considered tropical shrimp trawling as the fishery with the highest discard rate. An average 62 % of the total catch in tropical shrimp trawling is discarded.

In the following discussion, Mr. Chokesanguan, from SEAFDEC, asked whether it would be possible for other countries to join the project. Mr. Thiele responded that originally 30 countries had been invited to participate of which 12 had responded positively. However, after the project had commenced, a number of countries had expressed their interest to be part of the project, but Mr. Thiele advised that it is not possible to accommodate additional countries under the present project budget. Given the large interest from non-participating countries, FAO was considering approaching UNEP to discuss the preparation of a new project. Mr. Fogelgren added that all GEF funded projects need 100% co-financing either by the participating countries or other donors.

Mr. Thiele informed the meeting that regional workshops, where countries outside the project were invited, had been held in 2003 in Iran, in 2004 in Bahrain, and a new workshop was planned in the autumn of 2005 in Mozambique for the east African countries. A workshop was also under preparation in Kuwait.

Legal aspects related to by-catch reduction technologies

A representative of the legal department of FAO could not attend the meeting because of other commitments. So a brief presentation of legal aspects to be considered when new technologies and management measures are introduced was given by Dr W.Thiele.

This presentation was based on a presentation of the legal department and highlighted why legislation is important to by-catch reduction technologies, that the by-catch issue must be viewed from a global perspective and that countries need to consider their environmental laws and subsidiary legislation in addition to fisheries law. An overview was given of international law and soft law such as the 1982 UNCLOS, 1995 FAO Conduct for Responsible Fisheries, the UN Fish Stock Agreement, and the Biodiversity Convention. The presentation focused on specific articles of the COC with regard to by-catch reduction. Conservation and management measures such as licensing regimes as a 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 it was underlined that legislation must be site specific. The role of monitoring and surveillance was also discussed.

This introduction and discussion, was followed by a brief status report of the progress made in each individual participating country.

All country presentations were distributed to the participants on a CD after the meeting. Only highlights will be presented in these minutes.

Country reports

MEXICO – status report by Andres Seefoo.

Three workshops on BRD construction have been conducted by Mexico, the latest one being in May in Salina Cruz. Mexico has no interest in the fish by-catch and therefore has high potential for eliminating it. Successful BRD trials have been conducted with “Double fish-eye” and “Extended funnel”. Major trawl modifications such as “Double footrope” and the shortening of the trawl body have also been tested.

Technology transfer to the other participating countries in the region comprises:

- Costa Rica: Two INP researchers went to Costa Rica in July and August (modified trawl & Double fish-eye in semi-industrial fleet).
- Venezuela: One INP researcher and one fisherman went to Venezuela in July to transfer *suripera* for Lake Maracaibo.
- Venezuela/Trinidad: One INP researcher and one fisherman were in Venezuela and Trinidad in order to improve selectivity of trawls in artisanal fishery in the Orinoco Delta and Gulf of Paria.
- Cuba: Two INP researchers were in Cuba in October and November 2004, to introduce the modified trawl, double footrope & fish-eye in the industrial fleet.
- Trinidad and Tobago: One INP researcher was in Trinidad and Tobago to introduce the modified trawl & Double fish-eye to the industrial fleet.

It was noted that the inputs provided by the INP staff, had been part of the Mexican in-kind contribution to the project.

Activities for 2005 include:

Installation of Simrad’s electronic equipment	delivery of equipment
Preliminary tests of electronic equipment	Sequential activity
Basic training on operation of electronic equipment (40 hours)	Sequential activity
Advance training on operation of electronic equipment (2-4 weeks)	When Simrad decides
Observers recruitment	May to July
Observers training course	End of July
Characterization of by-catch in four zones during shrimp ban	May-August
Preparation of experimental cruises	August and September
Experimental cruises (4)	August (during shrimp ban) September to November (during shrimp season)
Observers onboard commercial shrimp fleet	Fishing season 2005-06

CUBA –The status report was presented by Andres Seefoo in the absence of the country coordinator.

TEDs are not used and most by-catch is utilized, however there is a high incentive to release juvenile snappers in particular.

Experiments have included trials with 50% reduction of the trawl body as well as trials with fish-eye. By-catch reduction has been 10 – 15%.

The management of the Cuban fisheries resources closes an area if the by-catch is too high.

COLUMBIA - Status report by Mario Rueda

Two workshops with focus on the design, building and operation of prototype trawl nets using by-catch reduction devices were ongoing; June 27 – July 11, 2005 in Buenaventura at the Pacific coast and 12 - 26 July 2005 in Cartagena at the Atlantic coast. A consultant from Mexico helped facilitate the workshops. The fishing industry has shown a huge interest in the technologies presented at these workshops.

Concerns were raised as to whether the budget was sufficient.

COSTA RICA - Status report presented by Antonio Porras.

In order to characterize the trawler fleet, 36 vessels from the town of Puntarenas completed a comprehensive technical questionnaire. All vessels were privately owned.

Costa Rica has experienced some problems in the project execution, because of administrative difficulties related to the cooperation documents signed with FAO, but these problems have been solved now. In this connection Mr. Fogelgren and the FAOREp visited the Fisheries Institute in San Jose.

A good cooperation has been established with Mexico, and a workshop and BRD sea-trials are under preparation.

By-catch rates as high as 60:1 were reported from fishery in shallow water. This issue sparked an engaged discussion after the presentation.

TRINIDAD and TOBAGO -Status report by Suzette Soomai.

A campaign for public awareness and consultation on the problems of shrimp trawling activities has been conducted in Trinidad and Tobago. As a result there were consultations with various sections of the trawl communities and preparation and awareness-building materials were disseminated.

A data collection programme on trawl operations was also executed including an on-board collection of haul samples, catch rate and economic data from all trawl fleets and mapping of fishing grounds used seasonally by each of the trawl fleets.

Three technical reports will be produced;

- Analysis of the economic and social information collected.
- Analysis of catch-rate data.
- Report on GIS-mapped locations.

Cooperation with Venezuela and Mexico is in preparation. Technical support from Mexico and FAO is needed for the BRD sea-trials.

VENEZUELA

Status report by José Janvier Alió.

The table below gives the figures for shrimp landings in 1998, by-catch and estimated possibility for modifications in the different shrimp fisheries in Venezuela.

<u>Fleet</u>	<u>Shrimp landings (t)*</u>	<u>% by-catch</u>	<u>By-catch volume (t)</u>	<u>Possibility of modification</u>
Ind. Trawl.	3231	94	53.900	High
Orinoco Delta	166	56	400	High
Lake Maracaibo	2646	29	3.700	Low
Gulf Paria	216	82	1.200	Low
Coastal Lagoons	614	47	1.200	Low, not necessary

Controlled experiments have been conducted with fish-eye in different fisheries and preliminary tests with square mesh on industrial trawls were conducted from 1987 to 1990.

However the Industrial fleet rely on fish by-catch. Therefore is the fish-eye not an option in this fishery, whereas artisanal fishery doesn't use the fish caught as by-catch. Thus the fish-eye is a possibility in this fishery.

A law was passed in Venezuela in 2001 demanding that fishing gear should be selective and environmentally friendly. Fish-eye might be an option to implement as a mandatory technical measure in the legislation for the artisanal shrimp fishery.

Programmed tests include:

1. Square mesh in industrial trawl.
2. Knotless mesh and Mexican design of industrial trawl.
3. Suripera net to replace beach seine in Lake Maracaibo.
4. Bottom tangling net to replace artisanal trawl in Orinoco delta.
5. Validation of BRDs in target fleets.

Regional problems:

Mr. Mario Rueda from Columbia said that Colombia had to finish the project activities by March 2006 as mandated by the Colombian Government. This should be no problem, but Colombia needed US \$20,000 in order to conduct a fisheries monitoring program and Colombia needed technical assistance to build up the necessary legal framework for the introduction of technical measures into the fisheries management. Mr. Thiele will investigate whether it is possible to find the funds mentioned and will contact the FAO fisheries legal service regarding the technical assistance.

As the leading country for the Caribbean region, Mexico prepared a regional work plan, in consultation with the other countries and gave guidance for the future directions of the work.

The following is the outcome of these discussions:

Latin American Future Work

Costa Rica

Mexico will assist, sending two researchers from INP (from 16th of August to September 5th), main activities will include:

- Meeting with FAO-Costa Rica, Authorities from INCOPECSA and stakeholders.
- Observation at sea of traditional trawls.
- Modification of traditional trawls, TEDs and introduction of Fish-Eye (single and double).
- Test at sea of modified trawl, TED and BRDs.
- Presentation of preliminary results to INCOPECSA and stakeholders.
- Elaboration of report.

Venezuela

Mexico will send one researcher from INP and one fisherman (October-November, for one month), main activities will include:

- Meeting with FAO-Venezuela, Authorities from INAPESCA/INIA and stakeholders
- Observation at Lake Maracaibo of traditional Mandiga trawls.
- Introduction of Suripera (construction and trials).
- Introduction of bottom enmeshing net (construction and trials).
- Presentation of preliminary results to INIA and stakeholders.
- Meeting with stakeholders (Industrial fleet) at Cumana.
- Workshop for demonstration of TED and introduction of square mesh panels.
- Meeting with stakeholders (Artisanal fleet) at Orinoco Delta.
- Observation at Pedernales of traditional trawls.
- Proposal for improvement of selectivity of traditional Trawl.
- Test at sea of modified trawl.
- Sea trials with Suripera.
- Presentation of preliminary results.
- Elaboration of report.

Trinidad and Tobago

Mexico will provide one or two researchers from INP (not before November, for 15 days), main activities will include:

- Meeting with FAO-Trinidad, Fishing Authorities and stakeholders.
- Introduction of new design of trawl and Fish Eye (construction and at sea trials).
- Elaboration of report and presentation of preliminary results to fishing authorities and stakeholders.
- One day observation a sea of traditional trawl used by semi-industrial fleet.
- Two day observation a sea of traditional trawl used by industrial fleet.
- Recommendation of future work on both semi-industrial and industrial shrimp trawlers.

With Cuba and Columbia, Mexico has currently no specific agreement regarding support of their national activities.

Country reports African region

CAMEROON

Status report by Mr. Oumarou Njifundou.

Two BRD workshops have been conducted in Cameroon; One in October 2003 facilitated by Mr Daniel Aguilar and another in November 2004 facilitated by Dr. Solarin from Nigeria and the rapporteur.

Pilot test trials in connection with the 2004 workshop with a square mesh window codend and a 90° turned meshes codend gave very positive results on reducing by-catch of no value on a commercial trawler.

Since April 2003 a survey of the shrimp fishing grounds has been on-going. Observers on board collect statistical data on catch, by-catch and discards on a monthly basis. The data collected is immediately compiled for analysis.

Cameroonian project coordinators attended a BRDs and TEDs workshop in Nigeria.

A workshop on BRD and TED implementation facilitated by external experts is scheduled for the autumn 2005.

The GEF cash allocation of US\$ 50,000 for Cameroon, has been almost fully committed. Additional funding partners are being sought.

NIGERIA -Status report presented by the rapporteur.

Nigeria has conducted a comprehensive socioeconomic survey in order to be able to predict which groups of the population might be affected by a reduction in by-catch as a consequence of an introduction of BRD into the legislation. Sampling has been performed in harbours and at sea, and the different trades have been localized.

Two workshops with the participation of external specialists have been conducted in Duala. The involvement and interest in the workshops from the Industry was considerable. Promising research results have been obtained with controlled comparative fishery with BRD codends against a standard in a quad rig (four trawls).

A square mesh window codend, a full square mesh codend and a 90° turned meshes codend caught more marketable shrimps and fish than a standard codend while reducing the discard percentage of juvenile shrimps and fish. More trials are needed.

The finally developed BRD technology will be transferred to Cameroon for long term testing in their commercial fishery as well.

A workshop is planned for the autumn 2005 with emphasis on training in optimal rigging TED's in order to avoid shrimp loss. External experts will facilitate the workshop.

I.R. IRAN -Status report presented by Mr. Thiele, in absence of the National Coordinator

Iran has a well managed shrimp fishery with large catches per haul, but unfortunately also a high by-catch of unwanted juvenile fish and other marine species. Also an unwanted degradation of the habitat is observed. More than 3150 vessels (about 1/3 of total fishing vessels) are engaged in shrimp fishing. In each province the shrimp season is approximately 6 weeks. Opening and closing time is based on maturity and body length of the shrimp and the percentage of the reserved stock.

A comprehensive data collection on by-catch composition was performed in accordance with the project program.

Iran has performed sea-trials, partly supported by external experts, with variants of the Nordmore Grid, with TED's, with fish-eyes and with the extended funnel in combination with large square meshed windows.

Until now mainly national funds have been used to implement national project activities.

BAHRAIN -Status report presented by Mr. Ebrahim Abdulqader

In 1997 a ban was issued that resulted in the closure of industrial fishing. However, the artisanal fleet consists of wooden and FRP boats which are quite efficient, and the word "artisanal" is no longer valid to define Bahrain's shrimping sector. There are several shrimp species of which *Pennaeus semisulcatus* is the most important commercially. Two species *P. latisulcatus* and *Metapenaeus kutchensis* grow to a good size. Discard consists of small shrimp, a large variety of fish species and occasionally sea turtles.

In relation to the GEF project, Bahrain conducted a regional demonstration and training course in October 2004, and an awareness campaign has also been conducted.

Experts from Bahrain have attended a BRD workshop in Iran

SEAFDEC -Status report presented by Mr. Bundit Chokesanguan.

SEAFDEC has a considerable knowledge in the development and testing of TEDs and BRDs in the Asian region. Workshops including tests, awareness raising and training of the industry and fisheries managers have been conducted in almost all the SEAFDEC member countries. The serious extension work includes production of a number of Video-CD's which are distributed to relevant users world wide.

In particular the JTED (Juvenile and Trash-fish Excluder Devise) and the TTED (the Thai Turtle Excluder Devise) have been in focus at the workshops, but many other types of BRDs and TEDs have also been tested. Often a small-meshed covers with or without hoops are used to demonstrate to the Industry which species and sizes are sorted out by devises and codends.

Mr. Chokesanguan showed some of SEAFDEC's latest films about JTED implementation in the Philippines. Mr. Chokesanguan has helped the Asian project countries with great enthusiasm as external expert. Although the fishing Industry has been very positive about the by-catch reduction devises, the JTED has still not been adopted in the commercial trawl fishery.

INDONESIA -Status report presented by Mr. Endroyono

Trawl fishery is general prohibited in Indonesia, but shrimp trawl net is permitted in waters of Kei, Tanimbar, Aru, Irian Jaya archipelago and Arafura Sea outside the 10m water line. The use of TEDs is mandatory in Indonesia.

With the assistance of SEAFDEC and the Philippines workshops have been held in Sorong August 26 – September 6, 2002; in Ambon October 20 – 25, 2003; in Tual June 13 – 21, 2004 and in Sibolga October 04 – 09, 2004. The tsunami has delayed the program.

Positive results have been achieved with JTEDs in Western Indonesian waters, where development of a grid with bar spacing around 1.5 cm will be one of the future goals. Bar spacing of 2.5 and 4 cm release too many marketable fish.

A symposium on the Present Status of Trawl in Indonesian Water was held in Jakarta, 25 – 27 April 2005.

A training/workshop is planned at Merauke – Papua, August 2005 and a field demonstration of new technologies including comparative trials is at the planning stage.

PHILIPPINES -Status report presented by Mr. Jonathan Dickson.

The Philippines has tested a variety of JTED types including:

1. Vertical Bar Sorting Grid (VBSG)
2. Horizontal Bar Sorting Grid (HBSG)
3. Square Mesh Sorting Grid (SMSG)
4. Square Mesh Window (SMW)
5. Rectangular-Shaped Window (RSW)
6. Semi-Curve Window (SCW)

A number of BRD workshops and consultations have been held. Following workshops were held in:

November 10-20, 2003 Training/ workshop and Experiments of JTEDs in Manila Bay

December 8-18, 2003 Training/workshop and Experiments of JTEDs in Maqueda Bay/Samar Sea

April 20-30, 2004 Training/ workshop and Experiments of JTEDs in Lingayen Gulf

July 5-9, 2004 Consultative Workshop on the use of JTEDs in Southeast Asia (SEAFDEC-TD, Thailand)

September 21-29, 2004 Training/workshop and Experiments of JTEDs in San Miguel Bay

November 10-18, 2004 Training/ workshop and Experiments of JTEDs in Samar Sea

Dec 9-19, 2004 Trainers' Training Workshop [The Aquarium Beach Resort, Rosario, La Union (Lingayen Gulf)]

April 5-15, 2005 Training/ workshop and Experiments of JTEDs in Visayan Sea (

An Outline of a JTEDs Pilot Implementation Plan has been made and final trials are planned for 2005.

The Philippines has developed a budget and reporting format for the project which the international project coordinator recommended was used by the other participants.

Closing Session.

In his closing speech, Mr. Thiele remarked that the project might have had a slow start, but that major achievements have been obtained in most of the participating countries, and he had no doubt that the project objectives will be met. No additional GEF funds would be available for the project, but if needed, an extension of the duration was possible, within the current budget frame. Mr. Thiele thanked Mexico and SEAFDEC for the help they had exerted in their respective regions. Thanks were directed to the Philippines for providing a detailed work plan- and budget format that should be used as frame by the other countries. Many thanks were also given to Mexico for hosting the meeting and providing logistical service to the participants. Mr. Thiele ended his speech by emphasizing that the meeting had produced friendships that reached beyond traditional working relations.

Dr. Guillermo Compeán Jimenez, the national coordinator for Mexico closed the session with his speech that is attached as Appendix 5.

APPENDIX 1



REBYC

Reduction of Environmental Impact from Tropical Shrimp Trawling,
through the introduction of By-catch
Reduction Technologies and Change of Management

National Coordinators Global Review Meeting

Date: 10 -16 July 2005

- 10 July Arrival of participants
 Welcome reception
- 11 July 9.00 Opening by the Governmental representative
 9.30 Welcome by FAO (FAO Representative)
 9.45 Welcome by UNEP representative
 10.00 Break
 10.30 Introduction by International Project coordinator
 - Purpose of the Nat. Coordinators meeting
 - Overall status of the project
 - Work to be done in the remaining project time
 - Legal issues
 11.30 Country reports, Mexico
 The country reports should include;
 - statement about the actual situation and research activities;
 - technical achievements; devices tested etc.
 - recommended by-catch reduction technologies for
 different fleet sectors in the country;
 - concepts for increased utilisation of by-catch;
 - problems in the project implementation;
 - alternative fishing methods for certain sectors
- 13.00 Lunch
- 14.00 Country report Cuba
 15.00 Country report Costa Rica
 16.00 Country report Colombia
 17.00 End of sessions
- 12 July 8.30 Country reports cont.
 Trinidad & Tobago
 9.30 Venezuela
 10.30 Break

11.00 Discussions on regional problems (Latin America and Caribbean)

13.00 Lunch

14.30 Country reports
Nigeria

15.30 Cameroon

16.30 Discussions on regional problems (Africa)

18.00 End of sessions

13 July

8.30 Country reports
I.R.Iran

9.30 Bahrain

10.30 Break

11.00 Discussion on regional problems

13.00 Lunch

14.30 Country report SEAFDEC
(Report should include results achieved under SEAFDEC project)

15.30 Country report
Indonesia

16.30 County report
Philippines

14 July

Field trip

15 July

8.30 Discussion on regional problems
Asia

10.30 Break

11.00 Reports and discussions on administrative and financial issues

13.00 Lunch

14.30 cont.

16.00 Any other matters

APPENDIX 2 Opening speech of Mr. Louis Fleischer, INP

FAO GLOBAL ENVIRONMENTS NATIONAL COORDINATORS GLOBAL REVIEW MEETING Manzanillo, Colima, México (10-16 Julio 2005)

Distinguished Representatives of FAO, Delegates, Participants, Ladies and Gentleman. It's a great pleasure for me, to address you this morning in Manzanillo, Colima, Mexico on behalf of the president of the national institute of fisheries of Mexico (INP) Dr. Guillermo Compean.

1. I am honoured to have the opportunity today, on behalf of my government and the INP, to officially welcome you all to this city, on the pacific side of Mexico, for the development of this important FAO sponsored activity, which is the national coordinators meeting for the reduction of the environmental impact in tropical shrimp trawling. 10 of the 13 participating countries of this important global project are here today.
2. I also have a personal message from Dr. Guillermo Compean, president of the Instituto Nacional de Pesca, who sends to each of you, his warmest regards and the insurance that he will be here, later on, this week, seeking your company and the conclusions and recommendations derived from this important global FAO meeting in Mexico.
3. As you probably know, the INP is the official fisheries body in Mexico which provides scientific and technological advice to the federal government for the management and regulation of our fisheries and aquaculture activities. Therefore, the INP makes daily efforts to improve the quality of its scientific and technological advice and it is particularly glad to be an active part of this global FAO project and to have the opportunity and honour to meet and host you here in our country.
4. Working with FAO is and also has been a long tradition for the INP, because FAO is an organization which has its own and great reputation, and without any doubt, FAO has the highest global standards of work, development and achievements in fisheries and agriculture. I therefore, on behalf of the INP, wish to thank the director of the project, **Dr. Wilfred Thiele** , **Mr. Janne Fogelgren**, who is the operative coordinator, to **Mr. Norman Bellini** , who is the representative of FAO in Mexico and a good friend, as well as, **Mr. Adrian Garcia** from FAO Mexico and my colleagues **Gabriel Aldana** , **Ignacio Mendez** and **Andres Seefoo**, who are the local or focal coordinators of this important event, for attending.
5. As I said before, for Mexico cooperating in fisheries issues with FAO, has been a proved long path of well achieved joint objectives, through many scientific programs and also several international adventures, one of which was the adoption of **The International Code Of Conduct For Responsible Fisheries**, a project on which we both worked very closely for many years.
6. Inspired by the spirit of this international agreement, Mexico has participated in this and many other FAO, regional and global programs. Always seeking the objectives and in particular, like in this case, taking a leading role promoting the activities inside its territorial boundaries, as well as outside our territory into other countries in our region. We have established firm lines of cooperation and participation with them.
7. As you all know, recently my country, Mexico, was honoured by the FAO, recognizing and receiving the **Margarita Lizarraga Award**, for our outstanding developments and performance in our tuna fishing operations in the eastern pacific. This is a privilege, but at the same time, it is a commitment that we would like to extend to the other fisheries and aquaculture activities performed in our national waters and in the high seas were our fleets work.

8. Therefore, your work this week is of high importance for us and we wish to reiterate our promise to continue our full participation in this project. I am very pleased to announce that the results obtained so far in this project, have impacted positively and have already been incorporated in three of our coastal fishing states: Sonora and Sinaloa, in the gulf of California and also in the state of Oaxaca, located in the southern part of our pacific shore that today we have the chance to enjoy. In these three places, with important shrimp fisheries, the federal and state governments have invested in programs of substitution of the recommended technologies derived from this global FAO effort.
9. The shrimp fishery represents for Mexico, an activity of great interest for its economic and social impact, therefore your deliberations and analysis during this week are of great importance for our country, the region and many other countries around the world. We hope you will find here in Manzanillo a suitable place for reflection, productive results and beneficial recommendations for all the participants.

APPENDIX 3 Opening speech of Mr. Norman Bellino, FAO Rep Mexico

Opening remarks FAO

Your Excellencies, Ladies and Gentlemen,

It is a great pleasure for me on behalf of the Director General of FAO J.Diouf to address you at the beginning of this important Workshop. First of all I will take the opportunity to thank our host from Mexico for making this meeting possible.

In a world of increasing demand for food, the sustainable use of natural resources is a major challenge. Over the last decades it has become clear that the marine resources are not unlimited, and it is estimated that the marine harvest can not be increased much above the present level of approximately 90 million tonnes. Adverse environmental impacts ranging from climatic changes, pollution, to the detrimental impact of fisheries themselves are other issues of increased global concern.

It is becoming increasingly clear that many of the world's fishery resources are being subject to exploitation at or above their capacity to remain sustainable. In addition, in the face of rising population, FAO projects a growing gap between supply and demand which may have the effect of substantially increasing fish prices. The result could be a reduction in the availability of fish to consumers particularly the poorer consumers in developing countries for whom fish is a traditional and culturally satisfying source of their animal protein supplies.

Taking this into account and knowing that still large parts of the catch are wasted as a result of discarding unwanted catches at sea, action is urgently needed to mitigate that problem, because these practices impact directly on the resource, the environment and on the availability of fish for consumption.

The reduction of discards and of environmental impact is a priority activity under FAO's Regular Programme which includes the evaluation of by-catches and discards resulting from various fisheries, plus assessment of the impact of trawling and other similar fishing methods on the sea-bottom, and on the environment in general.

In 1994 FAO published a global assessment of fish discards of 27 million t. with a range of 17.9 to 39.5 million t. Despite the fact that a study done in 1998 indicated that the 1994 assessment was an overestimate, it means a significant portion of the world catch is discarded.

Changes in the patterns of fishing activities throughout the world have impact on discard practices. Therefore an update of the previous estimates of discards in the world's capture fisheries was needed and trends and other issues related to discards were analysed. This analysis will be published soon.

The first results were as follows; the sum of the recorded discards is 6.8 million tonnes with respect to a total recorded catch of 78.4 million tonnes. The global summed discard rate is 8.0% (quantity of discards as a percentage of the total catch).

Shrimp and demersal finfish trawl fisheries account for over 50% of the total estimated discards while representing approximately 22% of total landings.

Tropical shrimp trawl fisheries have the highest discard rate and alone account for over 27% of the total estimated discards.

Although a time series at the global level is not available, the evidence from numerous fisheries clearly indicates that there has been a substantial reduction in discards since the first assessment was made in 1994. There are two major reasons for this reduction:

- use of more selective fishing gears, the introduction of by-catch and discard regulations and improved enforcement of regulatory measures; and
- an increased retention of by-catch for human or animal food, as a result of improved technologies and expanding market opportunities.

Many factors have contributed to by-catch reduction. The UN resolutions on discards and the activities of FAO have resulted in a significant contribution to this reduction, although the impact of these efforts is not measurable. In particular, promotion of the Code of Conduct for Responsible Fisheries has increased public and international awareness of discards as morally unacceptable waste.

Scientific concerns about the unaccounted mortalities of juvenile fish, fishers' concerns over the impact unsustainable fishing practices on limited fish resources, and improvements in fisheries management and improved enforcement of regulations have resulted in a broad range of by-catch and discard reduction initiatives.

This National Coordinators meeting of a global project, dealing with the development of more environmental friendly technologies is evidence that reduction of by-catch and discards is now a policy for many States, as well as for an increasing number of regional and sub-regional fisheries management organisations and arrangements.

This workshop, held after three years project operation in the middle of the project duration is also considered as a forum for exchange of views, experiences and results of research work between countries and regions and between fishing industry, researchers and fisheries administrators. This broad participation is very much appreciated. However to implement new technologies or other management systems without the people directly involved will not be successful.

I know that many countries around the globe are interested in participating in similar activities or in joining the project, and we should use this Workshop to find how we can involve such countries in our work.

With these opening remarks on behalf of FAO I express my real hope that the coming working days will have fruitful discussions to develop a frame work of activities for the remaining time of the project and for the establishment of a continued cooperation between the participating countries.

Thank you for your attention.

Appendix 4.

Name		Country	E-Mail	Alternate E-Mail	Phone/Fax
Abdulqader	Ebrahim	Bahrain	eabdulqader@bcsr.gov.bh		00973750849 Fax 00973754822
Alio	Jose	Venezuela	jalio@inia.gov.ve		
Bellino	Norman	FAO-Mexico			
Chokesanguan	Bundit	SEAFDEC	bundit@seafdec.org		
Dickson	Jonathan	Philippines	jod_bfar@yahoo.com	bfrnmfd@info.com.ph	+639178588404
Endroyono		Indonesia	endroyono_dkp@telkom.net		+62 21 3519070
Fleischer	Luis	Mexico	lfleischer21@yahoo.com		
Fogelgren	Janne	FAO-Rome	janne.fogelgren@fao.org		+3906 570 52377
Garcia	Adrián	FAO-Mexico			
Marcano	Luis	Venezuela	lmarcano@inia.gov.ve		+58 293 4317557
Marquez	Fernando	Mexico	fermqz@yahoo.com		
Mendez	Ignacio	Mexico	dgips_inp@prodigy.net.mx	imgh2000@yahoo.com	+52 971 7145003 and +529717140386
Moth-Poulsen	Thomas	FAO-Rome	thomas.mothpoulsen@fao.org		+3906 570 55034
Njifonjou	Oumarou	Cameroon	njifonjou@caramail.com	inter_ezphon@yahoo.fr	2377619149
Porras	Antonio	Costa Rica	porrasantonio@hotmail.com	aporras@oirsa.or.cr	2481196, fax 2481585
Rueda	Mario Enrique	Colombia	mrueda@invemar.org.co	mrueda69h@hotmail.com	5754211380, Ext 106
Seefoo	Andres	Mexico	sdt_inp@prodigy.net.mx	y_aseefoo@yahoo.com	+52 971 7145003 and +52 9717140386
Soomai	Suzette	Trinidad& Tobago	mfau@tstt.net.tt		
Thiele	Wilfried	FAO-Rome	wilfried.thiele@fao.org		+3906 570 55836

APPENDIX 5

Closing Speech of Dr. Guillermo A. Compean Jimenez

As you know, the Mexican shrimp trawl fishery is one of the most important in the domestic economy and we have the responsibility to keep this industry in the best healthy state. For this reason, a great deal of effort has been expended to improve the economy of the fishery and at the same time reduce the impact of the fishing gear on the environment.

Several actions have been taken in the last decade such as the establishment of the (VMS) the vessel monitoring system in the whole shrimp fleet, the reduction of 30% of the fleet and the improvement of the fishing gear.

Since September 2004, the VMS system has been in operation in 100% of the shrimp fleet. The reduction of the fishing effort by the retirement of the fleet in 2004 was 15% of the Pacific fleet.

For the improvement of the fishing gear, the Mexican fishing technology group mandated by the management plan of the shrimp fisheries reviewed scientific and technical information relevant to improve the current techniques.

The resulting report and recommendations were to be used by the Mexican authorities as a basis for a proposed plan operated in the 2005 fishing season for research, development and implementation of improved fishing techniques.

Taking into consideration these commitments, I wish to thank all participants in the Global review meeting for sharing their experiences and expertise for the success of this project. I also would like to thank FAO for the coordination, in particular Dr Thiele and Dr Fogelgren.