



**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)

# Colombia

**Progress report to the project coordinator**

**EP/GLO/201/GEF**

**July-December 2005**





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Reduction of Environmental Impact from Tropical Shrimp Trawling, through the introduction of By-catch Reduction Technologies and Change of Management  
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### **Progress Report to the Project Coordinator EP/GLO/201/GEF**

**Country:** Colombia.

**Reporting period:** 6-months from July to December 2005.

**Reporting Officer** = Mario Rueda, Ph.D.

#### **1. List the meetings of the National Steering Committee held: (gives dates, places):**

a) Meeting on the Pacific coast: September 26, Agropesquera Industrial BAHIA CUPICA (Fishing Industry), Buenaventura, Colombia.

b) Meeting on the Atlantic coast: November 18, SENA (Technical Fishery Education Institution), Cartagena, Colombia.

summarize the main points from these meeting, and please provide separately a copy of the minutes, **including names/titles of the participants:**

a) The main points discussed in this meeting were:

1) To present to representatives of the industrial fishing and fishery management the results of the shrimp trawling fishery workshop, focused on the design, build and operation of prototype trawl nets using the fish eye as by-catch reduction device. This workshop was held from June 27 to July 11 2005 in the SENA from Buenaventura being the consultant Mr. Rafael Basto from Mexico. 24 gear technologists received training in design and building of shrimp trawl nets. Two trawl nets were built, whereas two demonstrative cruises on board shrimp commercial vessel were conducted for rigging and operation of the prototype. After the workshop two additional trawl nets were built by the technologists trained, thus 4 nets were completed to conduct the experimental fishing surveys.

2) To analyze the preliminary results of the first experimental survey, where 100 hauls were carried out comparing old nets vs. prototype nets including the effect of the BRD used (fish eye). Without have to the date a sound analysis of data, among the participants was consensus that the prototype nets had good operation. However, the new trawl doors had not optimum performance, thus the complete trawl system did not work 100%. Potential good results for fishers was a save fuel consuming of 23% (data by corroborate), whereas the initial effect of fish eye indicated a reduction of by-catch of 20% (data by corroborate). Fishers indicate that all sizes of fish could escape through the device, so they afraid decrease their revenues of the fishing activity. However, the project staff explained to the fishers about the need of doing a complete analysis with economic data to discuss the true impact of the new technologies. Finally, the project staff with fishers did agree join efforts to do modifications on the trawl doors and net to overcome problems occurred during the first survey. This activity was done taking recommendations of the NET SYSTEM (manufacturer) mainly and the consultant (Mr. Basto).

3) To arrange the logistic for the second experimental survey using two commercial vessels during November 2005.

4) To give a short explanation on the importance of adopting in law the shift of fishing technology.

5) To collect information about the current status of the shrimp fishery.

List of participants of the meeting on the Pacific coast:

<b>NAME</b>	<b>INSTITUTION</b>	<b>TITLE</b>
Mario Rueda	INVEMAR	National Coordinator
Walter Álvarez O.	SENA	Fishing Professor
Wilberto Angulo V.	INCODER	Researcher
Jorge Augusto Angulo	INVEMAR	Researcher
Enrique Herrera U.	INCODER	Fishing Manager
Farit Rico M.	INVEMAR	Fishing Engineer
Wilson González	INVEMAR	Fishing Technician
Hernando Hurtado	INVEMAR	Fishing Technician
Agustín Martínez	A. Martínez y CIA	Fishing industry
Nayibe Madrid	INVEMAR	Biologist
Galo Martínez	ALIMAR	Fisher
Joaquín Chang	LATIN # 2	Captain
Werner E. Bejarano	ALIMAR	Fisher
Carlos A. Rodríguez	ACODIARPE	Fishing industry
Martha L. De la Pava	ACODIARPE	Fishing industry



Figure 1. Participants attending the meeting on the Pacific coast.

b) The main points discussed in this meeting (Atlantic coast) were:

1) To present to representatives of the industrial fishing and fishery management the results of the shrimp trawling fishery workshop, focused on the design, build and operation of prototype trawl nets using the fish eye as by-catch reduction device. This workshop was held from July 12 to 26 2005 in the SENA from Cartagena being the consultant Mr. Rafael Basto from Mexico. 29 gear technologists received training in design and building of shrimp trawl nets. Four (4) trawl nets were built, whereas one demonstrative cruise on board shrimp commercial vessel was conducted for rigging and operation of the prototype. After the workshop 4 additional trawl nets were built by the technologists trained, thus 8 nets were completed to conduct the experimental fishing surveys. **Note:** the vessels on the Atlantic coast use 2 trawl nets by side.

2) To analyze the preliminary results of the first experimental survey, where 80 hauls were carried out comparing old nets vs. prototype nets including the effect of the BRD used (fish eye). Compared with the Pacific coast, any more problematic was the operation of prototype nets using new trawl doors. The doors did not work satisfactorily. Potential good results for fishers was a save fuel consuming of 18% (data by corroborate), whereas the initial effect of fish eye indicated a reduction of by-catch of 22% (data by corroborate). Also fishers indicate that all sizes of fish could escape through the device, so a more detailed analysis is needed to test the hypothesis of fishers. Finally, the project staff with fishers did agree join efforts to do modifications on the trawl doors and net to overcome problems occurred during the first survey. This activity was done taking recommendations of the NET SYSTEM (manufacturer) mainly and the consultant (Mr. Basto).

3) To arrange the logistic for the second experimental survey using two commercial vessels during November 2005.

4) To give a short explanation on the importance of adopting in law the shift of fishing technology.

5) To collect information about the current status of the shrimp fishery.

List of participants of the meeting on the Atlantic coast:

NAME	INSTITUTION	TITLE
Mario Rueda	INVEMAR	National Coordinator
Luís O. Duarte	University of Magdalena	Researcher
Jorge Viaña Tous	INCODER	Fishing Engineer
María Consuelo Corchuelo	INCODER	Fishing Manager
Francisco Machado	SENA	Fishing Professor
Philippe Thiriez	Pesquera Continental S.A	Fishing Industry
Alfonso Falla	Falla Najera y CIA	Fishing Industry
Harley Zúñiga	University of Magdalena	Fishing Engineer
SZ. Filmar Martínez	Capitanía Del Puerto	Fishing Manager
Fabio Zapata	Escuela Naval Alm. Padilla	Fishing Manager
Janeth Rodríguez	COLCIENCIAS	Biologist
Argiro Ramírez A.	INCODER	Fishing Manager

Continuation:

Rafael Bonilla Sánchez	William Velez	Fisher
Yuihi Saijo	OCEANOS	Fisher
Hikaru Fulli	OCEANOS	Fisher
Mónica Silva	SENA	Fishing Professor



Figure 2. Participants attending the meeting on the Atlantic coast.

## 2. Describe the progress of each national project activity

(as listed in the project document, section 4.5 General Workplan and Timetable)

Activities of the workplan during the second six months of 2005.

- a) Conduction of the experimental fishing surveys on both Pacific and Atlantic coasts. Using 2 vessels by coast, surveys were conducted covering different fishing grounds for a total of more than 200 hauls. Each survey took around 20 days and part of samples was proceeding on board.
- b) Identification of fishes, crustaceans, mollusc and other organism in laboratory, which were harvested from the experimental hauls.
- c) Construction of data base with data on by-catch, discards and economic aspects.

The activities as scheduled under the LOA with FAO, are follows:

- a) Establishment of the National Steering Committee: completed. This committee was formed in March 2004 and it is integrated by 11 persons among representatives of fishing industry, fisheries management, academy, support agencies, and fisheries research. Document of the constitution of the steering committee was sent to FAO in 2004 as part of the Progress Report No. 1.

b) Collection of information about fishing technology of the shrimp-trawling fleets on both coasts: completed.

This information was collected from January to July 2004. Technical report with this information was sent to FAO in 2004 as part of the Progress Report No. 2.

c) Shipment of the fishing technology information to FAO Rome: completed.

Technical report (including schemes of the trawl nets) was sent to FAO in August 2004. This report joined information about vessels, fishing machinery, trawl nets, composition of catches, costs and revenues of the fishing activity. This information was sent to FAO in 2004 as part of the Progress Report No. 2.

d) Execution of two workshops and conduction of fishing trials with prototype nets including BRDs: completed.

These activities were undertaken during 2005. Details of these workshops were sent to FAO in the Progress Report No. 3.

e) Conduction of the experimental fishing surveys: completed.

This activity carried out during the second six months of 2005, was resumed in this Progress Report (No. 4).

f) Execution of workshops to present results of the project directed to fishers and managers: Not yet initiated.

g) Presentation of the final technical report: Not yet initiated.

We hope to conduct fishing monitories of by-catch after fishing experiments, once FAO give economic funds for this activity during 2006.

**3. Describe briefly any workshops, training, or demonstration activities undertaken. Indicate location, and number of participants and days.**

No activities as mentioned above were undertaken.

**4. Give other general comments on the current status of the shrimp-trawling industry.**

The number of trawling vessels operating on the Colombian coasts has decreased during the last 14 years. For example on the Atlantic coast, in 2005 only 17 of the 42 registered vessels showed fishing activity. In 1990 the fleet included 120 vessels, decreasing to 52 vessels in 1995 and 60 in 1997. In 1999, 84 vessels were operating, while in 2004 only 53 of them were registered. On the Pacific coast the fleet have decreased of 109 vessels in 1990 to 47 in 2004.

The reduction in the number of fishing vessels were brought about by the decreasing trend in their profits as a consequence of: a) the reduction of the fishing rates, b) the reduction of the shrimp price in the international trade system and c) the high operating costs, mainly represented by fuel costs.

On the Atlantic coast most of the Korean fleet operating at the beginning of the 1990's left the area and in 2005 the most important of the five fishing companies closed by such low profits. In 2005, three of the remaining trawling vessels were modified in order to use them for the long-line fishery of tuna and large pelagic fish. At present 80% of the fleet concentrate its effort in the southern fishing zone of the Colombian Caribbean Sea.

## 5. List the financial inputs (in-kind, in US\$)

### a) by government, for this reporting period:

Item	In-kind	In US\$*	Total
Professional staff	33327	29027	62354
Support staff	0	5032	5032
Travel expenses	0	8672	8672
Operating expenses	3500	10428	13928
Equipment	1353	6000	7353
Other	830	1067	1897
<b>Total</b>	<b>39010</b>	<b>60226</b>	<b>99236</b>

\* For all cases, it has been used a change rate of 2271.55 (January 19<sup>th</sup>, 2006).

### b) by government, from the beginning of the project:

Item	In-kind	In US\$	Totals
Professional staff	122866	66500	189366
Support staff	0	83332	83332
Travel expenses	0	25872	25872
Operating expenses	8200	62500	70700
Equipment	10412	6300	16712
Other	1621	6603	7924
<b>Totals</b>	<b>143090</b>	<b>251107</b>	<b>394197</b>

### c) by the industry, for this reporting period:

Item	In-kind	In US\$	Totals
Professional staff	0	0	0
Support staff	0	11200	11200
Travel expenses	0	0	0
Operating expenses	0	23728	23728
Equipment	8805	1700	10505
Other	0	3200	3200
<b>Totals</b>	<b>8805</b>	<b>39828</b>	<b>48633</b>

### d) by the industry, from the beginning of the project:

Item	In-kind	In US\$	Totals
Professional staff	0	75815	75815
Support staff	0	44800	44800
Travel expenses	0	28094	28094
Operating expenses	0	61746	61746
Equipment	8805	3450	12255
Other	0	9147	9147
<b>Totals</b>	<b>8805</b>	<b>223052</b>	<b>231857</b>

## 6. Estimation of by-catch reduction:

### a) Total Number of shrimp trawlers:

On the Atlantic coast: 53 (main fleet, headquarters in Cartagena). Minor fleet: 7 (operating with only 1 trawl net, headquarters in Tolú, Gulf of Morrosquillo).

On the Pacific coast: 47 (main fleet, headquarters in Buenaventura). Minor fleet: 10 (headquarters in Tumaco).

b) Number of shrimp-trawlers that used BRDs when the project started: zero (0) on both coasts.

c) Number of shrimp-trawlers currently using BRDs: (expand by major-type of shrimp-trawler, if possible):

shrimp trawlers: 2 (during the experimental stage) by coast.

fish trawlers: There aren't.

pair trawlers: There aren't.

**7. List all equipment purchased, indicating date of purchase, serial number, quantity, cost in US\$, and any remarks (for vehicles, give mileage report).**

No equipment was purchased on both coasts during this period.