

## Progress Report to the Project Coordinator EP/GLO/201/GEF

Country: Venezuela

Reporting period (6-months: 01 July to 31 December 2005).

Reporting Officer =

National Coordinator (name /title):

**Mr. Luis Marcano** (Fishery Biologist, Min. Ciencia y Tecnología - INIA)

Assistant to the National Coordinator

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1. List the Meetings of the National Steering Committee held: (give dates, places):

No meeting was held during the second semester 2005. The meeting was called up by the Venezuelan Fisheries Office, INAPESCA, on 10<sup>th</sup> November in Caracas, but neither the project nor INAPESCA, had the funds to cover the travel expenses of the participants from out of Caracas, so it had to be cancelled. The meeting is expected to be called up again in the first quarter 2006. In spite of this, the project coordinators have been informing most members of the NSC about the advances in the project, the results obtained and plans for the short term.

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

2. Describe the progress of each activity

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

**Note:** no financing from FAO-GEF to cover operational costs was received during this period. All activities were supported from local funding, both from INIA and from the commercial sector. The project did cover the salaries of three contracted technicians.

Two main topics were scheduled for the second year of project activities (details of their development are given in section 4 of this report):.

### B.3.1 Problem identification concerning by-catch

This topic was approached through the description of the different shrimp fisheries in Venezuela (5 artisanal and one industrial) and their associated by-catch. In particular, there was a characterization of the bycatch from a relatively new fishery in a southern Caribbean beach. Evaluations included the catch volume and composition; the seasonal distribution of catch and trends in time; the number of fishers involved; the description of gear characteristics and possibilities to be modified through a BRD, or the replacement of the gear by a more environmental friendly one; and the amount and composition of by-catch in each fishery. The edition of field guides for by-catch species identification in each fishery was partially achieved.

### B.3.2 Development/adaptation of by-catch reduction technologies

The validation of one BRD (fish eye) in the artisanal shrimp fishery at the northern Orinoco delta was started. Two industrial nets for testing the square mesh without a sliding panel were set, and the tests are scheduled for the first semester 2006.

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

No demonstrations took place during this period. Two workshops with artisanal fishers and two Mexican consultants were scheduled during this period at Lake Maracaibo and Orinoco delta, but could not be performed. During these workshops, the demonstration of the use of the suripera net and the bottom tangling net for shrimp capture had been planned, as well as the construction of these gears. The workshops are scheduled for the first semester 2006.

4. Describe the progress of each national project activity (as scheduled under the LOA with FAO).

a. Characterize structurally and evaluate the landings by fishing gear used in the shrimp fisheries of Venezuela.

Estimated total shrimp landing in 2005 was 8330 t, about 3000 t landed by the industrial trawlers, close to 5000 t by the artisanal shrimp fishers using beach seines in Lake Maracaibo, 230 t from the artisanal trawlers and 100 t from the beach seines in northern Gulf of Paria and Golfete de Coro). Shrimp landings show a decreasing trend, in severe contrast with the fast rise of the cultured shrimp, which in 2005 is estimated to be above 25000 t. Most of the artisanal landings (94%) come from Lake Maracaibo. The structural characteristics of the gear from all shrimp fisheries, 6 artisanal (Lake Maracaibo, Golfete de Coro, coastal lagoons, southern Caribbean sea, northern Gulf of Paria and in the Orinoco river delta) and the industrial, which uses Florida type vessels, were evaluated and described, in the search for possibilities to reduce by-catch through technical modifications. Artisanal shrimp fishing is performed with beach seines in the shores of Lake Maracaibo, Golfete de Coro, and northern Gulf of Paria. Cast nets are used in coastal lagoons throughout Venezuela (as required by Law), while small trawls are used in the southern Caribbean Sea (Barcelona), northern Gulf of Paria and in the northern Orinoco delta (including interior waters). The industrial shrimp fishery uses Florida type vessels with two nets, and the use of the TED in them is mandatory. The possibility for inclusion of other BRD's, like the fish eye or square mesh is high in the industrial trawls nets. Likewise, there are good chances to install BRDs in the artisanal trawls, like the fish eye or the Nørdmore grid. However, chances to include BRDs are low in beach seines, and unnecessary in the cast net fisheries (since the unwanted catch is mostly released alive back to the water). It has been estimated that fisheries where beach seines are used could benefit from the replacement of the gear by environmental friendlier nets, like the suripera nets or bottom tangling nets, commonly used in other countries. The tests of this new type of gear were scheduled for this period, but could not be organized and are scheduled for the first semester 2006.

b. Characterize the shrimp bycatch in the different fishing gear used in the shrimp fisheries in Venezuela.

By catch varies among fisheries. In artisanal fisheries it reaches between 47 and 90% of the catch, while in the industrial shrimp fishery reaches 94% of the total catch. In general, bycatch represents 91% of the total annual shrimp fishery nationwide (and could reach 90000 t). About 18000 t of the bycatch is landed by the industrial vessels; very little bycatch is landed by artisanal fishers, and if they do it is for self consumption.

The seasonal characteristics of the bycatch in major artisanal shrimp fisheries were evaluated in Lake Maracaibo and Golfete de Coro (in western Venezuela), and this study was started in Barcelona, a locality in eastern Venezuela. Preliminary results of the latter indicate that the fishery takes place close to shore in water with oceanic characteristics. The target species is the white shrimp, *Litopenaeus schmitti*, but a locally cultivated foreign white shrimp, *L. vannamei*, was also observed in the catch. The size structure of the shrimp resembles that of the industrial shrimp catch. The bycatch represented 90% of the catch, and it was not landed, except for some fish for self consumption.

c. Field guides to aid in the identification of by-catch in the shrimp fisheries of Venezuela.

The lists of species of fish, crustaceans and molluscs of the bycatch in several shrimp fisheries have been compiled. The field guides are in preparation; the one for Orinoco delta is completed.

d. Test gear modifications that aid in the release of fish from artisanal shrimp gear.

There were two campaigns performed, one in the Orinoco delta to do validation tests of the "fish eye" in the artisanal trawl, and another to a southern Caribbean beach in front of Barcelona, eastern Venezuela to characterize its gear and the catch. In the Orinoco delta, previous tests with the fish eye showed that bycatch was could be reduced by 54% with a non

significant shrimp loss (although it reached 16%). Six vessels with observers on board during two days were used for the validation tests, all using the regular commercial nets of the fleet. The fish eye was installed in the nets of three vessels, at 1,5 m away from the end of the sac, a distance that was chosen by trial and error during the experimental tests of this BRD. The commercial net has 9 m in the upper rope and 17 m in length, while the experimental net was a twin set, each with 4,5 m in the upper rope and 9 m in length. The mesh in the commercial net is 35 mm in the body and 27 in the sac, while the experimental net has mesh of 51 mm in the body and 32 mm in the sac. Only a 4% reduction of bycatch was achieved, and it is supposed that the fish could not access effectively the exit. New trials with the fish eye paced closer to the end of the sac are scheduled for the first semester 2006.

The visit of two Mexican consultants had been scheduled for November 2005, but could not be achieved for organizational problems. It was rescheduled for the first semester 2006. The consultants were to bring two types of artisanal gear: the suripera net and the bottom tangling net, along with material to construct them with local fishermen. The authorization to buy the netting material in Mexico was obtained from the coordinator of the FAO-GEF project in Rome.

e. Test gear modifications that aid in the release of fish from industrial shrimp gear

Two industrial nets were purchased and one of them was set for fishing with a square mesh in front of the sac, without a sliding panel underneath, as was recommended by FAO consultants. Field tests could not be organized for lack of vessel, and are scheduled for the first semester 2006.

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

The shrimp-trawling industry in the country persists in the decline in number of vessels in operation. In spite of the recent important (27%) reduction of operating vessels, from 365 at the end of 2001 to 265 in 2005, the vessels currently operating do not seem to be performing well. There is not an evident increase in the CPUE of shrimp and fish, as expected from that reduction in effort. It seems that illegal sales of valuable catch offshore persist and that this fact represents a major drawback for the performance of the industrial fleet.

In the other hand, the number of fishers involved in artisanal exploitation of shrimp keeps in the rise, as unemployment in the country maintains very high levels. Since 2000, a new fishery using trawl nets started in Barcelona, eastern Venezuela, and there is a tendency for this gear to spread to other coastal shrimp fisheries in the country. The impact of the artisanal trawl in marine areas seem to be more severe than in the Orinoco delta (where the gear has been legally used since 1990), because the proportion of bycatch in the capture is higher. Thus, if there is no control of the spread of the gear, the impact over local fin-fish coastal fisheries may be intense.

6. List (for this reporting period) the financial inputs (in-kind) by government:

e.g. professional staff (m/m): 8 researchers x 6 months x 20% of their time = 10 m/m  
support staff (m/m): 4 technicians x 6 months x 20% of their time = 5 m/m  
travel expenses: none  
operating expenses: US\$ 1860.  
equipment: None was purchased by INIA during this period, but several pieces of equipment of this institution were used.

by industry:

e.g. professional staff (m/m): none  
support staff (m/m):  
travel expenses: none  
operating expenses: 16 trips in comm. boats x 1 day each x US \$100,00 ea.= US \$1600,00  
equipment: none

7. Estimation of by-catch reduction:

Number of trawlers: 338 (270 industrial + 68 artisanal)  
 Number of shrimp-trawlers currently using BRDs: (expand by major-type of shrimp-trawler (if possible)):  
 260 using TED  
 shrimp trawlers 328 (260 industrial + 68 artisanal)  
 fish trawlers: 10  
 pair trawlers: none (legally). Less than ten illegally operating in northern Sucre state.  
 Artisanal trawlers: 68 (40 operating in the northern Orinoco river delta, although only 12 are legally permitted; 3 operating illegally in northern Gulf of Paria, and about 25 operating in Barcelona, southern Caribbean Sea)

8. List any equipment purchased, with indication of price and present location of the item(s).

Number pieces	DESCRIPTION	DATE OF PURCHASE	Price paid US\$	Location at INIA Stations
2	Outboard engines 75 HP Yamaha	Semester II 2004	15296	Cumana, vessel NABARIMA
1	Electric plant 1 kW	Semester II 2004	950	Cumana, vessel NABARIMA
1	Video digital camera	Semester II 2004	976	Cumana
2	Digital camera	Semester II 2004	680	Cumana
6	Desk top computers Dell Optiplex GX270	Semester II 2004	18360	4 Cumana, 1 Punto Fijo, 1 Maracaibo
2	UPS	Semester II 2004	900	Cumana
6	Voltage regulators	Semester II 2004	420	4 Cumana, 1 Punto Fijo, 1 Maracaibo
2	HP Color Laser printers	Semester II 2004	2140	Cumana
4	HP deskjet 5150 printers	Semester II 2004	950	2 Cumana, 1 Punto Fijo, 1 Maracaibo
1	Laptop Dell Latitude 100L	Semester II 2004	2370	Cumana
2	Fire extinguishers	Semester I 2005	256	Cumana, vessel NABARIMA
4	GPS	Semester I 2005	2160	2 Cumana, 1 Punto Fijo, 1 Maracaibo
1	Binoculars	Semester I 2005	221	Cumana
1	Whip Antenna and installation of 3 radio units	Semester I 2005	930	Cumana, vessel NABARIMA
2	Radios VFH. One fixed and one mobile	Semester I 2005	1120	Cumana, vessel NABARIMA
2	Freezers	Semester I 2005	2000	Punto Fijo

1	Video beam equipment	Semester I 2005	2051	Cumana
2	TV set 29"	Semester I 2005	1120	1 Cumana, 1 Maracaibo
2	DVD sets	Semester I 2005	172	1 Cumana, 1 Maracaibo
2	Refractometers	Semester I 2005	800	1 Cumana, 1 Maracaibo
4	Thermometers	Semester I 2005	200	2 Cumana, 1 Punto Fijo, 1 Maracaibo
4	Digital Vernier - Caliper	Semester I 2005	480	2 Cumana, 1 Punto Fijo, 1 Maracaibo
2	Scales, with capacity 6 kg, 0,1 g preciss.	Semester I 2005	1800	1 Cumana, 1 Punto Fijo
3	Air conditioned sets	Semester I 2005	1395	Cumana
1	Antenna matcher (ICOM MN100)	Semester II 2005	651	Cumana
Total			58 398	