

# Socio-economic Impact of the Closed Season for Lobster in Corn Island. RAAS-Nicaragua

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## ABSTRACT

Nicaraguan water was considered as an open access in which no regulation would comply. The close season mainly for lobster is a regulation that Nicaragua national government began to apply in June 2000.

The Municipality of Corn Island is composed of two islands, Great Corn Island and Little Corn Island; both islands are 100% fishing communities. The islands are situated around 83.3 km east of the city of Bluefields, South Autonomous Atlantic Region (RAAS) of Nicaragua. Great corn Island has an area around 23½ km<sup>2</sup>, composed of five neighborhoods.

The spiny lobster, *Panulirus argus*, is one of the principal fisheries resources for exportation captured in the Caribbean sea of Nicaragua, and it is the resource that generates the highest income for the populations of the Corn Islands. Due to the low volume of lobsters captured in the last few years, a closed season for this resource was implemented.

The objective of this study, is to determine the impact of the closed season, to evaluate what is the effect in the life of the islanders before, during and, after the closed season, and what solution they can propose to do during the closed season to generate income.

This will serve as a guide for decision makers or coastal managers as a previous consultation that can be used to promote the proposals that can emerge during the study.

To obtain this information it was necessary to interview key informants and a focus group, utilize a questionnaire, obtain secondary data, and direct observation.

KEY WORDS: Spiny lobster, close season, socio-economic, Nicaragua

## Monitoreo Socio Económico de la Veda en Corn Island RAAS de Nicaragua

Las aguas Nicaragüense es considerado como de libre acceso en donde ningún tipo de regulaciones se cumplen. La veda especialmente para la Langosta es una normativa que inicio desde Junio 2000 por parte del Gobierno nacional.

El municipio de Corn Island esta compuesto por dos islas, la isla Pequeña del Maiz y la Isla Grande del Maíz, en donde los habitantes de estas islas son meramente pesqueros al 100%. la isla esta situada alrededor de 83.3 km al este de Bluefields cede de la Región Autónoma del Atlántico Sur de Nicaragua. La

isla grande del maíz tiene una extensión alrededor de 23 ½ km<sup>2</sup> y esta compuesto por cuatro barrios.

La langosta Espinoza *Panulirus argus* es uno de los recursos pesqueros mas importante de captura y exportación en la Costa Caribe Nicaragüense. Y es uno de los recursos que genera mayor entrada de divisas para los Cornileños. Pero debido al bajo volumen de captura en los últimos años, el sistema de veda para la langosta a sido implementado.

El propósito de este estudio es saber cual ha sido el impacto causado por la veda en la vida de los cornileños antes, durante y después de implementar la veda y que soluciones proponen ellos para generar divisas y para poder sobrevivir durante este periodo.

A la vez esto le serviría como guía para los tomadores de decisiones y manejadores de áreas costeras como una consultoría previa que puede ser usado para promover propuestas de desarrollo que pueden generarse durante el estudio.

Para la obtención de información se vera necesario realizar entrevistas a informante claves y grupos focales. Se ara una lista de preguntas y uso de datos secundarios si están disponibles.

**PALABRAS CLAVES:** Langosta, la veda, socio-económico, Nicaragua

### INTRODUCTION

The fishing grounds around Corn Island, an island located on the Caribbean coast of Nicaragua, form one of the country's most important lobster fishing areas.

During the 1990s the fishery developed tremendously, and the lobsters high unit prices and revenues are of great importance to the poor region that holds few other economic alternatives. The foreign exchange generated by the lobster fishery has been a significance source of revenue for the impoverished government, but it has also lead to over exploitation of the species.

Lobster fishing had always been a very important economic activity for the island but became even more vital after hurricane Joan hit Corn Island in 1988, devastating 95% of all standing structures, and destroying all the palm trees on the island, as well as the copra factory. Currently, the economy of Corn Island primarily depends on the lobster fishery, and all economic activities are somehow related to the lobster fishery. A closed season was established because of the problem of overexploitation of the resource in the area by the Nicaraguan government which included all national and foreign vessels. Nonetheless, management of the Corn Island lobster fishery during the last decade has so far proven unsuccessful, and Nicaragua does not have a fishery management plan for this species..

Initial legislation, submitted in 1961 was approved in February 2004, with the National Assembly approving only Chapter I that has nine articles, related with the administration of the resource.

## Objectives

*General Objective* — To evaluate the social-economic impact on the populations of Great and Little Corn Islands before, during, and after the closed season for lobster in 2003.

*Specific objectives* —To evaluate the specific impacts on the island fishers after the closed season, and to identify solutions that stakeholders can propose for the future.

## METHODOLOGY

### Use of *SocMon* Guidelines

In order to examine social and economical aspects, this study surveyed perceptions of fishers in the Corn Islands towards (indicators):

- i) Reasons for decline in the fisheries,
- ii) Income before, during and after the close season,
- iii) Current and potential regulations, and parties responsible for the recuperation of the lobster stock, and
- iv) Find new alternative to survive during the close season.

Information was also collected on their socio-cultural background (ethnicity, age, origin, religion, etc.) and fishing technique, and type and size of vessels used in order to enable an analysis of what factors determine different interest groups within the fisher community.

Data collection through secondary sources, data collection through key informants, nearly 100 fishers and household were interviewed with the help of students URACCAN, also data collection through observation was done. Preliminary results of the study were presented to members responsible of Natural Resources of the municipality and members of the Regional council in Bluefields, where the current state of the lobster fisheries and problems with enforcement of management were discussed.

## SITUATION OF THE LOBSTER FISHERY:

### Lobster Landings

Table 1 shows the total yield report from landings of the spiny lobster obtained from fishery effort within the period of 2000 to 2003.

Along the Caribbean Coast of Nicaragua during the year 2003, the capture and lobster fishing effort of the industrial national fleets registered was 1,234 thousand pound tail; 13 % less than year 2002 with a fishing effort of 13, 566 fishing days using 53 boats with traps, and 4,193 trips, including 24 boats which 10 of them were diving during that year.

Yield from the artisanal fishery was 1,295 thousand pounds, a reduction of 9% compared to 2002.

Table 1. Exportation of spiny lobster from Nicaragua (x 1,000 lb).

Year	2000	2001	2002	2003	Variation %
Lobster tail	4,198	2,684	2,959	2,579	- 13
Lobster (whole)	1,041				
Lobster (meat from tail)	4,41				
Lobster (meat from head)	254	190	163	144	

### Industrialization

In the year 2003, the processing companies in Nicaragua generated a production of 26,168 thousands pounds (fresh, frozen, and iced product). The Caribbean Coast had a production of 9,690 thousand pounds, with the principal products shrimp and lobster. The Pacific provided 16,478 thousand pounds obtained mainly through shrimp and fish farming.

The processing production of fish on the Caribbean coast increased 2%, from the year 2002. For the lobster fishery, Nicaragua exportation had a reduction of 12 % for the year 2003.

### The Study Site

The spiny lobster of the Caribbean (*Panulirus argus*) is distributed from the United States and Bahamas through Brazil, including the Caribbean Islands. (Barnnuty 1998).

The chosen location for the SocMon study was a pair of small inhabited islands on the vast Caribbean coastal shelf of Nicaragua known as the Corn Islands or Las Islas del Maiz (in Spanish). The largest of the two islands, Great Corn Island are situated around 83.3 km east of the city of Bluefields South Autonomous Atlantic Region (RAAS) of Nicaragua. The islands are volcanic in origin and composed by five different neighborhoods.

It has a population of over 6,500 and is just 5 km long from the north to the south, covering an area of 10.3 km<sup>2</sup>. Little Corn Island is located 15 km to the northeast of Great Corn Island and is just one half the size with around a tenth of the population. Most of the inhabitants are of Creole origin, and the predominant language in the Corn Islands is Creole English, although Spanish and Miskito are also widely spoken document, Corn Island)

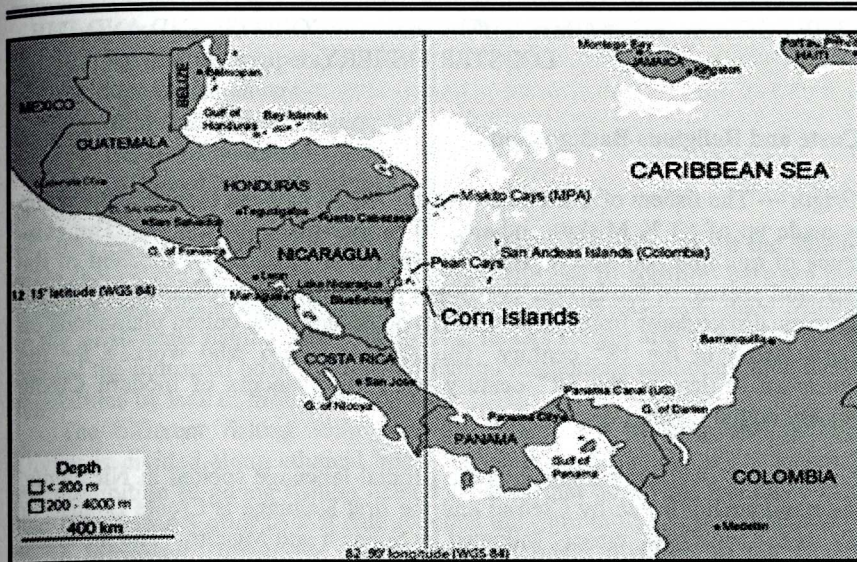


Figure 1. Location of the Corn Islands RAAS-Nicaragua

Until 1988, the main source of income for the islanders was light processing of coconuts and seafood, lobster in particular. However, in 1988 Hurricane Joan struck a devastating blow to the islands, destroying the majority of the coconut trees. Partly as a result of the storm the fishing industry has become the main source of income, and the population is almost entirely depending on the fisheries.

The island is characterized by a wide variety of ecosystems with the presence of wetlands and numerous species of mangroves as well as coral reefs on the northern shore. The climate is humid tropical; the average monthly rainfall is 50 mm, with highest rainfall (150-300 mm) occurring between July and December. The mean annual temperature is 27°C (10°C seasonal range), with prevailing winds from the northeast.

The annual population growth is estimated at 3.9% and significant seasonal population movements. The extensive population growth has already led to increased urbanization on the island, particularly in the Brig Bay area on the western side of the island, where 65% of the population is located. The vast immigration has led to an ethnically more diverse population (including Mestizo, Miskito, and Creole) which has put further pressure on social stability in the community.

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THE SOCIAL – ECONOMIC SITUATION OF CORN ISLAND AND THE  
LOBSTER FISHERY

### Caste and Religious Background

*Origin* — The fishers of Corn Island do not form an ethnically homogeneous group. It is made up of 40 % Miskito Indians, 30 % mestizo, 30% Creoles. The existence of multiple population groups constitutes a fundamental element of the past and present of the Island. The island has been mainly inhabited by Black Creoles, descendants from African slaves working on the cotton plantations on Corn Island in the 18<sup>th</sup> century. The African slaves who worked for the European settlers in the 18<sup>th</sup> century were the founders of modern Creole society on the Coast.

*Language* — Although Spanish is the official language spoken in Nicaragua, the municipality is run by Creoles and the first language is Creole English or the so-called *spanglish*, closely followed by Spanish and Miskito. The mestizos, who migrate from the Pacific side of Nicaragua, usually only speak Spanish, although the Creoles are bilingual in both English and Spanish. The Miskitos are trilingual, speaking Creole English, Miskito and Spanish.

*Religion* — The Miskitos are almost all members of the Moravian church, the mestizos are mostly Catholic, and the Creoles are distributed over different religions; Moravian, Anglican, Adventist, and Baptists (Corn Island 2002: 10, interviews 2004).

*Migration* — The population increased from 3,000 Black land-holding Creoles in 1993 to around 6,500 residents in 2000. (CSE 2002). A group of around 1,000 people irregularly migrates to the island (Meltzoff and Schull 1999: 12). The immigrants are mostly Miskito Indians, mestizos from the Pacific, and Black-Creoles from the Atlantic Coast (Bluefields). These people move from their villages on the Atlantic coast to Corn Island in the lobster season, and migrate back to the mainland when the closed season for lobster is declared.

### The Lobster Fishery

The spiny lobster is a rather sedentary species, exhibiting well-defined seasonal migratory patterns, and within a geographically limited range. Because of its sedentary nature, management should be easy to facilitate for this resource in comparison with other species.

The lobster fishery is divided into two sectors by the Fisheries Administration of Nicaragua (Moreno 2000: 25): 1. small-scale and 2. industrial sector.

These two sectors are further defined into five different fleets:

- i) Small-scale trappers,
- ii) Small-scale divers,
- iii) Industrial national divers,
- iv) Industrial national trappers, and
- v) Industrial international trappers

The first 25 nautical miles around Corn Island are reserved for the small-scale fishers, but the territorial lines consistently lead to conflicts between the industrial and small-scale fishers, since industrial boats have continued fishing in the small-scale fishing area. Small-scale fishers are not able to make a stand against the industrial boats, and governmental institutions cannot enforce these regulations by lack of means.

The different fishing techniques for lobster are trapping and diving. Diving is divided along ethnical lines. Since 1999, the government declared the prohibition of giving fishing license to boats that do diving, but those that had their licenses prior to that date retained the right to do diving. According to an informant, diving for lobster attracted many miskitos to the Island thereby causing a radical demographic change.

In Corn island there are approximately 150 – 200 permanent divers. They go diving one time per day.

### Income Activity

The mestizos living on the islands are mostly shopkeepers and the leaders of commerce. The Creoles work in the processing companies (Pacific Seafood of Nicaragua - PASENIC S.A and Central American Fishery - CAF) in the island the Island; women are mainly contracted to do processing, and men go fishing on fishing vessels. The Miskito Indians, however, are divers and compete with the native Creoles for the same lobster resource.

The more wealthy Creole fishers are trappers, able to invest in their gears and boats. Most of the islanders own one or two boats (length: 4 – 7 meters) and out board engine (75 - 150 HP). These owners contract a helper when is time to go to fishing ground, the catch sell and the helper get the 25 % of the profit. If the owner has a son that can go fishing with him, the share of profit is equal.

Miskito divers are poor and unable to invest in trapping gears. Therefore, they depend on the low-capital input diving industry or small scale diving activity by going fishing with someone that's own a boast.

The average incomes for households are represented in the following graph (Figure 2). As it can be appreciated, most of the women in the households do not count as part of the family income; they depend on their husband or someone else in their family to survive. Most of these have low level of education. Those who respond that their income was between 2,000-3,000 cordobas per month are those who are working for the state (Alcaldia, ENEL, ENITEL).

“Ship out” is another alternative for source income in the island. In this case the young generation choose this option. They say that rather than fishing everyday to gain a small amount of money, they would rather go on a ship to the United States where they can make a constant salary, maintain themselves, and send some money to their family to help them survive during the closed lobster season.

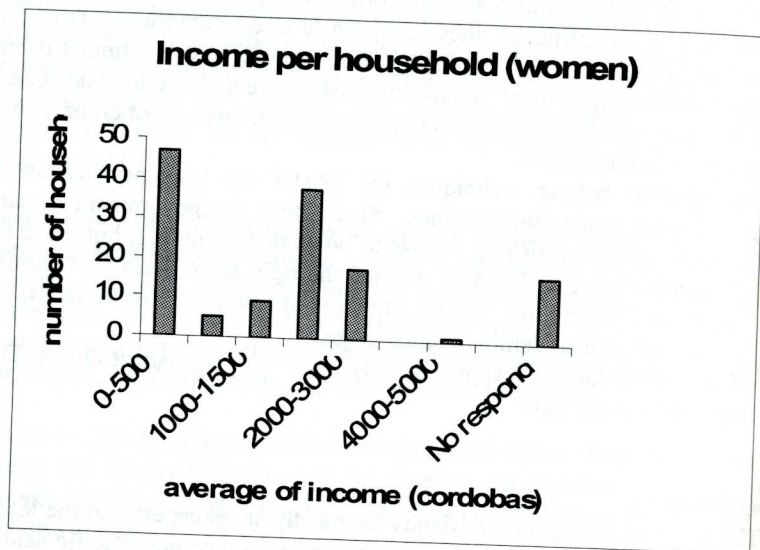


Figure 2. Average income per household on the Corn Islands RAAS—Nicaragua

The fishermen in the island making the highest annual income were the owners of boats, gears and engine, although most of them could not accurately estimate their total income.

Figure 3 represents the income per fishermen per week on the island. This graph compares how much money they was earn before and during the closed lobster season and the impact it has on their daily livelihood.

Because of the reduction of their income, the islanders have to change completely their lifestyle. There are no recreational activities; families that usually travel to Bluefield's to make shopping or to visit their family, decide to remain on the island until the closed season is over. Families whose children study off the island do not have the money to pay the fee. They buy the necessary things needed and limit themselves to other things; in place of drinking coffee with milk, they drink black coffee.

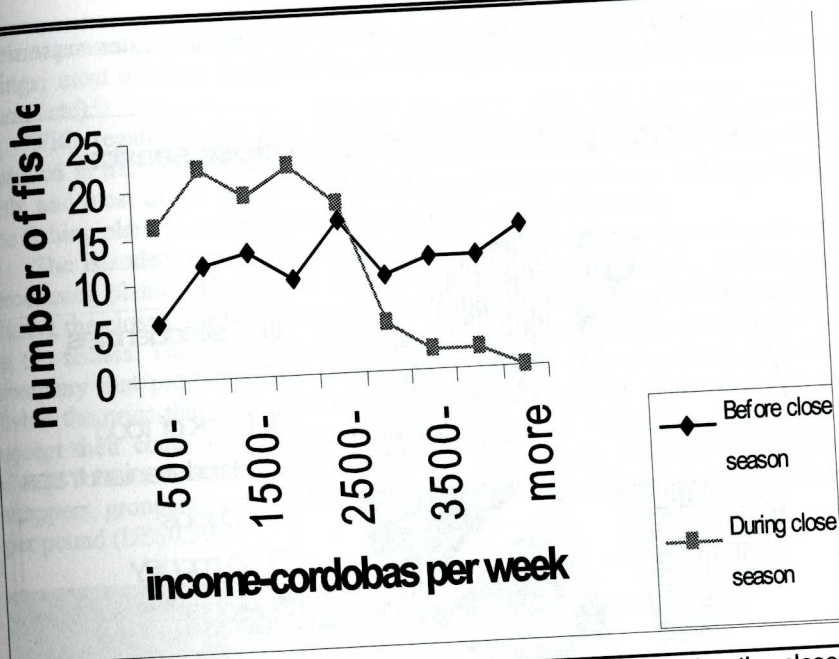


Figure 3. A comparison of fishermen income before and during the closed lobster season on Corn island

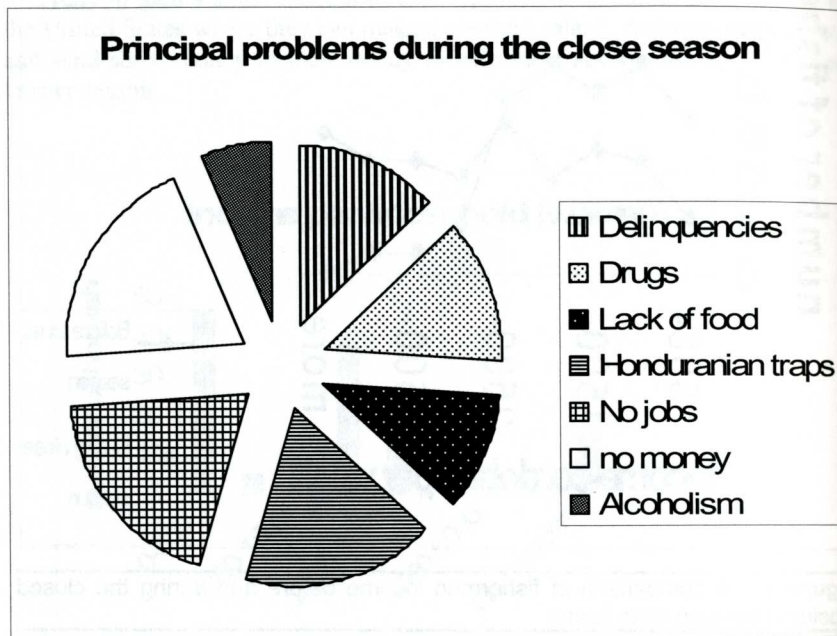
The Creoles blame the divers for ruining the lobster stock and for emptying their lobster pots at sea. While the Creole municipality would like to ban the diving industry on the island, but they are not able to prohibit diving as long as the central government still supports the diving industry..

There are two small-scale fishing organizations that they call: 1) The Fishing Union, constituted by the Black Creole trappers, and 2) the Sea Divers Cooperative, constituted by the Miskitos. These organizations are not very successful in influencing management of the fishery, however, they represent the community of Corn island.

The Miskito divers would have no alternatives to diving or money to shift to trapping since they lack the collateral to borrow money, and the Creoles would rather see them leave the Island. They do not hold enough power to demand a higher price or influence the plants' strategy. Fishers and their families do not have a history of association and institutions that work within the community. Therefore, community members have little training in collective action, representation, and reflection both within their own local community and in comparison with the larger society.

It is complex for the different fishing groups: small-scale Creole trappers; small-scale Miskito divers; industrial Miskito divers; and industrial Creole trappers, to co-ordinate their activities. The different groups do not share the same culture, language, backgrounds, or goals. The natives are worried of the situation of reduction of the fishery to their customs and as resource.

The type of problems identified during the closed lobster season is summarized in Figure 4.



**Figure 4.** Principal social problems associated with the closed lobster season on the Corn Islands—RAAS, Nicaragua

Social problems include delinquencies of payments, access to money because of the absence of jobs (no other alternatives), the low value of the fish catch sales that do not cover fuel costs, and an increase in traffic and consumption of drugs and alcohol. Those who sell have money; those who do not, steal and create insecurity on the island. Taking into account all these problems, the islanders also expressed their concern with Hondurans who left their lobster traps in the water, damaging the bottom and causing ghost fishing during the closed season. To solve this specific problem, the Pacific Sea Food Company (PASENIC S.A.) pays islanders for each Honduran trap they extract from the sea and deliver to them, providing an additional source of income to the islanders.

Stealing and violent crimes are common, but the islanders express that these acts are done by immigrants. They recommend that police should enforce the law. Polices are limited on the island, in the case of Little Corn Island there are no police officials; they call it the Island of No one.

The closed lobster season is composed of two different groups: those who are prepared for the closed season who are the boat owners (artisanal – Industrial), and those who are poorly prepared, who work for the owners of these boats.

The commercial sector express that they have a reduction in the demand of production, as people normally buy rice, beans, and sugar which do not cover

their expenses to maintain their family, no money to purchase clothes or other things; most of them do not have money to pay their basic bills (light, telephone etc).

With regard to the two fishing industries, their activities are greatly reduced in the closed season, with a minimum number of workers processing fish, and most of the effort is dedicated to restoring, repairing, and upgrading the fishing plant in order to comply with FAO quality standards.

The islanders express that a large portion of the fishers depend on these processing plants. The lobster fishery depend on PASENIC S.A. Before and during the closed lobster season, the companies provide money or fuel and ice to the fishers. Therefore, the fishers are obligated to sell their product to the company that provides them these basic materials. The company pays the fisher the price that they establish, and the fishers have no alternative than to accept their conditions and prices in order to repay their debt. During the closed lobster season, fishing activity still takes place, primarily fishing for snappers, groupers, and kingfish, with prices oscillating between 6-9 cordobas per pound (US\$0.50)



**Figure 4.** Fishers' perception of the appropriate length of time for a closed lobster season. Answers are presented as a percentage of those fishers interviewed (Series 1).

Most of the islanders agree with the closed lobster season; to determine the level of agreement, the following questionnaire was done. Do you agree with the closed season? How long the close season should be? Figure 4 demonstrates their level of agreement. Everyone understands the importance of the closed season, and they do recognize that it is needed. Some express their feelings around the issue and make remembrance from the pass. You can appreciate that out 159 people that this question was asked, 57 of those responded that the closed season is fine and that they can survive during this period (three months) with their savings. They express that the two first months they passed it ok, but the most difficult month was the third; but they have hopes that when the close season is over they can get back on their feet, hoping that the catches will be higher, so they can prepare themselves for the following closed season. Thirty two of them expressed that the closed season shouldn't be just for three months, but rather it should be for more than three, some gave examples of other countries, such as Hawaii and Jamaica, where the lobster fishery collapsed and a closed season was established for years.

#### **Reason for Decline of the Lobster Fishery**

The fishery is becoming less lucrative as fishers have to go further off shore to find lobsters. Additionally, fishing effort has increased significantly as many fishers have doubled or tripled their amount of traps; an investment that has not paid off, but left many in debt.

According to the interviews the main reason for decline is thought to be over-exploitation from the national and international industrial fleets (introduction on the Hondurarian fleets and miskitos divers migrated to the island) due to a lack of enforcement of regulations limiting the fisheries. Due to lack of funding and resources, the present regulations (size-limits, protecting spawning lobster and closed seasons) have proven difficult to enforce. The current development of the fisheries has led the authorities to increase regulations.

Fishers express that the central government has been giving out fishing licenses to foreign vessels without involving the regional governmental institutions, which have requested a stop to the foreign licenses, and without taking the overexploitation into consideration.

#### **Lobster Regulations**

The Ministerio Fomento Industria y Comercio (MIFIC), have been implementing regulations such as:

- i) Closed season:
  - 2002 01<sup>st</sup> March – 01<sup>st</sup> April.
  - 2003 01<sup>st</sup> March – 01<sup>st</sup> May
  - 2004 01<sup>st</sup> March – 29<sup>th</sup> June
  - 2005 01<sup>st</sup> March – 30 July

