

## **FISHERIES MANAGEMENT IN DOMINICAN REPUBLIC: THE ROLE OF INTERNATIONAL COOPERATION FOR RESPONSIBLE FISHERIES**

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### **ABSTRACT**

The Dominican Republic shares the island of Hispaniola with Haiti. The country has a total area of 48,442 km<sup>2</sup>, a narrow insular shelf of 9,484 km<sup>2</sup> and an EEZ of approximately 238,000 km<sup>2</sup>. Around 10,000 fishers with a fleet of 3,750 boats, operate from the 1,575 km of coastline to exploit the fisheries resources of the country. Fishing is mainly artisanal, with high levels of import accounting for more than 50% of local fish consumption. With average annual production of 13,000 MT, the fishery is believed to be exploiting the traditional resources at or beyond their maximum sustainable yields.

Preliminary assessments made by team members of the Caribbean regional Mechanism confirmed that there are major deficiencies in the institutional and organizational system for sustainable development and management of the fisheries and aquaculture resources. Significant improvements are needed in: the institutional arrangements and capacity for planning and policy formulation; the systems and capacity for research and collection of data; and the arrangements for extension services, monitoring, control and surveillance as well as compliance with international agreements. There is also a need for greater organization and involvement of fishers in fisheries planning and decision-making regarding the fisheries. On the positive side there is strong political will to improve the fisheries sector with the support of national and international partners. In this paper a review of past and current management measures as well as the role played by international cooperation agencies to responsible fisheries in the Dominican Republic is discussed

**KEY WORDS:** Fisheries management, international cooperation, Dominican Republic

### **INTRODUCTION**

The Dominican Republic (DR) is located in the Caribbean (19 00 N, 70 40 W) occupying the eastern portion of the volcanic island of Hispaniola (the second largest island on the Antilles) which it shares with Haiti. The total area of the country is 48, 442 km<sup>2</sup> and the total population has been estimated at 8.5 millions. The Dominican Republic is bordered by the Atlantic Ocean to the North, the Caribbean Sea to the South, Haiti to the West, and separated from Puerto Rico by the Mona Passage to the east. It has a continental platform of 9,484 km<sup>2</sup> (Arvelo, 1974), an Exclusive Economic Zone of 238,000 km<sup>2</sup> and a coastline of 1,575 km. The biological diversity of the Dominican Republic includes broad areas of coastal lagoons, mangroves, sea grass beds, coral reefs, soft bottom areas and sandy beaches.

Under the fisheries component of the European Union funded Integrated Caribbean Regional Agriculture and Fisheries Development Programme (ICRAFD) in June 2000 the CARICOM Fisheries Unit (now the Caribbean Regional Fisheries Mechanism, CRFM) initiated a program to improve fisheries management, in collaboration with the government of the Dominican Republic. As part of the initiation process a fisheries country profile was prepared based on the literature available. A team of fisheries professionals from the CRFM then visited the Dominican Republic in July 2000 to assess the situation on the ground, meet key stakeholders and gather information to prepare a five year work plan to strengthen fisheries management in the DR. The team gathered information through literature review of existing documents, discussion sessions with the Director and staff of the fisheries department, and meetings with policy makers and other stakeholders in the fisheries sector. Information was also collected through a "in de ground" multi-disciplinary survey. As a result of the review and survey, a 5-year work plan was prepared, jointly signed by the Minister responsible for fisheries and the CRFM, and is in the process of implementation. Since the inception of the CRFM fisheries work plan for the Dominican Republic, important socioeconomic and political events have taken place which in turn affects the fisheries sector. These events are discussed in light of on-going management actions.

## **SURVEY AND LITERATURE REVIEW RESULTS**

The fisheries sector is made up mainly of small-scale operators with an average annual production of 13,000 MT and import accounting for more than 50% of local fish consumption. The most important problems in the fisheries sector in Dominican Republic are: overfishing, inadequate monitoring, control and surveillance; lack of economic support for fisheries management, and environmental degradation resulting in stock depletion due to the use of destructive fishing gears and practices; lack of funds to acquire suitable equipment and accessories to experiment with innovative, and sustainable fishing techniques; lack of effective participation of resource users in fisheries governance; lack of appropriate technology and infrastructure for fish handling, storage and distribution of the catch, problems with marketing the produce during certain seasons of the year, illegal, unregulated and unreported (IUU) fishing specially in foreign waters, and not fully compliance with international fisheries regulations such as the Convention on International Trade in Endangered Species (CITES).

### **Fishing activities and fishing fleet**

Fishing contributes approximately 0.5% of the country's GDP. The number of artisanal fishers have been estimated in 10,000 who operated from a fleet of 3,750 boats (Colom, et al. 1993; Department of Fisheries, 2002). The labor force in the secondary sector has been estimated at 2,500 while 46,500 persons are employed indirectly in the fishing sector. About 50% of fishers have attained primary level education. Although fishing activity is mainly artisanal, there exist some level of semi-industrial and industrial fisheries that take place on the high seas or in neighboring countries including Turks and Caicos, Jamaica and Bahamas. The legal status of Dominican vessels and fishers operating overseas is not well established.

Marine fishers land their catch at approximately 200 landing sites in 16 coastal provinces. Silva (1991) reported that 324 species of fishes (287 bonefishes), crustaceans and mollusks have been identified in the coastal-artisanal fishery of the southwestern Dominican Republic. The main species groups targeted by the commercial fisheries are lobsters, conch, shrimp, shallow shelf and deep-slope reef fishes, and coastal pelagic fishes.

Imports of seafood products include finfish, crustaceans, mollusks, fish food, nauplius of *Artemia*, ornamental fishes, turtles, etc). Dominican Republic's main seafood exports are queen conch, finfish, crabs, ornamental fishes, coral pieces, turtles, conch shell, etc.

Aquaculture is also making a small but increasingly important contribution to the economy of the Dominican Republic. There are 167 hectares of aquaculture ponds in operation, 127 hectares of which are managed by the private sector. The main species cultured are tilapia, carps and marine and freshwater shrimps. The aquaculture production is aimed at supplying both internal and external markets. The government operates a twenty hectare research and hatchery facility to produce juveniles to replenish dams, rivers and lakes, and also for the promotion of rural aquaculture. Aquaculture production in 2000 was approximately 488 MT. Ornamental fishery is a small sub-sector of the marine fisheries. Three establishments located in Montecristi capture and export at approximately 33 species of ornamental fishes. From 1996-2002 the average number of ornamental fishes exported from the DR was 34,317 each year.

### **Status of the fisheries and fisheries management**

The fisheries of the Dominican Republic are multi-species in nature. As a consequence, there is limited flexibility for managing individual species, except for queen conch, lobster and large pelagics. Management necessarily will have to be aimed at optimizing yield from the entire shelf and not on a species-specific basis (Appeldoorn and Meyers, 1993) with the exception of individual species that are at the same time, trade products and protected resources, such as queen conch which trade is regulated by CITES. Overfishing, the use of destructive fishing techniques, rapid growth in fishing effort (number of fishermen, boats and fishing gears) are jointly driving a steady reduction in the abundance of commercially important species such as lobster, conch and finfish.

One of the main sources of conflicts in Dominican fisheries is the exploitation of the queen conch, *Strombus gigas*. The queen conch was up to the year 2000, the most important fishery resource of the Dominican Republic in terms of volume of catch. It is exploited for both local consumption and export. Local stocks are considered overfished and several populations are several depleted (Traffic Europe, 2003). Until 1995 the only specific regulation in place for the queen conch was Decree 312 of 1986, establishing a syphonal length of 25cm as the legal

minimum length. As a consequence of recommendations made by studies conducted by Appeldoorn and Meyers (1993), Tejeda (1994, 1995) and Posada and Mateo (1998), another Decree (No. 269-99) was promulgated in 1999 to strengthen the management framework for *Strombus gigas*. The decree introduced several specific measures to protect the stocks and regulate harvesting and sale, including establishing a nation-wide close season for fishing from the 1<sup>st</sup> of July to the 31<sup>st</sup> of October each year. The decree also prohibits the traffic, sale and export of conch meat during the close season, and the capture of queen conch, on a permanent basis, in certain critical habitats, including the Catuano Channel, situated between Palmillas and Catuano, and between Punta Aljibe and Punta Balajú, Parque Nacional del Este. Similarly, the decree prohibits conch fishing within the Southeast coast of Beata Island from the tide line to a depth of 50m.

Although Decree No. 269-99 came into force in 1999, it has not been adequately publicized and assimilated by the fishers and vendors. Neither the government nor the local NGO community has conducted public awareness and education programs to sensitize resource users and other stakeholders of the provisions of Decree 269-99, and consequently, the level of compliance with this Decree is very low.

In year 2003 the DR fisheries authorities suspended queen conch exports in recommendations made by the CITES Animals Committee based on the review of significant trade in queen conch compiled by Traffic Europe. The report claims population decline and illegal fishing, and urges international importers to avoid purchase of queen conch products from the DR. Up to now, the Dominican government has not been able to demonstrate the critical information on queen conch population numbers available for exploitation, as well as its willingness to deal with the issue of IUU fishing in neighboring countries's EEZs. In an effort to comply with CITES recommendations, the Dominican government issued a decree banning conch exports. It is known, however, that exports of queen conch continue taking place to Haiti and Canada, apparently under the umbrella of bilateral agreement between the DR and the conch importing countries.

Other very important fishery resources in the Dominican Republic are lobster, shrimp and finfish. With lobster tail being sold in the local supermarkets for the equivalent US\$12.00 per pound, and around 2000 fishers involve in the fishery, the spiny lobster is the single most valuable fishery resource of the Dominican fishery. From January to May 2002 the landings of the spiny lobster amounted to 1,696 MT (Dirección de Recursos Pesqueros, 2002). The main lobster fishing ground is the southwest shelf around the area of Pedernales. There are decrees and law (Law 5914 of 1962; Decree 1345 of 1967; Law 565 of 1970; and law 64-00 of 2000) for the management of *Panulirus argus* and other fisheries in the Dominican Republic. These regulations are designed to control the harvesting, possession and sale of female lobster from March 1-August 31 each year, establishing a minimum size for catch of 24 cm TL; and nation-wide close season from April 1<sup>st</sup> -July 31<sup>st</sup>.

The shrimp fishery in Samaná Bay is considered the most important unit of the coastal fishery in the Dominican Republic due to the large number of fishers (3000) from the surrounding areas who are dependent on this fishery. Shrimps are caught using gill, dragging and circular nets. The use of dragging and gill nets are prohibited in Samaná Bay (Decrees 343 of 1987 & 334 of 1989), but are still commonly used in the shrimp fishery.

The main finfish families in the catch are Lutjanidae, Serranidae, Scombridae, and Haemulidae. The capture of groupers during the spawning season from January to June is prohibited by Decree 2099-84, however, groupers are commonly targeted all year around. Also, the sale of barracudas, (*Sphyraena barracuda* and *S. picudilla*) and the jack, (*Seriola rivolana*) is prohibited by Decree 313 of 1986. These regulations are largely ignored and the target species can generally be found in the local markets and restaurants throughout the year.

### **Fisheries management institutions in the Dominican Republic**

There are several institutions in the Dominican Republic with overlapping responsibility for fisheries development and management, including the following:

- ❑ The Directorate of Fisheries Resources (DOFR) is a part of the Ministry of Environment and Natural Resources which was created by Law 64-00 of 2000 after the establishment of the new government in August 2000. The Director of the DOFR reports to the Sub-secretary responsible for Coastal and Marine Resources.
- ❑ The Fisheries Department, Ministry of Agriculture is responsible for fisheries surveillance, aquaculture production, extension and promotion. This department is headed by a Director of Fisheries.

- The Office of a National Coordinator of Fisheries and Aquaculture who is responsible for overseeing and coordinating all projects and activities being undertaken by the 2 main fisheries departments above mentioned.
- The Department of Conservation and the Department of Environmental Education of the Ministry of the Environment are two other government departments which are involved in management of the fisheries sector.
- The Fisheries Department of the Instituto Dominicano de Investigaciones Agropecuarias y Forestales
- The Navy is responsible for monitoring, surveillance and enforcement of fisheries laws and regulations.

The fragmented and overlapping responsibilities of these public sector agencies tend to create inefficiencies and even confusion, in some cases. Rationalization and improved coordination of actions among these agencies is clearly needed.

The DOFR appears to be the main fisheries management agency. Its stated policy priorities are: sustainable management, fisheries development, full employment and environmental protection. The DOFR has a staffing of 30-40, and two main sub-divisions, the Department of Fisheries and the Department of Aquaculture. In addition there are two specialized regional agencies PROPECAR-SUR in the Southwest, and CEDEP in the Northeast, which are responsible for extension and data collection activities in their respective location.

The main functions of the Directorate of Fisheries include: licensing and registration of fishers, data collection and fisheries monitoring, research, development of cooperatives, aquaculture development, ornamental fishery's management, provision of extension services to the fisheries sector, post-harvest technology, and quality assurance.

The DOFR is currently involved in the establishment of "Stations of Service and Fisheries Administration" at different geographical areas across the country. The purpose of this new organizational system is to deliver management and administration in a decentralized manner to improve sustainable development of fisheries and aquaculture. These new administrative units are expected to assist with mapping of habitat and resources within the areas under their responsibility, collect basic statistical data and provide extension services to the community. However, for many of these stations there exist neither a physical structure (no offices, no means of transportation) nor logistical support for the assigned staff to undertake their duties.

### **Legislation, monitoring, surveillance and enforcement**

The main legislation under which fisheries operate is the Fisheries Law 5914 of 1962. Fishers and fishing boats are required by law to be licensed and registered with the Ministry of Agriculture but only about half of the fishers and boats are believed to be licensed and registered. By the end of year 2003, however, a nation-wide fishers and boats registration campaign was undertaken by the Sub-ministry of Coastal and Marine Environment, which results have not yet been released.

Fisheries surveillance and enforcement is under the responsibility of both the Fisheries Department and the Navy. Both organizations have Fishery Inspectors who are responsible for monitoring and enforcement. The stakeholders recognize the role and authority of both the military and the Fisheries Department in respect of surveillance and enforcement. They, however, consider the Fisheries Department ineffective in executing this responsibility. The military is considered more effective in enforcement but is also considered unnecessarily violent and arbitrary when handling offenders. Violators of the fisheries regulations are generally prosecuted under Article 47 of Law 5914 of 1962, but corruption, lack of equipment, insufficient logistical support, and very low fines, undermine the effectiveness of the legislation and management regulations. Enforcement of fisheries regulations is generally weak and compliance of resource users and traders with the regulations is also low.

Illegal and unregulated fishing and non-compliance with the laws and regulations designed to protect and conserve the resources in the Dominican Republic are regarded as major problems that need to be resolved in the near future to ensure long-term sustainability of the fish stocks.

The scarcity of resources devoted to conduct monitoring, control, surveillance (MCS) and enforcement activities underscores the need to enhance involvement of fishers and their community in development and implementation on measures designed to protect and manage fisheries. Enforcement personnel should work more

closely with resource users and their communities to ensure that they share greater responsibility for resource protection and management. Community policing techniques should be encouraged and promoted throughout the region (Haughton, 2002).

In March 2000, a proposal for a new Fisheries and Aquaculture Law for the Dominican Republic was discussed by stakeholders. The main objective of the proposed law is the establishment of sustainable fisheries systems based on the principles of responsible fishing. With this purpose on mind, the legal and administrative arrangements related to exploitation of the fisheries resources should be based on the best available scientific information, using the best available technology and environmental practice, in order to guarantee the sustainability and conservation of the ecosystem (COSERENAMA, 1999).

The creation of a new organization, the Dominican Institute of Fisheries and Aquaculture has been proposed to strengthen the national capacity for sustainable fisheries development. The proposed law also makes provisions for measures and procedures to regulate fishing activities and access of foreign fishing boats to Dominican Republic waters as well as for the designation of areas for aquaculture development. Other regulations are directed to the modification, suspension, and denial of fishing permits and payment of taxes. The proposed law also includes general measures for management of lakes; general prohibitions and measures for conservation and protection of aquatic and biological resources; administration of protected and no-take reserves; limitation of fishing effort; protection of species; close seasons; minimum length for capture, and other measures to protect the fish stocks.

The new proposal seems to lack clear definition on what resources need to be protected and what specific resources should not be captured or commercialized. The proposal has been criticized for not providing enough detailed information about legal minimum sizes, close seasons to adequately protect and conserve key species, and, lack of specifications with respect to fishing gear permitted. This may be due to limitations and uncertainty regarding the biological and technical aspects of the resources in question. In any event such details could be addressed by subsidiary regulations made under the main law.

### **Policies and Plan for the fisheries sector**

Government policies and plans for development and management have been articulated in the legislation and national plans. Several national fisheries plans have been prepared for the Dominican Republic since the early 1980's.

Fisheries Development Limited (1980) in coordination with the Instituto Dominicano de Tecnología Industrial (INDOTEC), prepared a comprehensive report on the marine and in-land fisheries of the Dominican Republic with recommendations for development, addressing socio-economic and technological issues, harvesting, and research. The National Planning Office (ONAPLAN) in 1983 provided recommendations for scientific and technological policies for the sector.

With the exception of the on-going CRFM supported work plan the other plans have focused more on fisheries development rather than on management, and in consequence, the fisheries have experienced rapid growth during the past 2 decades. It is necessary to prepare and implement clear policies for the sector, based on knowledge of the status of the resources and their natural limitations, with full involvement of resource users and other stakeholders in the process.

### **Policy Priority Areas**

The main policy areas identified by the fisheries authorities as priority can be summarized as: sustainable management, fisheries development (including food self-sufficiency and full employment) and environmental protection.

Food self-sufficiency and full employment would tend to shift strategies in policy, in favor of fisheries development, while environmental protection and sustainable management would lay emphasis in conservation. The problem is how to balance these two apparent contradictory positions in the process of implementation. Strong managerial skills of the fisheries administrators, and the support and involvement of the resource user groups and stakeholders is critically needed (CFU, 2001).

There are some transnational issues that the fishing sector of the Dominican Republic has to resolve. For example, a number of boats from the DR fish in foreign waters. Fishermen and fishing boats from the DR operate in the waters of The Bahamas, Turks and Caicos Islands, Jamaica, and the Saba Bank (Appeldoorn & Meyers, 1993; CFU, 2000). In some cases dozens of fishermen and other fisheries workers from the Dominican Republic are legally employed on Bahamian and Jamaican fishing boats. Unfortunately, that is not always the case and the Dominican fishers are also known for their illegal operations in foreign waters. Likewise fishermen from Haiti operate illegally in the Dominican Republic and, during year 2003 fishers from the southwest part of the country complained on the presence of fishing vessels from Korea which apparently were fishing for holothurians and fishes without the proper permit. Conflict resolution among stakeholders of the Dominican fishery industry and other CARIFORUM member states has been identified as a priority activity to be resolved through consultations and the establishment of bilateral agreements. The CRFM has facilitated preliminary meetings between government officials from the DR and Turks and Caicos Islands, DR and Jamaica, and DR and The Bahamas. These meetings represent a good starting point to improve cooperation among the countries and reach formal agreement to fight IUU fishing.

### **Regional Organizations/Institutions of Fishery Cooperation**

The Dominican Republic participates either as a member or as an observer in the activities of several fisheries cooperation organizations including: the Caribbean Community (CARICOM), Comisión de Pesca Continental de America Latina (COPESCAL), the Sub-commission for the Caribbean and Adjacent Region of the Intergovernmental Oceanographic Commission (IOCARIBE), the Association of Caribbean States of the United Nations Environmental Program (ACS UNEP), the Comisión de Pesca para el Atlántico Centro Occidental (COPACO), the Organización Latinoamericana de Desarrollo Pesquero (OLDEPESCA) and the Western Central Atlantic Fishery Commission (WECAFC). The participation of the Dominican Republic in the International Commission for the Conservation of the Atlantic Tunas (ICCAT) would also be of great interest to fisheries management and to the protection of pelagic resources in Dominican waters, the Wider Caribbean and Atlantic Ocean (Rodríguez and Herrera, 2001).

Despite all the fisheries related management issues highlighted in this paper, the Dominican Republic has been benefited from technical and financial support of several international cooperation agencies, which contributions are highlighted below.

### **The Japan International Cooperation Agency (JICA)**

Has been one of the most important collaborators in fisheries development in the DR. JICA has provided technical and financial support in several fields. Its support includes the provision of a research vessel, the construction and provision of logistical support for the Center for Fisheries Development (CEDEP), financial support to fisheries cooperatives for the construction of improved fisheries vessels, long and short term scholarships, preparation of manual for pelagic fisheries, exploratory study of migration of tunas passing through DR waters, exploratory study on high seas fishing, including giant squid, tuna and tuna-like species and posterior training in preparation and use of fishing gears for that type of fishery, training to the fisheries officials in post harvest handling techniques and quality control of fisheries products, use and repair of outboard engines, and fisheries resource administration.

### **The Caribbean Regional Fisheries Mechanism**

Another key cooperation agency for fisheries management in the DR is the Caribbean Regional Fisheries Mechanism (CRFM). In year 2000, the CRFM and the Directorate of Fisheries Resources prepared a five-year work plan, which is being implemented under the European Union funded Fisheries Component of the Integrated Caribbean Regional Agriculture and Fisheries Development Project. The most recent work plan designed for the fisheries of the DR was prepared by CFU (2000) in collaboration with the Directorate of Fisheries Resources of the Ministry of Environment and Natural Resource. This plan addresses some of the necessary actions to improve fisheries management in the DR. The Work Plan is being implemented and is seeking to address some of the critical issues affecting the fisheries sector in the Dominican Republic by focusing on development of clear and adequate planning and policies framework; improving the fisheries database, information management systems and flow of

information to stakeholders for planning and management decision making and strengthening human and institutional capacities for administration, fisheries research, resource management and conservation.

As a first step of the ICRAFD work plan for the Dominican Republic, a strategic review of the organizational structure of the DOFR was completed in 2001 (Rodríguez and Herrera, 2001) and resources to assist with the implementation of the agreed recommendations have been provided. Also, a comprehensive review of the fisheries data collection system of the DOFR was conducted in 2001 (Medley, 2001) and support provided for implementation of the recommendations, including the provision of computer systems and training of data collectors. Long and short-term trainings scholarships have been provided to University students and fisheries officers of the Dominican Republic. Several short-term training workshops have been delivered to fisheries field officers and other stakeholders covering topics such as capacity building workshops on socioeconomic aspects of fisheries, data collection and statistics, resource assessment, resource management. At present CRFM in collaboration with the Directorate of Fisheries of the DR is in the process of finalization of a fisheries management plan which includes individual plans for the major fisheries resources. Other on-going activities include a nation-wide census of conch & lobster fisheries, underwater survey of lobster and conch, establishment of a national fisheries dialogue group involving stakeholders in the fisheries sector; training in fisheries statistics and data management (CFU, 2001; CFU, 2002).

### **German Technical Cooperation Agency (GTZ)**

Was one of the pioneer cooperating agencies in Dominican fisheries. Under the umbrella of GTZ the program Propescar-Sur was created during the second half of the decade of the 80's. During the late 90's Propescar-Sur became an integral part, a branch of the Fisheries Department. Up to day, Propescar is recognized as the most prestigious governmental program dealing with marine fisheries in the DR due to its highly qualified and trained fisheries technicians and its production of the main part of fisheries documents produced in the country. As part of the support of GTZ a research vessel was provided to Propescar-Sur as well as long and short term training in fisheries and fisheries related fields.

### **Government of Taiwan**

The government of Taiwan has been very instrumental in the preparation of Dominican fisheries officers and aquaculture technicians. The government of Taiwan also facilitates workshops on technology and management of aquaculture. Its main contribution to the country has been the construction and provision of logistical and technical support for the shrimp and fish culture project in the South part of the country, which is aimed to replenish dams and lakes with fingerprints. An important contribution of Taiwan has been also the introduction of cage culture in the DR.

### **Food and Agriculture Organization (FAO)**

Is one of the oldest institutions involved in cooperation for fisheries in the country. Supports Dominican government officials participation at regional meetings for management of Caribbean lobster; has provided technical assistance for standardization of fisheries statistics on capture fisheries in a species basis as well as provision of training in fisheries statistics, and quality control of fish processing (HACCP).

### **Organization of American States (OAS)**

Is currently supporting a fishery study of the provinces Azua and Barahona, as part of the project for integrated management of such coastal provinces

### **The Nature Conservancy**

Has provided financial and technical support for the conduct of fisheries monitoring at Parque Nacional del Este from 1994 to 2000 as part of its Parks in Peril project.

**Swiss Association for Cooperation and Development (HELVETAS)**

Has provided financial support for institutional strengthening of several environmental governmental and non governmental bodies, including activities to improve the fisheries department database, support for the study of marine and freshwater fisheries of Parque Nacional Jaragua including the study of fishery of Laguna de Oviedo with trials with new fishing gear and techniques, study of the fisheries in Wetlands of Parque Jaragua and the monitoring of marine fisheries and fishing marketing in Samana

**Ford Foundation**

Supported a baseline study of the marine fisheries of Samana

**United Nations Development Program (UNDP)**

Through the Global Environmental Fund (GIF), the UNDP supported the conduct of surveys of marine biodiversity and fisheries investigation in four protected areas of the Dominican Republic, named Samaná, Los Haitises, Jaragua and Montecristi.

**Center for Marine Conservation**

The Center for Marine Conservation, now better known as Conservation International supported in the early have of the 90's decade a survey of marine and freshwater biodiversity in Parque Nacional Jaragua and fisheries investigations in some areas of Samaná.

**Agencia Española de Cooperación Internacional/ Spain government**

The Spain government has provided technical and financial support for the launching of aquaculture projects managed by the Ministry of Agriculture.

**DISCUSSION AND CONCLUSION**

The current situation of fisheries management in the Dominican Republic is still a challenge due to the overall overlapping functions among several governmental agencies and limited resources. Even though there is goodwill from the government authorities to develop the country's fisheries sector, these efforts have to be coordinated within a national management program that will necessarily require improved knowledge of the status of the resources, capacity building and awareness campaigns, empowerment and greater involvement of the resource users and others stakeholders in all levels of fisheries management.

Nowadays in many coastal areas tourism is replacing fisheries and agriculture by providing a new source of income for coastal communities. Yet, the low level of development, widespread poverty, lack of basic services and infra-structure, and environmental degradation characterize the situation of many of the Dominican coastal communities where large numbers of persons depend on the exploitation and commercialization of fisheries resources for survival and fisheries continue to be in many cases their only source of livelihood.

This situation is further compounded by the lack of adequate fisheries legislation, lack of capability for monitoring and enforcement; lack of financial resources for fisheries programs; lack of organization and institutional capability for fisheries development and management, including physical office space and facilities, and disrespect of current regulations not only by the primary users of the resources but for the policy makers as well.

The budgetary allocation of the Dominican Directorate of Fisheries is not enough to allow the fisheries administrators to undertake the necessary programs to improve fisheries resource management. On the positive side, however, the Dominican Republic is developing closer links with regional and international missions and organizations that are supporting the fisheries sector with technical and financial resources through specialized projects.

Fisheries managers need to continue to develop and implement carefully targeted programs of work to gradually improve the national and local capability for sustainable fisheries development and management, and consequently enhance the contribution of fisheries and aquaculture to the economic development of the country.

Dominican Republic is confronting a historical deterioration of its economy. At this moment, the country is going through a period filled with uncertainties due to the precautionary approach of government officers during the country stated transitional period to allow changes in government heads, many of the fisheries management activities became dormant. The new fisheries authorities will have the challenge of giving continuity to the on-going efforts to revise and approve the new fisheries law and to insert the sustainable use of fisheries resources into a more comprehensive socioeconomic improvement program. It is necessary to understand that isolated interventions in the fisheries sector by themselves will not solve the problems unless they form part of a larger sustainable development program seeking to address the larger issues of improved governance, improved productivity, improved environmental management and human development.

Improvement in the basic socio-economic conditions and living standard are needed to reduce the heavy dependence on the already over-exploited fishery resources for survival and better control of fish trade is also needed. Improved cooperation with international and regional fisheries bodies is also needed to manage shared resources. Dominican Republic fisheries authorities will have also to strengthen co-management and community-based approaches to improve success in fisheries management. Recognizing that fishers are, to some extent, employees of a few fisheries vendors who control most part of the industry, putting more effort in regulating their operations should help to stop the overexploitation of our already depleted fishing resources. To some extent, the technical and financial resources needed for improvement of fisheries management were and have been made available through cooperation of national and international agencies. The most needed push in this critical moment is political will.

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