

A Review of the Fisheries Sector of Haiti with Recommendations for its Strengthening

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ABSTRACT

The Republic of Haiti, located in the Caribbean Region and sharing the Island of Hispaniola with the Dominican Republic, is one of the poorest and most densely populated nations of the Western Hemisphere. With around 30,000 subsistence fishers, its coastal resources are probably the most over-exploited and poorly managed. There is a lack of policy, legal, institutional and administrative framework, and resources to ensure sustainable use, management, and conservation of the fisheries and marine resources. In November 2000, the CARICOM Fisheries Unit initiated a programme to improve management of the fisheries, in collaboration with the government of Haiti. Preliminary reviews and surveys conducted indicated that although there is some information available on the fisheries, it is generally incomplete, contradictory, and difficult to locate. There are no systems in place either for collection and analysis of fisheries data or for monitoring, surveillance, and enforcement of fisheries regulations. The limited capacity of the local fishing fleet has partly prevented the exploitation of Haiti's off-shore fishery resources and concentrated effort in the near shore waters. On the positive side, with 59 fishers associations, Haiti has one of the strongest fisherfolk organizational systems in the CARICOM region. Also, the Haitian Fisheries Service has a team of qualified and motivated staff who are available to undertake the task necessary to improve the sector. In this paper, a preliminary assessment of the situation is provided as well as recommendations for specific activities to be conducted for the strengthening of the sector and improving the sustainable management of the fishery resources.

KEY WORDS: Fisheries of Haiti, Haiti's Fisheries Service, sustainable management

Una Revisión de las Actividades Pesqueras de Haití con Recomendaciones para su Fortalecimiento

RESUMEN

La República de Haití, localizada en la región del Caribe y compartiendo la Isla de la Hispaniola con la República Dominicana, es una de las naciones más pobres y densamente pobladas del Hemisferio Oeste. Con cerca de 30,000 pescadores de subsistencia, sus recursos costeros son probablemente los más explotados y pobremente manejados. No existe una estructura política, legal, institucional o

administrativa, ni tampoco recursos para apoyar el desarrollo sostenible y el manejo de los recursos pesqueros. En Noviembre del 2000, la Unidad de Pesquerías del CARICOM, en colaboración con el gobierno de Haití, inició un programa para mejorar el manejo de las pesquerías. Las revisiones preliminares y los inventarios conducidos indican que, aunque hay cierta información disponible sobre las pesquerías en Haití, dicha información es por lo general incompleta, contradictoria y difícil de localizar. No existe un sistema establecido para la colecta y el análisis de los datos pesqueros o para el monitoreo, vigilancia y refuerzo de las regulaciones pesqueras. La capacidad limitada de la flota pesquera ha impedido en parte la explotación de los recursos de aguas profundas de Haití y ha concentrado el esfuerzo en las aguas someras. En el lado positivo encontramos que, con 59 asociaciones de pescadores, Haití posee uno de los sistemas organizativos de pescadores más sólidos de la región CARICOM. Asimismo, el Servicio de Pesca de Haití posee dentro de su personal un grupo de profesionales calificados y motivados quienes están disponibles para conducir las medidas necesarias para mejorar el sector. En este trabajo se hace una evaluación preliminar de la situación y se dan recomendaciones para el manejo sostenible de los recursos de Haití.

PALABRAS CLAVES: Pesquerías de Haití; Servicio de Pesca de Haití; manejo sostenible

INTRODUCTION

The Republic of Haiti is located in the Caribbean Region (19° N, 72° W). With a total area of 27,750 km² (Cantave 1996, UVMIM 2000), Haiti occupies a quarter of the Island of Hispanola, which it shares with the Dominican Republic. Haiti's coastline measures approximately 1,770 km and the island shelf has an area of around 5000 km².

Haiti is considered one of the most densely populated and poorest countries in the Western Hemisphere. With a total population of approximately 10 millions (FAO 1999b) and an unemployment rate of 60%, about 80% of the population lives in abject poverty (World Bank 2000). The standard of living and the socio-economic condition of the people of Haiti, including the fishers and their families are substantially lower than in the other Caribbean countries. The per capita GDP in Haiti was estimated at approximately US\$357.6 in 1998 (CARICOM 2000). The fisheries are essentially artisanal and subsistence activities to provide food for local consumption and generate income for the fishers and their families. Poverty and illiteracy are widespread.

The natural environment and the coastal resources appear to have been severely degraded by a combination of factors including, destructive use, over-exploitation, pollution and poor management practices. The coastal resources, probably the most heavily exploited and poorly managed in the Caribbean, are the main source of livelihood and sustenance for the estimated 30,000 fishers and their families that

operate in Haitian waters. Pollution, over-exploitation, loss of bio-diversity and lack of education are issues that need to be address urgently (UNESCO 1997). Fishing occurs mainly in shallow coastal waters due to the limited capacities of the country's traditional, artisanal fishing fleet.

BACKGROUND

Under the fisheries component of the Integrated Caribbean Regional Agriculture and Fisheries Development Programme (ICRAFD) in November 2000 the CARICOM Fisheries Unit (CFU), in collaboration with the government of Haiti, initiated a program to improve fisheries assessment and management. As part of the initiation process a fisheries country profile was prepared based on the literature available on the web and at the CFU's library in Belize. Trying to find and compile information on the fisheries of Haiti was not an easy task. The data available is incomplete, fragmentary, contradictory and difficult to locate. The information gathered during the review was nevertheless useful in analyzing the fisheries situation and planning further consultations and activities.

In an effort to provide support for the strengthening of the Fisheries Service in Haiti, a team of professionals from the CFU embarked on a fact finding and planning mission to Haiti in February 2000. The team gathered information through literature review of existing documents, discussion sessions with fisheries staff, and meetings and consultations with policy makers and other stakeholders in the fisheries sector. Information was also collected through the administration of a multi-disciplinary survey questionnaire, which was administered to key informants during the mission.

FINDINGS OF SURVEY AND LITERATURE REVIEW

The information gathered during the literature review and multi-disciplinary survey highlighted significant inconsistencies in the reported statistics and knowledge of the status of the fishery resources. The number of fishers and fishing boats in Haiti is difficult to determine with any degree of accuracy. Laserre et al. (1985) (cited in FAO 1999a) reported that there are 11,000 fishers. UNDP/FAO (1989) and Puga et al. (1998) (cited in FAO 1999) reported that there were 12,000 fishers in Haiti. However, more recent reports prepared by Breuil (2000) and the Cuban Technical Assistance Mission in Port-au-Prince (Baseline Survey of the Fisheries Department-questionnaire) estimated the total number of marine fishers at 30,000. Approximately 80% of these are reported to be full-time fishers and 20% are part-time fishers. Most fishers start their career in fishing when they are only seven or eight years old. Approximately 90% of the fishermen are reported to be illiterate, compared to a national average illiteracy rate of 75% (Britannica.com. 1999).

The fishing fleet is composed of 5,000 - 6,000 small, artisanal fishing boats that operate mainly within the coastal waters (FAO 1999a). There are currently five

larger vessels involved in offshore fishing under a Cuban technical assistance project.

Many fishermen operate from small wooden artisanal boats, which are propelled by oars or sails (Brethes and Rioux 1986, FAO 1999). More than 60% (2,152) of the fishing boats operate from beaches on the west and southeastern parts of the country. Haitian fishers use mainly traps (Antillean "Z" type) made almost entirely of bamboo, nets (gillnet, trammel net, cast net, bottom net, "folas" and different kind of fishing lines (surface line, long line, bottom vertical line, trawling, beach seine), free diving, and hookah diving. Many fishers operate directly from the coast without the aid of a boat.

It has been estimated that a fishing unit typically operates from 125 to 150 hours per year (Ehrlich et al. 1985). The average catch per fishing unit fluctuates between 3 to 5 kg per trip (Ehrlich et al. 1985).

Two hundred and seventy two (272) species of coastal marine fishes have been reported for Haiti (WCMC 1999). Marine fish production accounts for 93% of the country's total catch (WCMC 1999), while catches from lakes and rivers account for the remaining 7%. The World Bank reported 48,000 MT as average annual marine catch for Haiti from 1991 to 1993, and 500 MT for freshwater fish catch (USAID 1996). According to FAO estimates, in 1999 the total annual marine catch amounted to 6,000 MT, while inland fishing accounted for 300 MT (Breuil 1999b). The value of the landings has been estimated at US\$30 million, accounting for 2.5% of GDP.

Haiti exports approximately 350 MT of fish and fish products and imports approximately 12,600 MT valued at US\$18,000,000. The consumption of marine product has been estimated at 3.1 kg/year/person (FAO 1999b).

There are three aquaculture farms that produce freshwater fish for the domestic market. There is also a small ornamental fishery that targets nearly 70 different species of fresh water, brackish water, and marine fishes. The ornamental fishery is considered an "informal" sub-sector of the fishing industry, and like the other sub-sectors within the fisheries is largely unregulated. Ornamental fishing is conducted mainly in Fort Liberté, South Capes, and Dame Marie. There are approximately seven establishments engaged in this fishery which targets the export market. FAO (1999a) reported that around 800,000 specimens were exported from Haiti in 1998. Further studies are needed to determine the full extent and socio-economic importance of this fishery as well as the status of the targeted species.

Legislation, Monitoring, Surveillance and Enforcement

The Fisheries law of November 1977 is the main legal instrument by which fisheries activities are regulated in the Republic of Haiti. There are other general laws, which apply to navigation and also affect some aspects of the fisheries sector in Haiti. The Fisheries Law of 1977 requires the registration of all fishermen operating in Haiti. There are also resource management regulations designed to protect and conserve the fishery resources including, closed seasons for lobster and conch and minimum mesh size for certain types of fishing nets.

The National Fisheries Service, a division within the Ministry of Agriculture of Haiti, is responsible for administration and enforcement of the fisheries law and associated regulations. Monitoring, surveillance, and enforcement of fisheries regulations are among the specific functions of the Fisheries Service. There is generally no monitoring, surveillance, or enforcement of fisheries regulations due to lack of resources and equipment, limited organizational capacity, lack of personnel, poverty, and political instability. Normally, no action is taken when violations of regulations are discovered. Although there is very little evidence of fisheries management or conservation in Haiti, fishers from at least one organization, the National Fisheries Association, are reported to practice some form of self-regulation. The existing laws and regulations governing fisheries are outdated and inadequate to protect fish stocks and essential fish habitats and therefore need to be updated. Substantial strengthening of the administrative and enforcement capability of the Haitian Fisheries Service is also needed before it can effectively monitor and have any real impact regulating the fisheries.

Status of the Fisheries and Fisheries Management.

The available information suggest that the fishery resources and associated coastal habitats have been severely depleted and degraded, particularly in the coastal areas due to overfishing, pollution, habitat destruction, and lack of management. The results of various studies confirm that there has been progressive degradation of the coastal ecosystems and marine biodiversity followed by a decreased in the fish yield (Célestin 1999). The insular shelf around Haiti is relatively small and easily accessible to fishermen (Appeldoorn and Meyers 1993) and as a result, the coastal demersal fish stocks are heavily over-exploited. The fishers target mainly lobster, conch, and shallow-shelf reef species. Ferry and Kohler (1987) reported that as much as 70% of the catches taken by traps are juveniles with total length of less than 10 cm. Puga et al. (1998) reported that in Aquin Bay, more than 90% of the lobsters caught are juveniles.

There is an urgent need for further studies to not only assess the status of the marine resources of Haiti but also to develop solutions to the difficult resource management problems facing the country. Urgent action is needed due to the fact that many marine resources appear to be disappearing even before scientists have the chance to account for their existence.

The lobster fishery is one of the most important in Haiti with average annual export of approximately 134 MT between 1994 and 1999 (FAO 1999a). The fisheries legislation specifies a closed season for lobster from April 1 to September 30 each year. There is an urgent need to undertake studies on the biology of the lobster stocks in order to determine the species being captured, length at first maturity, population parameters and general status of the lobster stocks.

The queen conch (*Strombus gigas*) is being exploited intensively for commercial and local consumption. However, the limited shelf area reduces its potential

(Appeldoorn and Meyers 1993). In 1997 the amount of conch exported from Haiti reached 289 MT, apparently due to the re-export of products imported from Jamaica. Wood (1995) found that the conch populations on the Island of Gonaive and at Les Arcadins were seriously over-exploited (0 conch/ha, based on 15 transects), but in Dame-Marie and Rochelois Bank there were still viable stocks (160 adults/ha). Wood (1995) recommended a number of management measures for the queen conch fishery including minimum size restriction, closed season, creation of no-take areas and limitation of fishing effort.

The existing fisheries regulations appear to be inadequate to protect the fisheries and the coastal environment. Management regulations are generally neither respected by fishermen nor enforced by the fisheries management authorities for several reasons. A draft fisheries management plan was prepared with the help of FAO in 1999, but it has not yet been introduced due to lack of funds and other resources needed for implementation. The main objectives of the fisheries management plan are:

- i) Rehabilitation of degraded habitats,
- ii) Training of fishermen in basic literacy and more advance fisheries training in fisheries assessment and management, and
- iii) Fish stock assessments.

The plan also focuses on the introduction and use of appropriate fishing gears and equipment. The plan seems to suffer from two main weaknesses. It does not really involved fishers organizations and it does not adequately take into account the socio-economic situation and local culture.

Against the background of over-fishing within the inshore fisheries, organized commercial fishing in the offshore waters seems to offer opportunities for investment (World Bank 1997). Re-direction of fishing effort to the currently under-exploited deep-water demersal and coastal pelagic resources is an option that should be considered. This should be explored with caution, but general steps should be taken in order to decrease pressure on the inshore stocks and to improve yield from the deep water, offshore stocks to sustainable levels. Such expansions should be done gradually within a management framework that will permit improved monitoring and collection of fisheries data and effective regulation of fishing effort.

Due to the limited coral reef available in the marine waters of Haiti, another potential initiative to reduce pressure on the depleted near-shore fishery is the construction of artificial reefs to enhance fish populations. Artificial reefs could also be used within "protected areas" to enhance recovery of depleted fish stocks.

Haiti neither has any well-equipped marine research institution nor adequate numbers of marine scientists to conduct the types of research that is needed to achieve sustainable fisheries development. For these reasons the potential benefits from closer cooperation with regional and international organizations such as CARICOM, FAO, and the World Bank are substantial.

Structure and Functions of the National Fisheries Service

At this time, the Government of Haiti does not have in place either the basic organisational and institutional capability, legislative framework, sufficient knowledge of the resource systems, or a clear policy and plan for sustainable development and conservation of the fisheries resources. The National Fisheries Service is the organization responsible for fisheries and aquaculture development and management in Haiti. The Fisheries Service is a sub-division of the Department of Natural Resources, which is located within the Ministry of Agriculture.

The main functions of the Fisheries Service include:

- i) Licensing and registration of fishers,
- ii) Data collection and monitoring of the fisheries,
- iii) Research,
- iv) Fisheries management, planning and policy formulation,
- v) Development of cooperatives,
- vi) Aquaculture development,
- vii) Management of the ornamental fishery,
- viii) Provision of extension services to the fisheries sector,
- ix) Training of fishers, and
- x) Post-harvest technology and quality assurance.

The Fisheries Service has a staff complement of 22 professional staff, including 12 persons who have been trained to the bachelors' degree level and six persons who have been trained to the masters' degree level.

Although the Fisheries Service is responsible for sustainable development, management, and conservation of the fisheries resources, it has neither the organizational structure nor funding needed to undertake the complex tasks associated with these responsibilities. The work of the Service is constrained by a lack of funds and basic office facilities and equipment, including electricity supply, computers, telephone, desk, chairs, papers, water, office space, and motor vehicles. The Fisheries Service is therefore not able to fully carry out its responsibilities, given the numerous fishing beaches, some in remote locations, and large expanse of maritime waters under its jurisdiction. There is a need to review the organizational structure and develop a program to gradually strengthen and upgrade the capability of the Haitian Fisheries Service through staff training and provision of equipment, as well as development of clear policies, legislative framework, and work programs. The main areas identified for improvement in the future are:

- i) Habitat protection,
- ii) Institutional strengthening and training,
- iii) Fisheries data collection and management,
- iv) Stock assessment,
- v) Surveillance, monitoring, and enforcement
- vi) Fisheries technology (processing and quality control), and
- vii) Fisheries co-management and community participation.

Conflicts and International Intrusion

Haitian fishermen from Anse d'Hainault, Dame Marie, and Tiburon frequently operate around the Navassa Island from September to November. Navassa Island is claimed by both Haiti and the USA (Haiti Forum 1999). Haitian fishers are also reported to operate illegally in the waters of the Dominican Republic around Jaragua National Park and Montecristi National Park. On the other hand, fishers from Martinique, who introduced FADs in Haiti, have been reported to operate illegally in the area of Anse d'Hainault (Mar and Pesca 2001).

Fisher's Organizations

A recent positive development has been the mushrooming of a number of fisher folk organizations, particularly in the 'Artibonite', West (Ouest), and southern provinces. With approximately 140 fisher's organizations, Haiti has one of the strongest fisherfolk organizational systems in the CARICOM region. Approximately 52% of the fishers are reported to be members of a fisher's organization. Many of these organizations appear to have been formed during the course of the last three years. These fledgling organizations need to be sustained and their capacities built, whilst ensuring that the initial motivation and incentives are kept alive. The support of a local NGO, FONHADES of Port-Au-Prince has been pivotal in facilitating the emergence of the fisher's organizations. This NGO has been providing technical support to the departments' organizations in building 'provincial' umbrella organizations (FONADHES 2000). Gwoup Insyativ Pou Yon Mouvman Nasyonal Peche Oganize (GIP) or the Federation of Organizations of Fishers in Haiti founded in 1997, having already brought together, KOOPECH, made up of 11 primary organizations in the West (OUEST) department and KOPDA, made up of 13 primary organizations in the 'Artibonite' Department.

The goals of these organizations seem to be to promote their interests, to play the regulatory role that has not been effectively promoted by the government, to develop viable economic entities with access to credit facilities, to participate in community welfare activities, and to seek to reduce their dependency on government largesse (CFU 2001).

The EU Funded ICRAFD Project (CFU)

The CARICOM Fisheries Unit and the Haitian Fisheries Service have prepared a five-year work plan to be implemented under the Fisheries Component of the Integrated Caribbean Regional Agriculture and Fisheries Development Project (CFU 2001), which is funded by the European Union. The Work Plan will seek to address some of the critical issues affecting the fisheries sector in Haiti by focusing on:

- i) Development of clear and adequate planning and policies framework,
- ii) Improving the fisheries database, information management systems, and flow of information to stakeholders for planning and management decision making, and

- iii) Strengthening human and institutional capacities for administration, fisheries research, resource management, and conservation.

Fishery management decision-making and planning must be informed by quantitative information on the structure of the sector and the status of the resources. To this end, the Project will seek to address those issues associated with providing fisheries data for assessment and management and as an effective tool for monitoring and regulating catch and fishing effort.

Establishing and operating a national data collection system requires a great deal of effort, resources, expertise, and cooperation among all the stakeholders in the fisheries. Haiti does not have in place the basic organisational and institutional capability or sufficient knowledge of the resource for successful establishment and operation of a national data collection system.

The project will therefore take a step-by-step approach to the establishment of a data collection system and the generation of data and information for policy making, management planning and monitoring of the fisheries. As a first step, a national sample-based fishery survey will be undertaken to better understand the scope, status and socio-economic contribution of the fisheries sector to the national economy. This sample survey will focus on the collection of basic data on catch, effort, and biological and socio-economic aspects of the fisheries. The data and information obtained will be used to design a data collection system for on going monitoring of the fisheries.

The information on the status of the fisheries in Haiti is incomplete, fragmentary, contradictory, and difficult to locate. An important component of this work plan will be a search for and compilation of existing documentary material on the fisheries in Haiti. The project will also provide support for the collection of biological and socio-economic data on the commercially important species groups as well as technical assistance for the analysis and interpretation of the data and preparation of management recommendations. Support will also be provided to enable scientists and resource managers from Haiti to participate in regional and sub-regional initiatives such as the fisheries assessment and management workshops.

Technical assistance will be provided to the Fisheries Department to improve the institutional capability of the Department, strengthen the planning and policy framework and improve the system of governance. Specifically, the Project will:

- i) Assist with the preparation of a comprehensive national fisheries policy, fisheries management plan, and work plan for the fisheries department,
- ii) Assist with preparation and establishment of a mechanism for providing policy advice and enhancement of participatory approaches to decision-making regarding the fisheries sector,
- iii) Support a review and preparation of recommendations for strengthening of the legal framework, organisational structure and operational arrangements of the Fisheries Department, and provide resources to assist with the implementation of the recommendations agreed upon,

- iv) Provide long and short term training opportunities for staff of the fisheries department,
- v) Empower resource users so that they can assume greater responsibility for sustainable use and management of the fisheries,
- vi) improving public awareness of the benefits and importance of the fisheries sector and the need for sustainable resource management;
- vii) Strengthen aquaculture production by rehabilitating the research, extension, and training facility at the Fisheries compound in Port-au-Prince, and
- viii) Explore the potential for development of small-scale pelagic fisheries and the cultivation of sea moss (*Gracilaria* spp.) to improve the livelihood of persons who are dependent of fisheries and aquaculture.

The activities designed to strengthen community involvement and education will directly tackle the major knowledge gaps and human relations problems facing the artisanal fisheries sector. These are the absence of a functional extension unit in the Fisheries Department, the lack of awareness of conservation and management issues among resource users, the absence of effective mechanisms for enforcing management measures, and the weak links between the department and the resource users and other stakeholders.

The strengthening of resource user organizations and the strengthening of operational linkages between resource users and the department of fisheries will be addressed through a deliberate mobilizing and organizing program to be coordinated by staff of the fisheries department, and supported by staff of local NGOs who will benefit from training, which will build their capacity for field work organizing and mobilizing fisher-folks. They will also provide technical support to the fisher folk organizations that will eventually emerge, and provide the Public Relations input that will cement relations between the department and the resource user groups.

The project will promote greater awareness by planning and promoting a public awareness campaign that will utilize group interaction, print and mass media, supplemented by a radio call-in program, in which all stakeholders will be active participants. This will be supported by a National Dialogue Group of representatives of all major stakeholders that will regularly meet to deliberate on burning issues related to the improvement of the industry and the sustenance of the resources. The matters discussed by this forum will feed into the public awareness campaign.

DISCUSSION AND CONCLUSION

The current situation in Haiti is very challenging due to the overall low level of development, widespread poverty, lack of basic services and infra-structure, severe environmental degradation, and large number of persons who are dependent on the fisheries resources for survival. 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, and lack of organization and institutional capability for fisheries development and management, including physical office space and facilities. The Haitian Fisheries Service has no budgetary allocation. For these reasons the fisheries in Haiti is largely unmanaged and unregulated.

Despite these constraints, there are some positive factors around which we can work to improve the fisheries situation in Haiti. There is a cadre of trained personnel with general fisheries background employed by the Fisheries Department. There is a staff of 22 persons including 11 university graduates, six of whom have post-graduate training in fisheries and aquaculture. There is a physical facility with substantial aquaculture installations. Both the building and the aquaculture facilities are in a state of disrepair. There are several well organized and active NGOs, fisher's organizations and universities in Haiti involved in the fisheries sector. It will therefore be possible to develop and implement a carefully targeted program 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.

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, and 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.

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