CARIBBEAN REGIONAL FISHERIES MECHANISM SECRETARIAT

REPORT OF THE MULTIDISCIPLINARY SURVEY OF THE FISHERIES OF HAITI

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1.0 INTRODUCTION

In order to reverse the deteriorating condition of the in-shore fisheries in the CARICOM Region and to set the fishing industry on a sustainable path, the countries of the independent English-speaking CARICOM countries, with the exception of the Bahamas, collaborated with the Canadian Government, through CIDA (the Canadian International Development Agency) in designing and implementing a ten-year fisheries development and management project, known as the CARICOM Fisheries Resource Assessment and Management Program (CFRAMP) from 1991 to 2001. CIDA was the main funding agency with some support from the participating countries. The CARICOM Fisheries Unit, based in Belize was the Implementing Agency. The participating member states were Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Lucia, St. Kitts & Nevis, St.Vincent & the Grenadines and Trinidad & Tobago.

The ICRAFD Project

Haiti is one of four CARIFORUM countries that are the main intended beneficiaries of a European Union funded project, the Fisheries component of the Integrated Caribbean Regional Agricultural and Fisheries Development Program (ICRAFD). It is the European Development Fund's response to the CARICOM request for extending the coverage of the CFRAMP project for the benefit of four additional CARIBBEAN ACP or CARIFORUM countries, namely the Commonwealth of The Bahamas, Haiti, the Dominican Republic and Suriname, for them to reach the same level of competence as the CFRAMP participating countries, whilst providing some of the resources to the 12 CFRAMP participating countries. The CFU is the implementing agency for the ICRAFD project as well as it was for the CFRAMP project.

Planning Mission

As was the case for the three other countries, a technical, multidisciplinary team embarked on a planning mission to Haiti for the members to familiarize themselves with all aspects of the fisheries and the fishing industry of Haiti and to develop a program suited to the peculiar circumstances of that country, to facilitate the development and management of its fisheries. The CFU team for Haiti comprised the following: Mr. Milton Haughton, Scientific Director, Dr. David Brown, Sociologist, Dr. Susan Singh-Renton, Senior Biologist/ RAU Leader, Ms. Merlene

Hemmings, Data Manager/Analyst, and Ms. Jeannette Mateo, Biologist. In preparing for the mission, an information note was prepared and forwarded to the Haitian fisheries authorities, and a tentative itinerary was prepared for the mission. Interview schedules were drafted for the conduct of a multidisciplinary survey of the fisheries of Haiti. Arrangements were made for engaging the services of Translators for the translation of the questionnaires into French/Patois, and further arrangements for translation of the completed questionnaires back into English. Similar arrangements were made for bilingual assistance in the fieldwork, and for training interviewers for the Community Baseline Survey, and for the completed and translated questionnaires to be forwarded to Belize for the CFU to analyze the data and prepare the survey report.

Once the team arrived in Haiti, a review of existing relevant documents on all aspects of the fisheries of Haiti – policy, plans, reports etc.- was done. Informal discussions were held with the staff of the National Fisheries Service, and working relationships were established for a collaborative effort. Meetings and consultations were held with policy makers, and informal discussions were held on the beaches, in the fish markets, and in selected communities with major stakeholder groups, including NGOs with interests in fisheries and the marine environment, on the beaches, in the fish markets and in selected communities.

Multidisciplinary Survey

The Documentary review from various sources – NGOs, FAO, UNDP, UNESCO etc. - was done throughout the period of the mission in Haiti. Preliminary information garnered during the visit allowed for testing and revisions to be made to the draft interview schedules for the fieldwork to be done. The questionnaire for the Key Informant Interviews was open-ended*, and it enquired into the opinions and perceptions of respected, knowledgeable stakeholders such as fishers, community leaders, fisheries specialists, on key fisheries management policies and issues; the respondents being identified through the non-probability snowball technique*. A semi-structured questionnaire* was administered to representatives of fisher folk organizations to delve into the strengths and weaknesses of the organizations, and their views on fisheries legislation, enforcement, management and administration. The Focus Group* and Natural Group* interview techniques were applied in the market places, on the beaches and in the fishing communities. Difficulties with logistics and time limited the Key Informant Interviews and the Organizational interviews to 5 and 4 respectively.

----------* See page 4 for definitions.

Another semi-structured interview schedule was administered to the top administrators of the National Fisheries Service, namely The Director of Fisheries and two Senior Fisheries Officers. The questionnaire enquired into the structure and functions of the Department, the subject areas of interest to the department, and the difficulties and problems facing the staff. Finally, five interviewers were trained by the Sociologist to administer the Socio-economic Baseline Survey of the Fishing Communities under a Supervisor, contracted to coordinate the field activities. The questionnaire enquired into fishing technology and practices, membership of fishers' organizations, views on fisheries legislation, surveillance and enforcement, fisheries management issues and the socio-economic background of the stakeholders targeted in the communities and on the beaches.

120 questionnaires that were analyzed for the compilation of this report, covered fishing communities in *Grand' Anse, Sud-Est, Ouest, Artibonite* and *Nord* departments, in and around *Jeremie* and *Dame Marie* in *Grand Anse*, *Marigot* in *Sud Est* and *Port-au-Prince*, *Leogana*, *Grande Gonave* and *Saint-Marc* in the *Ouest* and *Antbonite* Departments, and *Cap-Haitien* in the *Nord* Department. These formal methods of information gathering were supplemented with informal one-on-one and group discussions, documentary reviews, and participatory and non-participatory observational methods*. The unstable political climate and difficult logistical and communication problems delayed the transfer of the completed questionnaires from Haiti to Belize.

This report therefore covers the findings of the data analyzed from the following sources:

- Documentary Reviews
- Key Informant Interviews
- Baseline Survey of the Fisheries Administration
- Baseline Survey of the Fisher folk Organizations, and
- Socio-economic Baseline Survey of Selected Fishing Communities

Its main objective is to guide work planning for the sustainable development and management of the fisheries of Haiti. It will form the basis of technical and media interventions by the National Fisheries Service of Haiti. It would also form the basic data for further research by students, professionals and other scholars. The immediate use of the findings and recommendations stemming out of this report is that it would form the basis of a National Fisheries Workshop at

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which the major stakeholder groups would be deliberating to produce policy advisories for government. Some of these issues would also jump-start the sessions of a National Fisheries Dialogue Group of stakeholder institutional representatives to be inaugurated and institutionalized immediately after the National Fisheries Workshop.

Definition of concepts marked with asterisk, pages 2 & 3.

- **Open-ended questions:** Direct questions for which respondent is requested to provide his/her own answer, as opposed to **Close-ended questions** for which sets of possible answers are provided for the respondent to choose the most appropriate response.

- **Semi-structured questionnaire:** An Interview Schedule containing a combination of open-ended and close-ended questions.

- **Focus Group Interviews:** Respondents represent groups made up of individuals that share a common background or knowledge e.g. Women in the fish trade, young fishers, retired fishers.

- **Natural Group Interviews:** Respondents represent groups made up of individuals interviewed together in their natural setting e.g. fishers fishing at the beach or in a boat, fishers mending their nets, fishers at a meeting of the organization, vendors selling fish.

- **Participatory or Participant Observation:** Interviewer participates in activities of the target groups whilst at the same time engaged in purposive observation of the groups and recording notes.

- **Non-Participatory or Direct, Purposive Observation:** Detached observer records his conclusions without interfering with what his target groups are doing.

- **Snowball Sampling:** In the first stage a few persons having the requisite characteristics are identified and interviewed. These persons are then used as informants to identify others who qualify for inclusion in the sample.

2.0 DOCUMENTARY REVIEW OF THE FISHERIES OF HAITI

Despite the paucity of reliable documentation on the fisheries of Haiti and the incomplete and contradictory nature of the reports available, the mission team was able to obtain some official and unofficial documents containing data that could serve as background material against which the current information garnered through the multidisciplinary survey could be compared. Data sources included the Fisheries Service's material made available to the team, in oral and written forms, and generally data compiled by international donor agencies, including the FAO/TCP, UNESCO, UNDP, a Cuban Mission operating in the country at that time, and some local NGOs.

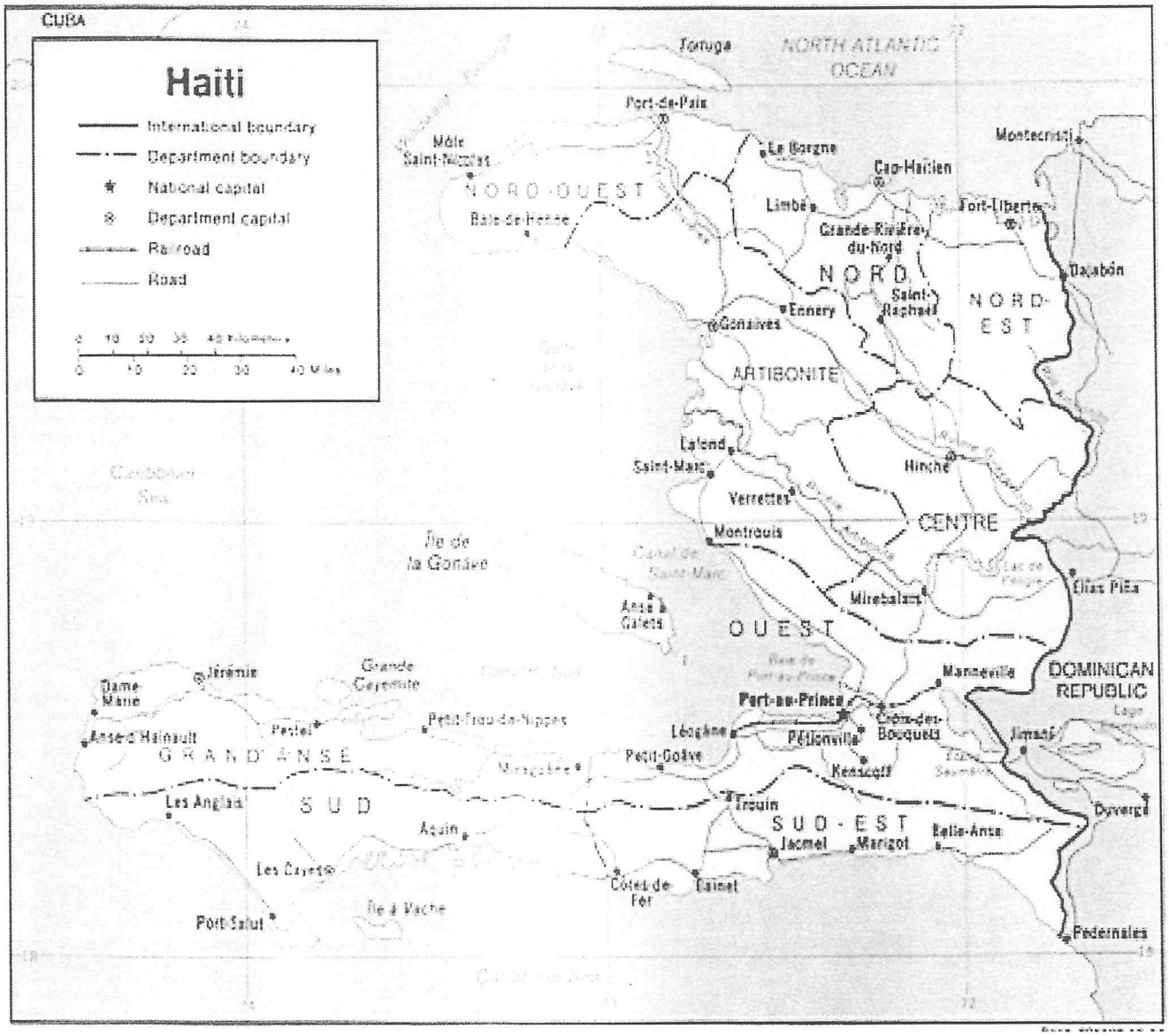
The Coastline, the Continental Shelf and Fishing

Haiti shares the island of Hispaniola with the Dominican Republic to its eastern 360km. border. According to various estimates, the extent of its considerably indented coastline is between 1,500km. to 1,771km. The coastline's indented nature has been partly associated with the numerous species of fish, estimated at approximately 300, previously found in healthy condition in the coastal waters. The country is divided into 9 administrative provinces or Departments, as they are officially known. These are *Grand'Anse, Sud, Sud-Est, Ouest, Artibonite, Nord-Ouest, Nord, Nord-Est* and Centre; the latter, being the only Department without a coastline (see Fig.1, Political map of Haiti).

The continental shelf is considered very narrow at 5,000 sq. km.; a fact that contributes to fishing activities being confined to the narrow, shallow waters, due additionally to the inappropriateness of the fishing equipment and gears. This has led to increasing fishing effort pressure on the resources of the near shore fisheries that exacerbates the already deteriorating condition of the fisheries resources of the near shore fishery zone.

The number of fishers, mainly small-scale subsistence, was estimated to be between 26,832 (Cuban Mission) and 27,000 (FAO). The National Fisheries Service estimates that 21,000 (60%) of these are full time fishers, whilst the rest 6,000 (40%) are part-time fishers. When one follows the trend over the past two decades, the estimates are as follows: 1985 – 11,000 (www.cam.org); 1989 – 12,000 (UNDP/FAO); 1999 – 17,148 (FAO); 2001-30,000 approximately, one recognizes that due to the open access nature of the fisheries, and in spite

FIG 1: POLITICAL MAP OF HAITI



of the clear evidence of serious deteriorating condition of the fisheries resources, the number of fishers has been rising phenomenally, in consonance with the high poverty and unemployment conditions in the country, and lack of resources to control fishing effort and enforce fisheries regulations. In consequence, pressure has increasingly been building upon the resources, particularly in the inshore areas, where the majority of the artisanal fishers operate.

The fishing fleet, made up mainly of small, wooden dugout canoes has been estimated at 5,000 to 6,000 mainly concentrated in the coastal waters generally fronting the southern coastal waters of Haiti. The FAO (FAO/TCP/HAI/6712) estimates that 2,382 to 2,662 commercial vessels are concentrated in the near shore waters of the West, Grand' Anse and South -East departments. This was taken into consideration in administering of the Socio-economic Community Baseline Survey, by selecting the majority of respondents (approximately 80%) from these departments.

Fish Production and Trade

Reliable data on this subject is difficult to come by. The information presented in this sub-section derives largely from the National Fisheries Service or Department. In the absence of any well - coordinated monitoring and data collection system in place, the figures presented must be considered, at best, as indicators. The total annual catch weight stood at 6,000t. for the marine capture fisheries, and an estimated 300t. for the inland fisheries, with the annual estimates of value as US $30m.

The export of fish products from Haiti to the European and North American markets had suffered a major set-back as a consequence of their being banned from those markets due to the fact that Haiti could not satisfy the high sanitation and marketing standards required. As a result a greater portion of the fish products exported finds its way into the neighboring Dominican Republic market. Standing at that time, at 350t. per annum, according to the Director of Fisheries and 500t. per annum, according to other sources in the department, the estimated annual value has been put at between US $6 – 7 m., reportedly far higher than the imports value that has greater weight (12,600t. per annum) although the exact value of the imports was not available. The main export species are lobster, conch, shrimp, octopus and crabs, whilst frozen horse mackerel, salted and sour herring constitute some of the main imports.

If sustainable management measures are put in place and workable monitoring and enforcement systems are instituted, and if proper assessments are made to identify more valuable species from among the 300-odd species in the Haitian waters, it should be possible to substantially increase the production and export of fish products in the long term. There is the need to solve the quality assurance problem. Additionally, the possibility of adding value to fish through processing before exporting could also be examined. At the time of this survey, the contribution of fish products as a percentage of the National Gross Domestic Product stood at 2.5%. Should these changes be instituted with the cooperation and participation of the fishers through their organizations, it should be possible to expect the benefits to these organizations to increase substantially, and ultimately to contribute to improvement of the socio-economic well - being of the resource users and their organized groups.

Fisheries and Fishing Problems

The literature contains substantial evidence that the Fisheries of Haiti has a number of environmental and socio-economic problems that are a hindrance to sustainable development and management, and for which suitable and appropriate solutions should be found. These problems could be divided into two categories, namely Environmental and Socio-Economic, each feeding into the other.

Environmental

The most obvious and widespread environmental issue is the wanton destruction of the forests around the country, including the watershed areas and mountainsides overlooking the ocean, mainly through the traditional, intensive slash-and-burn agricultural practices and the use of wood for traditional construction and charcoal preparation. The main outcome has been the erosion of the topsoil and its deposition into the marine environment causing very high levels of sedimentation in the near-shore waters. Related to these has been the unrestricted destruction of the mangroves that serve as possible nursery grounds for some species in the coastal waters, again for traditional construction and utilization as sources of domestic fuel. Consequently, the remnants are no longer able to play their natural role as buffers against strong storm-surges and stabilization of the shorelines, and the latter also cannot function as physical habitats for some species of marine life.

Additionally, the widespread dumping of solid waste and sewage into the sea, mainly in the form of plastic remains and petroleum waste products by the direct resource users and other

stakeholders, has polluted the marine environment and resulted in the relative depletion of fish stocks in the coastal waters. Many respondents in the informal discussions and interviews in the fishing communities consider environmental degradation of the coastal environment as the most devastating contributor to the depletion of valuable species such as crabs and lobsters and some species of finfish in the inshore areas. This particular issue should be subject for deliberation at the National Fisheries Workshop in the context of Integrated Coastal Zone Management.

Socio-economic

Undoubtedly, lack of access to information, functional illiteracy and abject poverty that increases the number of persons entering the fisheries due to the lack of opportunities elsewhere in the economy, have substantially contributed to these environmental hazards and problems identified above. Pollution and overexploitation of resources have contributed to the reduction of the biodiversity of the marine environment; but illiteracy and poverty have exacerbated the resultant conditions.

The literature puts the levels of poverty between 70 to 90%; mainly in the rural areas. About 80% live below the poverty line. The same factor contributes to the unsustainable pressure on, and exploitation of the resources. The confinement of artisanal fishing activities to the narrow, shallow continental shelf has been linked to the limitations of the technology utilized by the resource users, which in turn is the function of poverty that makes it difficult for the fishers to acquire modern technology to allow for fishing off-shore in deeper waters.

Functional illiteracy is also a serious human resource problem that deprives rural peoples of access to information that could raise their consciousness to the harm that their actions, as direct resource users, do to the marine environment. It contributes to the lack of awareness about the sustainable utilization and management of the resources. The lack of extension workers and public education and lack of access to information produces the negative attitude that goes thus: " If I don't break the rules that prohibits the targeting of juvenile stocks, someone else will." Such negative attitudes are not easy to uproot.

Added to all these have been the long history of political instability, absence of any sustained economic policy framework that could create employment and wealth in the country as a whole. The phenomenon of underemployment and unemployment increases pressure on the marine

resource in an open access situation that opens up fishing as the easiest avenue of employment. We have seen above, the phenomenal increase of the number of fishers in Haiti from 11,000 over decade and a half to 30,000, a 60%+ increase, in a situation of serious over exploitation of resources and an almost irreversible environmental degradation condition. Situations like this do not augur well for the development of positive awareness building of the marine environment, the dangers thereof, the ready acceptance of responsible fishing practices and the internalization of the conservation ethic. Strategies for dealing with the twin problems of illiteracy and poverty among fishers and other community-based stakeholder groups should be subjects for thorough examination at the National Fisheries Conference.

Solutions to the Problems?

One way to tackle the problem of illiteracy is to wage a frontal attack on it through adult education and training programs that the Community Involvement & Education sub-project of the ICRAFD project would be initiating. However, taking the widespread nature of the problem, this may have to be the objective of a national programme that would create a role for NGOs.. Increased environmental and a sustained public education and awareness building campaign targeting the fishing communities, would go a long way to ameliorate the deteriorating condition of the fish stock and the degradation of the environment.

An NGO, *Fio Pro Bim* (FPB), has taken the lead in providing facilities for a public information center where the general public could access information, otherwise scattered and out of the reach of the ordinary people, on the troubling environmental and fisheries resources issues. It is hoped that other NGOs and external donor agencies would follow suit. However, the government should be expected to provide sufficient resources that would enable the National Fisheries Service to get deeply involved in this exercise. Further resource should also be provided to the Service (department) for surveillance and enforcement purposes, and for the employment of Extension Officers.

The widespread incidence of grinding poverty in the fishing communities could be systematically ameliorated through the creation of alternative livelihood programs as part of future projects targeting coastal communities, and as major planks of the operations of the fisher folk organizations, supported by NGOs, with the National Fisheries Service providing technical support. Improvements in the economic condition of the artisanal fishers, coupled with increased awareness of, and access to appropriate technologies, might translate into redirecting

fishing effort into the targeting and sustainable exploitation of species in deep sea and offshore zones. Technological innovation in terms of the controlled use of FADS (*payao*) to support deep sea fishing, the controlled use of Casitas for targeting lobsters, and the introduction of artificial reefs in the coral reef areas to add new habitats for demersal species, could collectively improve catches in the long run and translate into improvement of the socio-economic condition of the fishing communities. The *Martiniquenos* and the Cubans have taken the lead in introducing the FADS to Haitians especially in the South, but the lack of appropriate vessels and equipment has so far restricted its adoption by many Haitian fishermen. The establishment of No-Take- Marine Reserves to serve as refuge for various species and for stock replenishment and preservation of biodiversity could also be seriously examined.

Increased participation of the fisher folk organizations in the decision making process and in the monitoring and surveillance of the fisheries, aiming in the long run, at promoting the co-management of the fisheries of Haiti should be at the core of the management strategies adopted by the National Fisheries Service.

3.0 SOCIO-ECONOMIC BACKGROUND AND FISHING PRACTICES

We have noticed in our review of the literature on the fisheries of Haiti, the critical role played by socio-economic problems such as low educational attainment or illiteracy, lack of access to information and widespread poverty among stakeholders in the fishing communities in perpetuating and degenerating the over fishing and environmental degradation conditions in the marine environment. How far do these findings relate to the socio-economic background, the technology employed and the fishing practices of the respondents in the survey? This section seeks answers to this question.

Age and Gender Roles

The striking features of the age and gender composition of the small-scale fishing industry of Haiti that has been depicted in the make up of the set of Respondents in the Community Baseline Survey are its predominance by the youth and Males. Table 1 below shows the age composition of the Respondents:

TABLE 1: Age Composition

Age Groups	Number	No. & Percentage
< 18	4	107 (89.2%)
19 – 25	42	
26 – 45	61	
46 – 55	7	13 (10.8%)
55+	6	

N = 120

The gender composition of the respondents in the survey is as follows: Male 112 (93.3%) and Female 8 (6.7%). The data shows a preponderance of young people entering the fishing industry as fishermen (89.2% up to 45 years of age). This compares favorably to the official records of national population structures in the Caribbean. Compared to the data that follows, it might also seem to confirm the contention that, as for the rest of the Caribbean, fishing remains essentially a male undertaking. When asked which parent fishes for a living or would likely do so, the results were as follows:

- Mother: 2 (2.7%)
- Father 53 (70.7%)
- Both 4 (5.3%)
- Neither 16 (21.3%) **N= 75**

However, when asked which parent sells fish for a living or would likely do so, of 75 responses the following is the summary of the findings:

- Mother 57 (76.0%)
- Father 4 (05.3%)
- Both 2 (02.7%)
- Neither 12(16.0%) **N=75**

The two sets of responses confirm the reality that traditionally, fishing is done by men and women do the marketing of the catch. Added to the fact that 78.1% of the respondents claimed that relatives from the extended family were engaged in fishing some other forms of occupation in the fishing industry, one could argue that in Haiti fishing and related economic activities continue to be familial traditions handed down from generation to generation.

Education / Literacy

The next Table (2) shows the levels of formal education attained by the respondents of the Community Baseline Survey:

TABLE 2: Levels of Educational Attainment

LEVELS	NUMBER	PERCENTAGE
No formal education	42 (35%)	94.2 %
Primary School (not completed)	36	
Primary School (completed)	18	
Secondary School (not completed)	17	
Secondary School (completed)	4	5.8%
Tertiary/ Vocational (not completed)	2	
Tertiary/Vocational (completed)	1	
University (not completed)	0	
University (completed)	0	

N = 120

The data shown in the table mirror the situation in the entire country. Illiteracy and semi-literacy is a common problem. In this case, whilst about 35% of the respondents have not set foot in an educational classroom, about 92.2% on the whole have not obtained a high school diploma. A similar picture is reflected in the ability of these respondents to read, and presumably, to write as depicted in the following table:

TABLE 3: Reading Ability

ABILITY LEVELS	NUMBER	PERCENTAGE
Read Well	12	**11.76**
Can Manage	18	**17.65**
Read a Little	46	**45.10**
Can't Manage	26	**25.49**

N = 102

The table shows that about 12% of the fishers claim that they could read well, whilst 18% could just manage to read. We should however take into account that generally rural folks, including those in the fishing communities, who can read actually are literate only in the Creole or Patois, spoken by the 95% Blacks and which is also an official language. This puts them at a disadvantage in deciphering technological and scientific literature. Additionally, over 70% of the respondents admit that they could read only a little or not at all.

In terms of access to information, it is heartening that an encouraging 56 or almost 50% of 113 respondents claim that they have radio in their homes, although only 5 (4.1%) out of 113 respondents claim to own Television sets in their homes, a far cry from the situation in other Caribbean countries. It would seem that poverty might have a part to play in this situation. In any case, whether those who own radios might use them regularly to access information and not use them just for entertainment, must for the mean time remain a moot question, awaiting answers from further research. Generally however, difficulty in accessing information via the mass media might make a Herculean undertaking of the building of awareness of environmental and conservation issues among the fishing population. Yet the most effective means of reaching about 30,000 fishers with persuasive messages on conservation of resources is through the mass media. An issue worthy of inclusion in the agenda of the National Fisheries Workshop is how to develop and popularize a national Fisheries Radio Program that targets and involves the small-scale fishers of Haiti.

The use of the print media for building community awareness of critical environmental and conservation issues also meets an almost insurmountable impediment by way of the widespread illiteracy rates among the target population. The next table shows the section of the respondent group that avails itself to newspapers.

TABLE 4: **Access to, and reading of Newspapers**

Frequency	Number	Percentage
Daily (6-7 days per week)	1	0.91
3 – 5 days a week	1	0.91
1 –2 days a week	4	3.63
Rarely	24	**21.81**
Never	80	**72.72**

N = 110

The vast majority of the respondents in the fishing communities (94.53%) either rarely or never access or read newspapers; a function of poverty and illiteracy. On the one hand, access to newspapers is curtailed by illiteracy that inhibits them from making any sense of the information contained in newspapers. On the other hand, poverty and limited technology drives many of the small-scale fishers to struggle for survival by going to fish in the crowded and over-fished inshore waters almost year-round, in order to eke out a meager living for themselves and their households. That leaves little or no time for reading newspapers. Additionally, the small incomes derived form fishing would not be used for purchasing newspapers since it is barely sufficient for the household's survival.

Difficulty in accessing information could translate into low levels of awareness of the principles and methods of modern sustainable fishing practices and environmental protection ideals. The task of externally induced interventions to effect changes to negative attitudes towards the adoption of positive conservation ethics becomes even more arduous.

Fishing Technology

Boat ownership is considered a high social status symbol among the artisanal fishers whilst the crews belong to the lowest social rank. Of 112 respondents in the community survey, 68 or 60.7% claimed to be boat owners, which would appear to be significant for the Haitian society with the high level of grinding poverty. Of this number of boat owners, however, 65 or 95.6%

own only 1 or 2 vessel(s). Furthermore, when this data is considered against the quality of the technology the vessels are made of and how they are powered, the level of significance falls considerably. These are mainly wooden, dugout canoes, compared to the trend in other Caribbean countries, where the wooden structures are being discarded and the majority of the fishing vessels are made of the more expensive fiberglass material.

In terms of the sizes of the vessels, the following data should be instructive:

TABLE 5: **Sizes of Fishing Vessels**

Length	Frequency	Percentage
Up to 8ft.	7	6.4
8ft. to 15 ft.	79	71.8
15ft. to 20ft.	16	14.5
> 20ft.	8	7.3

N=110

The majority (77.2%) of these canoes is below 15ft. in length and could be called dinghy or pirogues. They are far smaller than the types of vessels made of fiberglass that are now becoming popular for offshore fishing elsewhere in the Caribbean. When one takes into consideration the fact that whereas in other countries in the Caribbean, most of the fishing vessels are powered by outboard engines, in Haiti most are still powered by only Oars and Sails, one gets the picture of the use of inappropriate technology, that makes these vessels unsuitable for fishing far from the immediate coastlines. The data from the Community Baseline Survey puts the use of only Oars and Sails at 94 or 85.4% of Respondents. It is this technological inadequacy, underpinned by poverty, that still largely confines fishing in Haiti to the narrow continental shelf, and to a large extent explains the over fishing situation of the inshore fisheries.

Fishing Practices

In Haiti, the narrow continental shelf falls precipitously into the deeps, making the use of line-and-net more suitable as gear for targeting coastal and deep-slope pelagics, supplemented by traps made of bamboo and straw baskets for targeting coastal demersals. The number of responses for each type shows quite an impressive array of different lines and nets that the respondents in this survey claim to use for fishing.

TABLE 6: Fishing Gear Used by Respondents

Name of Fishing Gear	Number of Respondents
Bottom Vertical Line	67
Hook and Line	55
Fish Trap	48
Beach Seine	34
Gill Net	34
Bottom Net	27
Surface Line	25
Fishing 'by feet' (without net or trap)	16
Cast net	12
Hand line	10

The next table provides a categorization of the types of fishes that respondents claim to target and by how many respondents:

TABLE 7 TYPES OF FISHES TARGETED

Names	Categories	Frequencies.
Snappers	CD & RF	97
Lobsters	CD	67
Groupers	CD & RF	64
Wahoo	S & L.P	59
Sharks	CP & CD	53
Mackerel	CP	49
Crabs	CD	49
Conch	CD	44
Tuna	S & LP	36
Dolphin	S & LP	29
Shrimp	CD	28
Sardines	CP	26
Herrings	CP	20

Key: CP= Coastal Pelagics; **CD**= Coastal Demersals; **S & LP**= Small & Large Pelagics; **RF**= Reef Fishes.

When asked to identify the types of fish they regularly catch, 65 mentioned Snappers & groupers; 32 mentioned Sharks; 26 mentioned Tuna and 14 mentioned Kingfish and Dolphin fish. Further probing of some interviewees however, revealed that many Respondents were expressing a desire rather than actuality.

Marketing of Fish

Like their counterparts in the rest of the Caribbean, the small-scale subsistence/commercial fishers in Haiti, with production levels barely surpassing household consumption levels, the greater part of the catch goes directly to the consumer at the point of landing and to the general public at the public market place, as shown in the ensuing table:

TABLE 8: MARKETING OF THE CATCH

Customers	Place	Frequencies
Vendors	Beach/Dock	93
Associations/Cooperatives	At the main office	48
The General Public	Public Market Place/ Roadside	39
Private Marketing Companies	At the main office	15
Hotels & Restaurants	At the establishment	11

It is instructive to notice the relative significant number reporting that their product is sold to their cooperative or association, in tune with the fact that the fisheries' organizations mushrooming in Haiti are technically Marketing Cooperatives and Associations. The relative insignificant number of respondents reporting that they sell their produce to Private Marketing Companies and to Hotels & Restaurants, is also a confirmation that the surplus beyond the portion consumed by the household is negligible, and that the export of fish from this sector and the supply of fish for serving tourists in restaurants and hotels have not yet become predominant features, due partly to the problem of quality assurance.

Conflict & Conflict Resolution

Of 120 respondents only 31 (25.8%) claimed to fish on particular grounds, whilst the majority claim to fish anywhere in Haitian waters. This is an indication of an open access situation, and the absence of property rights backed with a legal authority to exclude outsiders from accessing the resource. Of the 31 respondents who claimed to fish on particular grounds, further probing

showed that they were referring to their personal choice of lucrative grounds, the knowledge about which they tend to keep to themselves. The absence of property rights or territorial rights keeps conflicts between and among Haitian fishers to a minimum. Hence 73% of the respondents think that there are no fisher-versus-fisher conflicts in Haiti, and that where such conflicts occur, they are limited to the destruction of equipment and gear due to limitation of space, or suspected theft of the catch from traps or set nets. These minor conflicts are usually settled through negotiations and less likely to involve the governmental agencies such as the Police or the National Fisheries Service. The majority of respondents however complained about extra-territorial conflict involving fishers from the Dominican Republic, stressing that both parties are guilty of violating each other's territorial waters. This conflict remains unresolved and the CFU has taken the initiative to attempt to find a bi-national resolution to it. It should be one of the subjects on the agenda of the National Fisheries Workshop.

4.0 FISHER FOLK ORGANIZATIONS

The seeming insurmountable problems with the fisheries resources, the marine environment, the looming threat of the collapse of the inshore fisheries and lack of alternative sources of employment or income, perpetuate poverty among the artisanal fishers of Haiti. This has largely stifled the adoption of appropriate technologies that could support the shifting of operations away from the congested and over fished continental shelf. These developments, coupled with insufficient attention to the fisheries sector by government, has triggered the mushrooming of fisher folk organizations, determined to promote their own interests and play a serious role in the regulatory aspects of fisheries management. The emergence of fishers' cooperatives and associations in Haiti has proceeded at a rate unprecedented in the Caribbean. By the year 2000 the number of these organizations was estimated conservatively at about one hundred and forty.

Most of the post-independence governments in the rest of the Caribbean pursued policies that promoted the mobilization of rural-based primary producers such as fishers, craftsmen and farmers for the formation of cooperatives. In pursuit of an earlier policy of fisheries expansion and development for generating employment and increasing production and productivity for food self-sufficiency, governments introduced subsidies that cheapened production inputs and the costs of production. In some cases, avenues for accessing credit were open to primary producers in the form of development finance institutions.

In spite of a major regional shift from a policy of fisheries development to one placing primacy on sustainable fisheries management, in the wake of threats to the sustainability of the expansionist policies, these subsidies have remained in place. Hence small-scale fishers have largely afforded the adoption of new and more efficient technologies and, where necessary, been able to shift operations away from the over-fished near-shore areas. Note should be taken of the lack of any clear policy and lack of employment opportunities elsewhere. Under such liberal conditions and dependence on government largesse, even mobilization for the formation of organizations is considered as a governmental function. The few organizations that have been formed lack the commitment and vibrancy of self-made and self-sustaining organizations.

Their counterparts in Haiti have not had the 'luxury' of operating under governments with any structured policy framework and legal and regulatory institutional arrangements that would effectively establish government legal control over marine space and create operable management and regulatory systems. The end of repressive regimes marked by the ouster of the last Duvalier dictatorship and the ushering in of a democratic regime, created the enabling environment that paved the way for the formation of fishers associations and cooperatives. The void created by inadequate government policy and support has been effectively occupied by Non-governmental organizations (NGOs) that have taken on the task of mobilizing the fishers and encouraging the formation of marketing cooperatives and associations.

Fishers have responded positively, not only because of inaction by their governments, but also in order to eliminate exploitation by middlemen, who purchase the catch at very low prices and made exorbitant profits. They have been more than eager to eliminate these middlemen by mobilizing resources to form marketing cooperatives and associations that would purchase their products at more reasonable prices and sell at the right time for profits that would finance the administration and management of their organizations. And, as stated previously, the response has been overwhelming.

The following are some of the over 140 relatively vibrant and strong organizations in Haiti at the time this survey was conducted:

- APEL: *Association des Pêcheurs de Luly.*
- APL: *Association des Pêcheurs de Léogane.*
- COPECOG: *Cooperative de Pêche la Commune de Grand Goâve.*
- CPTJ: *Cooperative de Pêche et de Transparence de Janti.*
- APEC: *Association des Pêcheurs de Cont.*
- COPEMI: *Cooperative des Pêcheurs de Mitan.*
- ASPET*: Association des Pêcheurs de Trou-A-Lèau.*
- APPG: *Association Pêcheurs des Petite Goâve.*
- APEM: *Association des Pêcheurs des Mont. Rouis.*
- APPA: *Association des Pcheurs de Petite-Anse.*
- Other Associations exist in Marigot in *Sud-Est,* Dame-Marie in *Grand' Anse*; and Montrouis in *Ouest.*

Besides the formation of these Marketing Cooperatives and Associations, they have set their eyes on playing an effective role in the regulation of fisheries laws that has been neglected by governmental institutions, develop avenues for creating loans for members, develop further into Supply Cooperatives in order to store and sell equipment, gear and parts to their members at reasonable prices, influence decision making by participating in management of the resources when these become the norm, and make use of opportunities created by the NGOs and the fisheries administration, to expose their members to training, education and awareness building programs. Ultimately, they aim to strengthen their organizations and build the capacities of their members to effectively play their role in the management of the resources.

Two NGOs have so far been playing a very significant role at the mobilization front. One is FONHADES: *Fonds Haitien de developpement Economique et Social* or Haitian Fund for Economic and Social Development. It aims at the socio-economic empowerment of the poor through the implementation of development projects. It also aims at the promotion of ecologically sustainable programs and projects to control environmental degradation, and seeks the promotion of group formation among fishers and other community entrepreneurs. It organizes literary classes for the less educated fishers. In 1998 it participated in organizing exchange visits between fishers from Haiti and their counterparts from Jamaica, by which fishers learnt from each other through information exchange.

The biggest project it started undertaking when this survey was conducted is the consolidation of primary organizations into provincial or departmental umbrella organizations under a federation named*: GWOUP INSYATIV POU YON MOUVMAN NASYONAL PECHE OGANIZE* or GIP, with the ultimate aim of arriving at a Federation of National Umbrella Organizations to be called, *Fédération Nationale des Pêcheurs* (FNP) or in Creole, *Federasyon Nasyonal Pechè Organize*. By the year 2000, there were 13 Primary organizations that had been grouped as KOPDA or *Kòdinasyon Peché Latibonit* in the Artibonite Department. The OUEST Department also had a group of 11 Primary organizations named COOPECHE or *Organizations de l'Quest pour la Pêche*. It was this departmental fishing federation that participated in the exchange program with fishers from Jamaica organized by another NGO named FioProBim (FBM) or *Foundation pour la Protection de la Biodiversité* or Foundation for the Protection of Marine Biodiversity, for which purpose the Information Centre on Boidiversity has been established. FOPROBIM has been organizing Beach Cleaning Activities, Waste Management Programs to control pollution and Public Awareness Programs.

There is no doubt that the National Fisheries Service will have to collaborate with these NGOs in furthering the projects the latter have initiated, including the formation of Federation of Provincial Fisher folk Organizations initiated by FONHADES and Biodiversity Conservation program initiated by FOPROBIM. There is also no doubt, as the founder of FOPROBIM, Jean Wiener, has said: "Existing fishermen's associations must be strengthened and new ones encouraged where they are needed". This will give them "easier access to financial aid and fishing equipment than if they asked alone. The fishermen (90% of whom are illiterate, against a national average of 75%) will also win greater respect in the community." This should bring together the National Fisheries Service, the NGO community and the CFU, through the ICRAFD project, to collaborate their efforts in promoting the participation of organized resource user organizations in Haiti for the co-management of the fisheries resources and the conservation of Biodiversity in Haiti.

5.0 FISHERIES ADMINISTRATION

The Administration of fisheries falls under the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR), and directly under the Director of Natural Resources. The Fisheries and Aquaculture Service (SPA) Unit was recently upgraded to the status of a Directorate known as *Direction des Pêches et de l'Aquaculture* (DPAQ) or The Directorate of Fisheries and Aquaculture. In the year 2001 it had a staff strength of 22, with 11 of the technical staff with first degrees and 6 with Masters' Degrees. The existing staff considers Data Collection and Management and Statistics and Stock Assessment as the priority areas of the department, and the areas where problems with recruitment are critical. Some senior fisheries officers listed the human resource needs of the department as follows: Laboratory Technicians for fisheries biological analysis, a Data Manager, Quality Control Officer and Extension Unit Head.

The department suffers from a lack of basic administrative facilities and institutional capabilities. Its technical staff compares favorably with any in the Caribbean region but there is an acute shortage of material resources for them to utilize in their operations. It lacks basic facilities that are taken for granted by the fisheries departments and divisions of other Caribbean countries. Limited governmental attention to the fisheries sector is reflected in the absence of budgetary allocations for the administration of the sector and inadequate institutional framework for fisheries resource management of both the capture (marine and inland) and the culture fisheries.

The senior staff realistically stated that due to these handicaps, the functions of the Fisheries Service are mainly limited to providing advise to the private sector, handling of administrative files and matters, and occasionally, feeble attempts to enforce existing fisheries legislation without much success. The Fisheries Service cannot improve the lack of funding situation from other sources of funding since donor agencies prefer working with NGOs, consulting firms and academic and research institutions, rather than directly with governmental agencies. Some NGOs such as FONHADES and FOPROBIM have gone far ahead in forging strong working relations with the Resource User Organizations and implementing strategies for promoting biodiversity conservation.

The absence of a clear national policy framework and management strategies is reflected in the lack of consensus among the top staff on sectoral and capacity building priorities: The survey sought two separate positions on priority areas on fisheries policy and priority areas for training of staff. The outcome presented under positions A and B is shown in Tables 9 and 10 below:

TABLE 9: Policy Priority Areas

Policy Areas	Position A	Position B
Stock Assessment	1	9
Habitat Protection	2	7
Institutional Strengthening & Training	3	6
Fisheries Administration	4	1
Fisheries Data Management	5	4
Surveillance, Monitoring & Enforcement	6	3
Fisheries Technology	7	8
Community Participation & Education	8	2
Fisheries Co-Management	9	5

TABLE 10: Staff Training Priority Areas

Subject Areas	Position A	Position B
Fisheries Statistical Analysis	1	4
Data Management	2	3
Environmental Protection	3	7
Fisheries Research	4	5
Community Involvement & Education	5	2
Fisheries Conservation & Management	6	1
Post-Harvest Technology	7	6

Under Table 9, Position A there is consistency between the high priority rendered to Stock Assessment and Habitat Protection (1 & 2), and the low priority accorded to Community Participation and Fisheries Co-Management (8 & 9), although one cannot easily fathom the disparity between the priorities accorded to Stock Assessment (1) and Data Management (5).

Under the same Table 9, Position B tends to present almost opposite positions to those of Position A by according low priority to Stock Assessment and Habitat Protection (9 & 7) whilst according relatively high priority to Community Involvement & Education and Fisheries Co-Management (2 & 5).

Under Table 10, Position A maintains the consistency displayed under Table 9, by according high priorities to Fisheries Statistics and Data Management (1 & 2), and according relative low priorities to Community Participation & Fisheries Management (5 & 6), much the same way as Position B also accords high priority to Community Participation and Fisheries Management (2 & 1), and lower priority to Fisheries Statistics and Data Management (4 & 3).

Clearly the greatest tension on priority areas falls among four (4) subject areas, Stock Assessment, Data Management, Community Participation and Education and Fisheries (Co-) Management. It is hoped that following government's lead in developing appropriate policies for the development and management of the fisheries resources in the near future, the department would be guided to develop consensual positions, not only on these four policy areas, but on all the areas listed under Tables 9 & 10. Indeed, given the importance of all the policy areas listed in Table 9, we would suggest that all of them become issues for policy assessment at the National Fisheries Conference. It is also hoped that the Fisheries Administration would soon develop consensual positions for the training of staff (Table 10) before recommendations are made for the award of long-term scholarships. Such recommendations should be based on national fisheries management and development policies, with human resource needs clearly factored in.

We now turn our attention to brief overview of some of the subject areas that the National Fisheries Service has to deal with, in spite of the many difficulties that it faces.

1. <u>Extension Programs</u>

The National Fisheries Service claims that rendering extension services to the fishing communities began as far back as 1985, although insufficient governmental attention to the sector and lack of resources had not made the operations effective. The focal point, according to the Administration, has always been the small-scale fishers and the operational venues had been the beaches and the public fish markets.

The following were listed as the main areas of concentration then, and currently:

- Monitoring of adherence to regulations e.g. habitat protection, mesh sizes for nets and traps and closed seasons for lobsters and conch.
- Training and Education of fishers for institutional strengthening and capacity building.
- Functioning as intermediaries between government and fishers associations.
- Information dissemination and public awareness building.
- Cultivating appropriate social and working relations with the fishers.

The administration however, admits that several constraints make futile, their attempts to implement activities geared towards achieving these goals. The problems of lack of basic facilities, materials and equipment are compounded by the widespread illiteracy that makes attempts to change certain negative attitudes extremely difficult. The Service claims that recently the staff has been working closer with the fishers and working relations have improved considerably. Quite a few meetings have been held with representatives of the burgeoning fisher folk associations to discuss problems that fishers face and to respond to their demands, although there is room for more regular consultative meetings to determine their needs and to collectively seek solutions to their problems.

The most immediate challenge is how to collaborate with the NGOs in their consolidation of the numerous primary organizations into provincial entities, and ultimately to consensually form a single national umbrella union, acceptable to the organizations in all the Departments. Already subtle political infiltrations have begun sowing the seeds of conflict. *The Association Nationale des Pêcheurs* (ANP) based in Luly and greatly influenced by the leadership of APEL, *the Association des Pêcheurs de Luly*, claims to represent a 10,000- member national union. There was also talk of another highly politicized group, the *Fédération Nationale des Pêcheurs,* (FNP) also claiming to be a National Umbrella Organization, even before the provincial consolidation exercise is completed. The National Fisheries Service must find a way of intervening to avoid open conflict that could sow permanent seeds of discord among the Resource User Groups.

2. <u>Fisheries Research</u>

The Fisheries Administration admits that lack of resources in terms of funding and equipment and human resources have rendered this area out of its reach. There have been some research projects undertaken by the University and research institutions, the Cuban Mission then in the country, and the private sector in the areas of Stock Assessment, Algae

Identification, Fisheries Biology and Oceanography. Unfortunately, the National Fisheries Service is not able to influence the planning and implementing of these studies.

It is expected that through the ICRAFD project, Haiti would be more involved in the planning and implementation of fisheries research, including getting fully involved in the decision making process.

3. Data Collection and Management

In spite of the fact that Stock Assessment ranks very high in the priorities of the Fisheries Administration, no system of data collection, whether catch & effort, biological and socio-economic has been established. Hence the process of scientifically assessing the stock, developing policy advisory and ultimately devising management plans for the sustainable management of the fisheries resources cannot be pursued. The numerous environmental problems cannot be addressed unless effective data collection concerning the coastal areas has been conducted. A number of officers have been assigned responsibilities in this area but lack of resources has rendered them inactive, with many assigned other duties on an ad-hoc basis.

The Cuban Assistance Program had initiated a limited catch and effort data collection program in their study of the continental shelf fishery, and the NGO, FONHADES also engages in the collection of socio-economic data for their own purposes, whilst a National Database is located at the National Statistical Office.

The ICRAFD project, under the coordination of the CFU has already initiated action to train staff and provide other assistance to introduce a viable data collection and management system in Haiti. This should be preceded with, and accompanied by, Public Awareness and Education programs tailored to winning the support of the fishers' groups for the exercise.

4. Aquaculture

At the time when this survey was conducted, there were only three privately owned aquaculture establishments in Haiti. There is an Aquaculture Unit set up in the department with 8 officers assigned to it and plans exist to expand the staffing position in the near future. The Aquaculture station at Port Sondé was being rehabilitated with Cuban assistance. The latter

had released about 40 million fingerlings of Tilapia and Carp (*Cyprinus carpo*) into lakes across the country.

The Fisheries Service realizes that in view of the unsustainable condition of the fish stocks in the near-shore marine fisheries, there is need to focus more on the development of aquaculture, if only to feed the nation. There was therefore the need to expand the aquaculture sub-sector through private investment. That would mean the development by government of a policy framework, including tax incentives, to attract private investment within which this expansionist strategy could be implemented. Feasibility studies, prior to proposal development and investment approval, should of necessity include Social and Environmental Impact Assessment. The National Fisheries Service would be expected to play a leading role in providing technical leadership and assistance to would-be investors. Hence this is an area that the National Fisheries Service might earmark for training programs for its officials. There is a compelling reason to put this issue on the agenda of the National Fisheries Workshop for the Stakeholders to deliberate on the strategies for a national focus on this sub-sector, and to examine if there is a role for the fisher folk organizations to play in this national drive, including investing in that area as a means of earning extra income, and possibly of relieving some of the pressure on the marine fisheries. Discussions should take into account the social, economic and environmental dimensions that could come into play.

5. Post – Harvest Technology

This is another critical area where no policy guidelines have been formulated by government, and hence no regulations exist to ensure that fish and fish products are handled under the required sanitary conditions and processing is done under strict guidelines to meet international marketing standards. By 2001 about eight processing plants owned by private business entities were in operation but the Fisheries Service had no control over their operations. It was no wonder that Haiti was temporarily banned from exporting fish products to the lucrative European and North American markets until measures are taken to improve standards.

The department has a few officers who had been trained in HACCP but they would still need the services of a Laboratory Technician for biological analysis, and a few more to be competent in that area. It is also important that fishers are trained in this area so that the handling of fish in the required sanitary manner is done from the point where the catch takes place to the point where they are processed. Moreover, meeting of high sanitary standard should not be limited to

only products for export to oversea markets, but also should apply to fish for the local market and local consumption. This is therefore, another critical subject that should be thoroughly deliberated on by the Stakeholders at the National Fisheries Workshop for the generation of policy advisory and the spelling out of the role that fishers and other stakeholders, including NGOs and governmental institutions should play.

6. Ornamental Fishery

This is a small sub-sector that has not been formally recognized. By the year 2000, there were only seven privately owned establishments engaged in exploiting the product, in fresh and brackish waters, mainly around Fort Liberty in the Nord Est and Dame Marie around the South Capes in Grand Anse. About 275,822 specimens were exported in the year 2000 but the value figures were not available. This fishery has also been targeted for expansion. The production of hybrids should also merit attention. A management plan and related regulations for exploitation, and training programs for both fisheries officers and resource users, are needed to ensure sustainable exploitation.

7. Marine Protected Areas.

The over-fishing and habitat degradation that has occurred in the coastal waters in Haiti calls for drastic measures to halt the downward slide of conditions and to improve the health of the fisheries and the marine environment. One of the means of achieving these objectives is through the establishment of No-Take-Marine-Reserves (NTMR). By the year 2000 the government had instituted laws that requires the establishment of 5 M P As but only one, had been established around Cap-Haîtien. There are plans for the establishment of more of such MPAs as for example, the islands around Luly. What is of major concern is that the designing was done without the involvement of the fishers and other stakeholders.

It should be imperative that controversy should be avoided in this exercise by involving resource user groups in the choice of sites, the planning, the implementing, particularly the management. It should be also a critical requirement that the fishers and other stakeholders benefit from community awareness campaigns and trained in the management of these reserves, including their role in the co-management of these entities. This is a critical area that should be the subject of intense deliberation for the generation of policy advisory at the forthcoming National Fisheries Workshop.

It should be clear by now that the fisheries industry in Haiti faces some huge problems that would need the concerted effort of the National Fisheries Service, the Resource User groups and other stakeholders, particularly the NGOs, to find workable solutions. It is also imperative that the involvement and participation of the Resource User Groups in the decision making process should become a stringent requirement. It should be required that government should provide resources for the National Fisheries Service to carry out its obligations.

Subjects such as the finding of solutions for the problems in the industry, and improvements to be made to critical sub-sectors such as M P A s, Post-Harvest Technology, Aquaculture, and how to win the support of fishers for data collection must be issues to be deliberated at the forthcoming National Fisheries Workshop by the Stakeholders in the industry.

6.0 FISHERIES MANAGEMENT

A Fisheries Management Plan (FMP), prepared with the assistance of FAO, has existed since 1999, but has not yet been implemented, due to lack of funds. Among its main objectives are the following: Restoration of the degraded habitats; training in advanced fisheries and addressing the literacy problem. The main weakness was that it was prepared without any serious consultation with, and involvement of the Resource User Organizations and other community-based cultural groups and stakeholders. Thus it has been criticized in some quarters for ignoring the cultural and socio-economic realities of the target groups. There are plans to overhaul this FMP and develop a new National Fisheries Management Plan for Haiti under the ICRAFD project. It is hoped that these shortcomings will be addressed in the preparation of the new plan.

The Fisheries Act of 1977, and regulations (1982) continues, at least on paper, to be the main legal force in the management of the fisheries. The Extension Agents of the Fisheries Service are responsible for the monitoring, surveillance and enforcement aspects. However, due to lack of resources nothing much takes place. We have shown in an earlier chapter (4.0) that it is the lack of action in these areas that partly motivated the fishers to form fishers' organizations. The ambitious aim was to fill the void by playing the role of monitors of the fisheries to ensure some modicum of compliance.

The most important fisheries regulations are closed season for lobsters (April 1 to September 30) and for conch; recommended mesh sizes for nets; protection of the coastline including mangroves. There was supposed to be strict enforcement of these regulations. However, generally, there is neither awareness of, nor understanding of the fisheries regulations among the resource users. There is lack of information flow to fishers on these issues. It is no wonder that when Respondents of the Community Baseline Survey were asked if they were aware of any fishing laws, 97 or 91.5% responded negatively. There is also a legal requirement that all fishers are to be registered by the Ministry responsible for fisheries, but this has never been enforced. There is a serious need for the MARNDR to provide the resources for the enforcement of the present regulations, and any others that would be introduced in the future.

The responses that respondents gave to questions put to them in the Community Baseline Survey portray evidence of general lack of awareness and inconsistencies in some cases. Table 11 summarizes Respondents' perceptions and observations on the condition of the marine stocks:

TABLE 11: Summary of Perception of Condition of the Stocks (YES answers)

Questions	Finfish	Lobster	Conch
Concerned or worried about condition of the stocks?	101 (87.8%)	60 (95.2%)	26 (92.9%)
Last 5 years, has catch weight decreased?	98 (88.3%)	55 (96.5%)	20 (80%)
Last 5 years, has location of the stocks changed?	56 (57.1%)	21 (55.3%)	14 (53.8%)

The data presented in the table shows that Haitian fishers are aware that the health of the stocks is deteriorating, as exemplified by the high percentage of Respondents expressing disquiet about the condition of the three major groups of stocks, and their responses on enquiries about the catch weight. Although the response to the query on the shift of location of the targeted species might not be all that overwhelming, follow up probing showed many fishers complaining that disturbing environmental conditions in the inshore fishing grounds, caused by destruction of fish habitats, pollution and sedimentation, has led to the migration of valuable species to off-shore locations; out of reach by the antiquated technology utilized by the small-scale fishers.

Indeed, an analysis of the probing exercise on the entire data presented in the table on the likely causes of the deteriorating health of the fish stock provided the following sequence in descending order:

1: Systematic environmental degradation

2: The targeting of juvenile stocks

3: Overcrowding of the fishing grounds

When direct enquiries were made on the question of causes of the unhealthy condition of the fish stocks, the number of responses falling under each of the three categories listed above in the same order, is presented in the Table 12:

TABLE 12: CAUSES OF POOR HEALTH OF THE STOCK

Groups	Details	Responses
#1: Environmental Degradation	Mangrove Destruction	**105**
	Pollution from sewage	62
	Dynamiting/Bleaching	56
	Weather changes	54
	Sedimentation	52
	Lost traps still fishing	46
	Pollution from farms	24
	Pollution from factories	22
#2: Targeting Young Fish	Catching juveniles	**103**
	Trap meshes too small	84
	Net mesh too small	68
#3: Too much pressure	Too many nets	59
	Too many traps	56
	Too many small fishers	45
#4: Others	Not much credit finance	82
	Smarter fish	63
	Foreign illegal fishing	55
	Not enough markets	20
	Hotels/Tourism	13

The table clearly supports the grouped perceptions listed above that was the basis for the initial grouping in Table12. Haitian fishers, at least as depicted in the case of the respondents to the community survey, are greatly concerned about the damaged conditions of the marine environment, as evidenced by the number of environmental concerns listed in the table. Second, they also think that measures should be taken to avoid the targeting of juvenile stocks, particularly by the use of small meshes on nets and traps. Third, even though they are aware that the phenomenal increase in the number of fishers and related gears, they are not

convinced that increasing effort pressure on the resources contributes as much to the deteriorating condition of the fish stocks as they are concerning the degradation of the environment and the targeting of juvenile stocks.

This pattern of perception becomes crystallized when the data in the following table on support of strategies for halting the deterioration, and improving the condition of the resources is analyzed:

TABLE 13: Support for Management Strategies

Strategies	Group #	# Observations
Protect small fishes	2	103
Heavy fines for dynamiting & use of Poisons	1	94
Use of wider net meshes	2	93
Establishment of Sanctuaries	2	93
All fishers to be licensed	4	92
Fines for licensing violators	4	84
Establish closed seasons	2	84
Use if bigger trap meshes	2	84
Ban some destructive gears	1	81
Protect mangrove and sea grass beds	1	73
Limit number of boats	**3**	**63**
Limit the number of fishers	**3**	**50**

The table depicts a preponderance of observations that show support for management measures that would address the problems with the deteriorating environmental conditions and ensure that fishers are not allowed to target juvenile stock. However, measures that would limit the number of fishers in order to reduce the pressure on the stocks are the least popular. The message that comes through is that, Haitian fishers would readily support, and in fact, participate in the implementation of management measures that would effectively tackle the problems with the environment and measures that would ensure that juvenile stocks are given the chance to spawn, at least once in their life cycle, before being captured.

However, fisheries officials will find it harder to introduce and implement measures that would hold numbers of fishers at current levels by suspending licensing of new entrants, or ensuring the non-replacement of retiring or dead fishers, or enforcing the drastic reduction of current number of fishers. For these reasons, the making of decisions to introduce data collection, licensing of fishers and the registration of fishing vessels must involve the Resource User Organizations and must be preceded and accompanied by the planning and implementing of public awareness campaigns.

The fishers of Haiti as Respondents to the Community Baseline Survey, left no doubt that they wish to play an active role in the resource management process, as shown in the ensuing table:

TABLE 14: PREFERRED ROLE IN FISHERIES MANAGEMENT

ROLES	Frequencies
Fishermen to be involved	**100**
Fishermen to play the leading role	94
Fishermen to unite for playing that role	91
Authorized to turn in unlicensed fishers	19
Authorized to turn in no fishing areas violators	19
Authorized to turn in users of nets/ traps with small meshes	12
Authorized to turn in dynamiters	9

Respondents are not only prepared to play a role but to play a leading role and to organize for that purpose, as they are currently doing. These healthy positions are however not consistent with their stand on turning in violators of regulations backed by legal instruments when they are given positions of authority. The preparedness of the fishers to be watchdogs over the violation of regulations would be a strong indicator of their readiness to assume leadership positions as co-managers of the fisheries resources. The next table shows a strong desire, among the Respondents, to be involved in the co-management of the fisheries resources:

TABLE 15: CO-MANAGEMENT OF THE FISHERIES RESOURCES

Form of Management	Frequencies	Percentage
Government Alone	7	**6.1**
Fishers Alone	4	**3.5**
Fishers & Government	104	**90.4**

The table shows an overwhelming majority of Respondents prefer the co-management of the fisheries resources, involving collaboration between fishers' organizations and the institutions of government. However, fishers' unwillingness to bring violators to justice, irrespective of their relationship with the culprits, contradicts their desire to play the leadership role in the co-management of the fisheries resources. The elements of equity, fairness and justice without discrimination are critical requirements for leadership positions in any co-management arrangement. These are lessons that should be inculcated in the Resource User Organizations and their leaders through training and education and public awareness building programs. The subject of co-management should be on the agenda of the National Fisheries Workshop.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This is the report of the multidisciplinary survey of the fisheries of Haiti that constituted the main activity carried out by a technical team from the CARICOM Fisheries Unit, Belize on a planning mission to Haiti. The main objective of the mission was the planning of strategies for promoting the sustainable management of the fisheries resources of Haiti. It will serve as a feedback to the stakeholders who served as Respondents of the survey. The main issues arising from this report will form the basis of a two-day National Fisheries Workshop. Representatives of the major stakeholder groups in the fishing industry in Haiti would be deliberating and generating policy advisories for the national policy makers.

The 12 issues involved include the following:

- Widespread poverty among the small-scale fishers of Haiti.
- Illiteracy in the fishing communities.
- The threat of stock depletion in the inshore fishing zones and how to transfer some of the fishing pressure to the offshore areas.
- The problem of environmental degradation in the coastal areas.
- Extra territorial conflict situations and how to resolve them
- The promotion of co-management of the resources.
- Priority areas in policies for sustainable management.
- Planning for specific activity areas of the fisheries, including data collection and management, aquaculture, fish handling and marketing and Marine Protected Areas.

In preparation for the National Fisheries Workshop, it would be the responsibility of the fisheries Administration of Haiti to conduct Stakeholders Identification and Analysis to arrive at identifying the stakeholder groups that should be represented at the Workshop. The stakeholder groups could include the direct and indirect resource user groups such as the fishers' organizations, the traditional vendors and processors, the processing companies, representatives of the industrial fishers, middlemen in the fish trade, national fisheries administrators and managers and relevant NGOs. The two-day workshop would generate a number of policy advisories that would inform future strategies for the sustainable utilization and management of the fisheries resources of Haiti.

The National Fisheries Workshop would be immediately followed by the inauguration of a National Fisheries Dialogue Group representing the stakeholder groups. This will be a permanent institutional arrangement for further discussion of some of the key issues deliberated at the workshop and would also be a permanent forum for the generation of policy advisory on subsequent issues that would arise in the fishing industry.

The Workshop would break into four groups, each comprising an equitable mix of the stakeholder groups represented at the forum. The issues would be presented in the form of questions to which answers would be sought and reported on. The following is a tabulation of the groups and the issues that each group would be addressing:

NATIONAL FISHERIES WORKSHOP: GROUP ASSIGNMENTS

GROUPS	ISSUES
1	**What should be done about poverty among the small-scale fishers of Haiti?** **What should be done about illiteracy among small-scale fishers of Haiti?** **What strategies are to be forged to facilitate the generation of extra-income earning opportunities for the artisanal fishers of Haiti?**
2	**What actions are to be taken to reverse environmental degradation on the coasts of Haiti?** **Elaborate on strategies for shifting fishing by small-scale fishers to offshore grounds?** **Show how to deal with extra-territorial conflict between Haitian fishers and fishers from neighboring states.**
3	**Elaborate on strategies for winning the support of fishers for Data Collection and licensing and registration of fisheries and vessels.** **Explain how to facilitate the participation of small-scale fishers and their organizations in Aquaculture.** **Elaborate on strategies to involve fishers and their communities in the management of Marine Protected Areas and Marine Reserves.**
4	**Elaborate on strategies for promoting the co-management of the fisheries resources in Haiti.** **Study Table 9 in the Report and develop and defend a priority list of policy areas for the Haitian fisheries.** **Elaborate on strategies to introduce small-scale fishers to HACCP, quality assurance and marketing strategies.**

The findings of the National Fisheries Workshop would be compiled and distributed among the stakeholder groups in Haiti, including the national policy making authorities.