



CRFM Secretariat



**The Consideration of Socio – Economic
and Demographic Concerns in
Fisheries and Coastal Area
Management and Planning**

Jamaica Case Study

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Case Study

The Consideration of Socio-Economic and Demographic Concerns in Fisheries and Coastal Area Management and Planning in Jamaica.

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1. General Country Information

The Maritime Areas Act, 1996 confirmed Jamaica's status as an archipelagic state by establishing archipelagic baselines as straight baselines joining the outermost points of the outermost islands and drying reefs of the archipelago of Jamaica. The main Island of Jamaica is located at 18° N and 77° W, about 145 km south of Cuba and 161 km west of Haiti. The tropical maritime climate is modified by the northeast trade winds and land-sea breezes. Average temperature is 27C⁰, ranging from 23C⁰ in winter to 28C⁰ in summer.

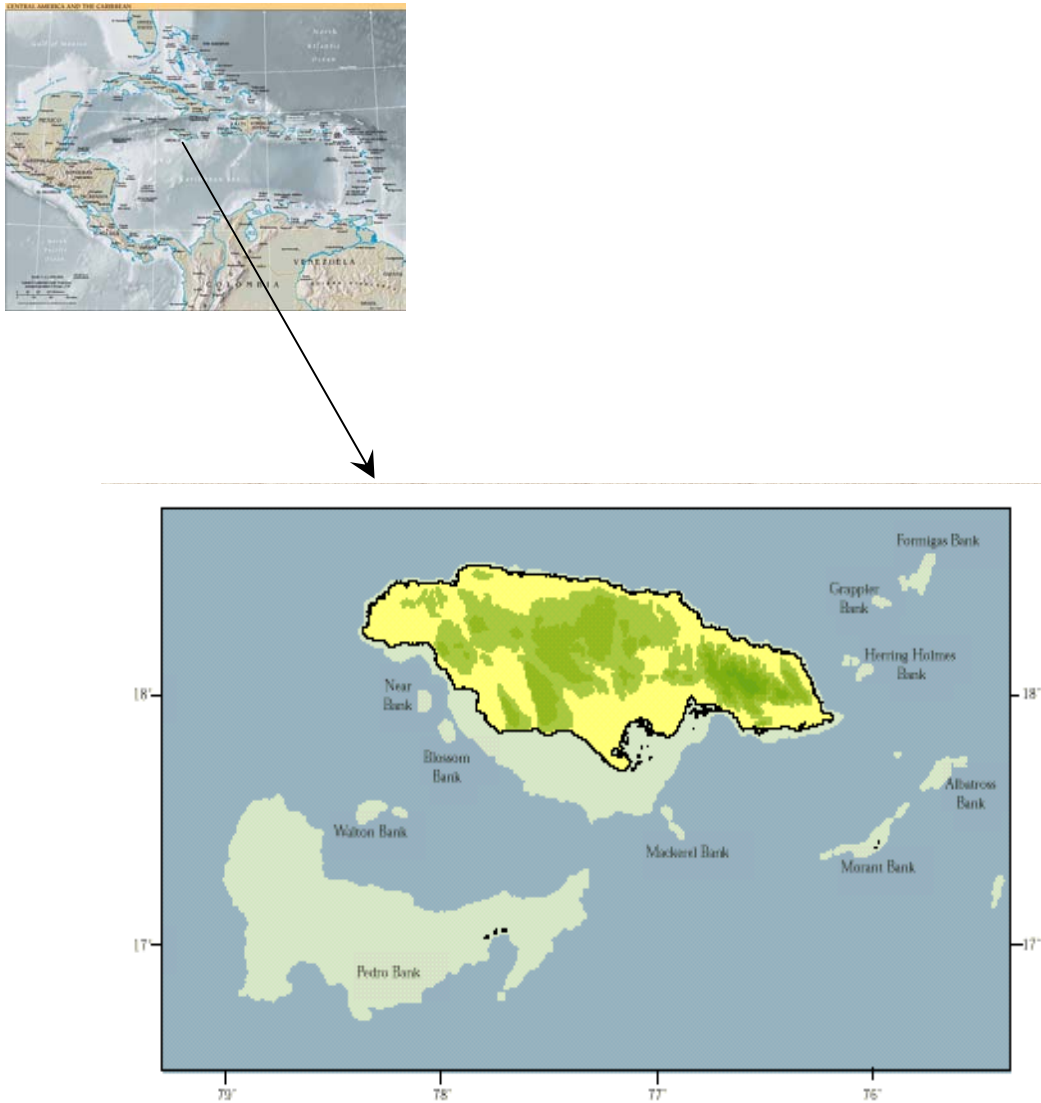
The main Island's terrain is characterised by east to west interior mountain ranges along almost its full length. The highest elevation, the Blue Mountains rise to 2,256 m. The Island is 236 km long, between 35 and 82 km wide with a total area of 10,991 km². The coastline is 1,022 km long and is punctuated by numerous coastal features such as bays, beaches, estuaries, harbours, lagoons, mangrove swamps and rocky shores. The relatively wider south island shelf attains its maximum width of 24 km due south of the parishes of St. Catherine and Clarendon. The eastern section of the south shelf is dominated by large reef systems. The narrower north shelf (maximum width 1.6 km, less than one nautical mile) is characterised by fringing coral reefs. The island shelf and nine proximal banks have a total area of 4,170 km².

The Archipelagic Waters, approximately 12,000 km², include the Morant Bank and most of the Pedro Bank. The Territorial Sea is 12 nautical miles from the archipelagic baseline. Jamaica has not yet completed maritime boundary delimitation negotiations with all the relevant States. However, the total area of Jamaica's Exclusive Economic Zone (EEZ) is estimated to be about 274,000 km². Located within the EEZ, to the northeast of the mainland are several small Banks (i.e. Henry Holmes, Albatross, Grappler and Formigas).

Jamaica's oceanic banks rise abruptly from depths of well over 500 m to a submarine plateau with mean depths of 20 - 40m. On some banks, depths of less than 20 m are encountered in areas where reefs, cays and shoals are present. Proximal banks to the south are the New, Blossom, Waltham and Dingle Banks and to the northeast the Grappler, Henry Holmes, Formigas, Albatross, Morant, Bowditch and Salmon Banks (see Fig. 1). Offshore banks are the Pedro and Morant Banks and Alice Shoal, which is located in the Joint Regime Area, a maritime space shared with Columbia, between the Seranilla and Bajo Nuevo Banks.

The Morant Bank is located east of the main island (about 100 km²). The Morant Cays serve as a base for fishers largely from the eastern section of the island. The Pedro Bank is located to the south of the main island. This bank has a total area of 8,040 km², a submerged plateau with depths ranging from 0 to 50m and an average depth of 24.5 m. The circumference of the bank is about 590 km. There are westerly currents of about 1.5 - 2.5 knots. The bottom consists of sand flats, sparse coral cover and seagrass beds. On the southeastern section of the Bank are three small cays, the North East Cay, Middle Cay, both inhabited by fishers (some up to eleven months of the year), and South Cay a designated bird sanctuary.

Figure 1. Map Showing Jamaica and Fishing Grounds



1.1 Jamaica's Population

The 2002 census estimated Jamaica's population at 2,624,700, with a population growth rate of 0.5%. The ethnic composition of Jamaica is as follows: Blacks – 90.9%, East Indians 1.3%, whites 0.2%, Chinese 0.2%, Mixed 7.3% and others 0.1%. The labour force was estimated at 1,115,600 in 1999 with the agriculture sector employing 5.8%. In the same year, unemployment stood at 16.0%. The average household size in 2001 was 3.4, with rural households continuing to be slightly larger (average size of 3.7 persons).

The population distribution remained the same as in 2000. The majority of persons (57.8%) were of working age, 32.9% were children 0-4 years and persons 65 years and older made up 9.3%. The incidence of poverty decreased in 2001, moving to 16.8% from 18.7% in 2000. Rural Areas experienced a decline to 24.1% from 25.1% in 2000. For the Kingston Metropolitan Area (KMA) and other towns, the incidence of poverty was 7.6% and 13.3%, moving from 9.9% and 16.6%, respectively for 2000.

1.2 ECONOMY

At the end of 2001 the real Gross Domestic Product amounted to J\$ 19,940.2M. The contribution to GDP (in producer values) in 2001 by the agricultural sector was J\$1,451.0M, with fisheries contributing J\$86.4M (at constant 1986 prices). Overall percentage contribution to GDP by the agricultural sector was 7.3%, with fisheries contributing about 0.4% (ESSJ Report 2001).

1.2.1 Fisheries Sector

1.2.1.1 Fishers involved in marine capture fisheries

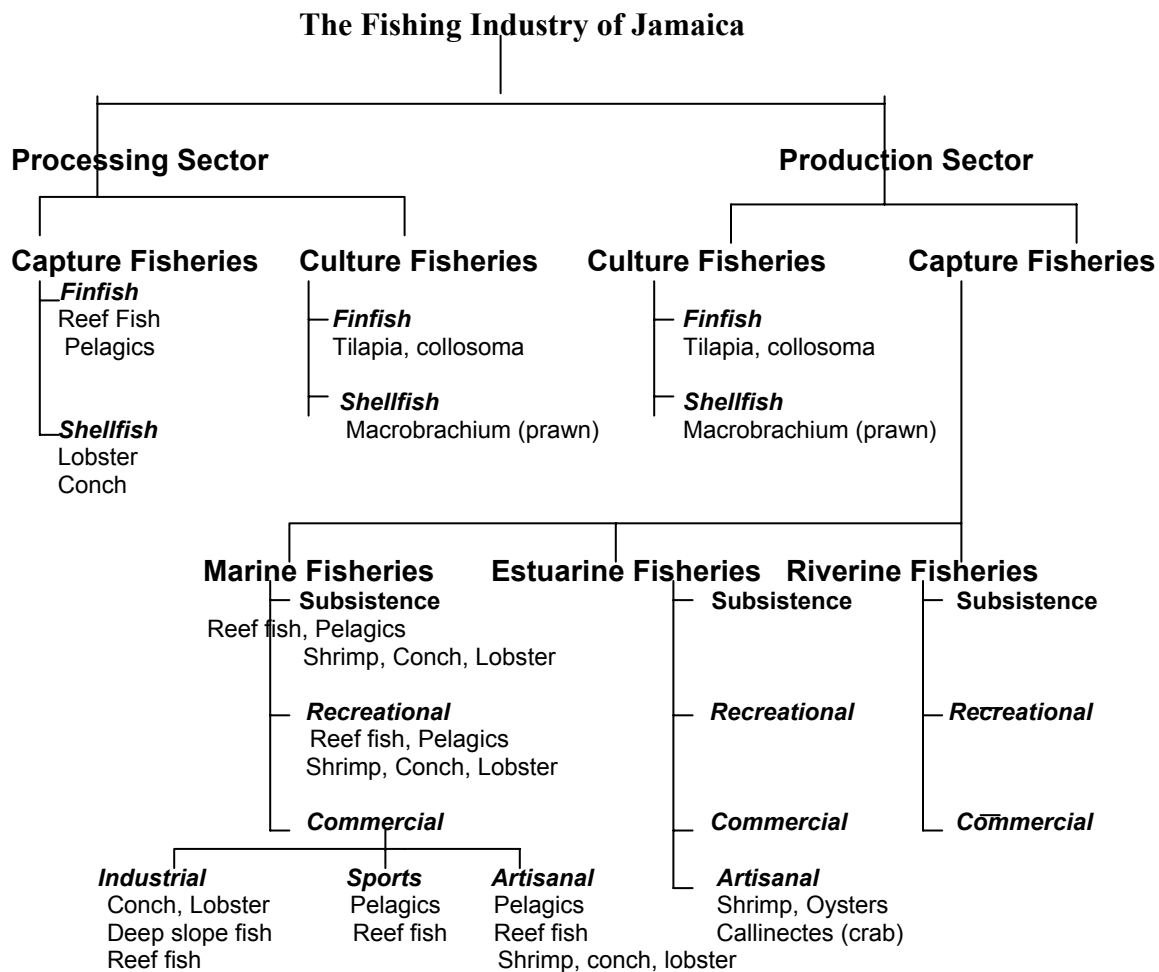
Figure 2 provides a general overview of the current structure of the fisheries sector. The Jamaican fisheries sector can be broadly divided into a Processing Sub-Sector and Production Sub-Sector with both sub-sectors having capture and culture fishery elements. The primary capture fishery species processed for exportation are conch and lobster while the red hybrid Tilapia are the dominant cultured species processed. Most capture fishers operate small boats (artisanal), and only a small number are engaged in industrial fishing, mainly on Pedro Bank, for conch, lobster and finfish. An even smaller number is engaged in the tourism sector on charter boats and sport fishing boats. There is also a relatively small recreational fishery and inland waters capture fishery. However, very little information on these fisheries is currently available.

In 2004 there were 15,392 registered fishers in Jamaica, but estimates indicate that there may actually be over 20,000 full and part-time Jamaicans engaged in fishing. Based on the Fisheries Division's Licensing and Registration data, some 5% of registered fishers are female who actively engage in fishing at sea and surprisingly, just under 43% of registered fishers reported to have primary school education while about 50% indicated that they have at least high school level education. These figures are considered significantly high and are in strike contrast to the experience of the Fisheries Division where a relatively high proportion of fishers are illiterate. The data also reveal the pressing need for fishers to empower themselves through fisher

organizations as only 6% of all fishers registered are or have ever been associated with a fisher organization (see Tables 1.2.1.1a to 1.2.1.1e.below).

In addition to those going to sea, a large number of people, mainly women, are engaged in fish processing on shore as fish cleaners or in processing plants, and marketing, as so-called “higglers.” Many women engaged in marketing are also boat owners. A large number of artisanal fishers, in particular on the north coast, have incomes well below the poverty level and many have been known to leave the fisheries, although finding alternative employment is very difficult.

Figure 2: Schematic Showing the Organization of the Fisheries Sector



Social details compiled from the Fisheries Division's Register of Fishers are presented in Tables 1.2.1.1a to 1.2.1.1e below.

Table 1.2.1.1a. Family status

Status	Number of fishers
Common-Law	3896
Married	3354
Divorced	75
Single	6613
Widow / Widower	69
Other	83

Table 1.2.1.1b. Time in the fishery

Status	Number of fishers
Full Time	11,188
Part time	2,808 (20%)
No time	82
Unknown	3

Table 1.2.1.1c. Gender

Status	Number of fishers
Male	13,379
Female	691 (5%)

Table 1.2.1.1d. Educational Status

Status	Number of fishers
Primary	5316
Secondary	5138
Traditional High	1172
College / University	602
Elementary	305

Table 1.2.1.1.e. Cooperative affiliation

Status	Number of fishers
Cooperative member	852 (6%)
Non-coop. member	13,238

Source: Fisheries Division Database LRS

1.2.1.2 Fisheries Production

Over the past several years the production in the fisheries sub-sector has remained relatively constant with production in aquaculture ranging from 3,000 MT in 1997 to approximately 5,995.44 MT in 2002. Total production in the marine capture fishery recorded a decline in 2003 partly as a result of decreased landing of finfish and partly as a result of prudent management, which dictated a decreased Total Allowable Catch for conch (see Table 1.2.1.2a). The continued decline in exports is also partly due to the sustainable management of the Queen Conch fishery whereby a progressively lower conch catch quota have been set in consecutive years since 1995 (Table 1.2.1.2b). Jamaica continues to be a net importer of fish and fish products importing some 60% of total demand annually.

Table 1.2.1.2a Fisheries Production (MT) in Jamaica (1997 – 2003)

	1997	1998	1999	2000	2001	2002	2003
Finfish	5578.75	4160.98	6283.74	4585.55	4348.57	7,000.00	4594.92
Conch	1821.20	1700.00	1366.00	0	946	946.00	504.25
Lobster	269.63	169.66	329.90	517.3	943.39	358.67	300.00
Shrimp	67.04	14.54	4.49	36.67	38.5	37.54	37.00
Others ¹	10.25	-	-	-	51.38	144.00	456.00
Tilapia ²	4,200.00	4,300.00	4,500.00	~4,500.00	~5,000.00	5851.44	2512.5
Total Marine Fish Production	7,746.87	6,045.18	7,984.13	5,139.52	6,327.84	8342.21	5436.17
Total Tilapia Production	4,200.00	4,300.00	4,500.00	4,500.00	5,000.00	5995.44	2968.50
TOTAL Fish Production	11,946.87	10,345.18	12,484.13	9,639.52	11,327.84	14,337.65	8404.67

Table 1.2.1.2b Export of Marine Fish Products (1997 – 2001)

	1997	1998	1999	2000	2001
Quantity (kg.)	3,180,477.00	2,536,716.00	1,936,580.00	840,459.00	956,013.00
Value (J\$)	547,309,847.00	538,817,649.00	572,603,213.00	427,254,801.00	437,912,645.00

¹ Includes shrimp produced by Mariculture.

² Produced by Aquaculture

TABLE 1.2.1.2C IMPORT OF FISH PRODUCTS

	1999
Quantity (kg)	30,350,457.00
VALUE (J\$)	2,191,342,690.00

In 2004 total capture fisheries production was estimated at 9,532.53MT. The breakdown is as follows:

Table 1.2d Marine Production

Type	Quantity (MT)
Finfish	8338.40
Shrimp	37.00
Lobster	567.13
Conch	590.00
Total	9,532.53

1.2.1.3 Marine Capture Fisheries: present status of fleet

The main vessel category (95%) consists of open canoes made of reinforced fibreglass plastic (FRP), powered by one or two outboard motors (25 to 75 HP, but mainly 40 HP). These boats range in size from 3.6 to 9 m. There are still some non-mechanized boats generally propelled by oars, made of wood or a mixture of wood and fibreglass. There are also decked vessels (5%), generally made of steel with lengths from 15 to 30 m. At the end of 2002 there were 4154 registered fishing boats.

Table 1.2.1.3 a Boat material and boat size

Material	Number	%	Length (m)	Number	%
Fiberglass	2697	70	1 – 3.9	111	28
Wood	860	22	4 – 8.9	3106	79
Fiber / wood	209	5	9 – 25	689	17
Steel Hull	56	1	>=26	7	0.2
Aluminium	11		Other	37	1
Other	41	1			
Total	3874	100	Total	3950	100

The fleet of “semi-industrial vessels” is used for fishing on the Pedro and Morant Banks and also for transporting fish and supplies from and to the Banks. For the seasonal conch fishery extra boats with crew are leased from other countries, mainly Honduras.

1.2.1.4 Fishing Areas and Access:

Under the present policy and legal regime, all fisheries are operated on an open-access basis except the industrial conch and lobster fishery and the artisanal fisheries on Pedro Bank. The capture fishery areas can be broadly divided into five main fishing areas:

- 1) The inshore fishery in the coastal waters of the main island, including nine proximal banks, usually subdivided into North Coast and South Coast. This area is severely overexploited.
- 2) The fishery on the Pedro and Morant Banks. These banks are exploited, perhaps at or near their estimated maximum sustainable yield as far as conch and lobster are concerned. The reef finfish resources are overexploited. Access is limited, but heavy poaching occurs.
- 3) Deep-sea fishing, in all deep waters around the island and banks. The deep waters are only lightly exploited and mainly with very primitive gear.
- 4) The Jamaica/Colombia Joint Regime Area near Alice Shoal. The extent of Jamaica’s fishing effort in this area is unknown at present.
- 5) Inland (riverine) areas, especially large river systems (e.g., Black River)

2. Institutional and legal Arrangements for the Development and Management of Fisheries, Aquatic and Other Coastal Resources.

2.1 The Maritime Zones of Jamaica

The 1982 United Nations Convention on the Law of the Sea (UNCLOS) was ratified by Jamaica on March 21, 1983. Subsequently, Jamaica has pursued a consistent policy of updating its laws to ensure full compliance with the provisions of UNCLOS.

The pieces of legislation relevant to the maritime zones and areas of Jamaica are the Maritime Areas Act 1996 and the Exclusive Economic Zone Act 1991.

2.1.1 The Maritime Areas Act 1996

The Maritime Areas Act 1996 replaced the Territorial Seas Act 1971. This Act confirms Jamaica's status as an archipelagic state by establishing archipelagic baselines as straight baselines joining the outermost points of the outermost islands and drying reefs of the archipelago of Jamaica. The Act also establishes a contiguous zone (in accordance with article 33 of UNCLOS) within which Jamaica has jurisdiction to take the necessary measures to prevent in Jamaica, the archipelagic waters or territorial sea, any contravention of any legislation relating to customs, excise, immigration or sanitation.

Under the Maritime Areas Act, Jamaica's continental shelf comprises (in accordance with article 76 of UNCLOS) those areas of the seabed and subsoil of the marine areas that are beyond and adjacent to the territorial sea throughout the natural prolongation of the land territory of Jamaica to the outer edge of the continental margin, or to a distance of two hundred nautical miles from the archipelagic baselines where the outer edge of the continental margin does not extend to that distance. However, no part of Jamaica's continental shelf extends beyond two hundred nautical miles from the baselines.

The Maritime Areas Act is an important piece of legislation that has significantly increased Jamaica's jurisdiction over maritime space. The Act has effectively reduced the potential area of the Exclusive Economic Zone³ and increased considerably the area covered by the archipelagic waters and the territorial sea. The total area of the archipelagic waters is 12,000 km².

2.1.2 The Exclusive Economic Zone Act 1991

The Exclusive Economic Zone Act 1991 established Jamaica's 200 nautical miles EEZ. The enactment of this piece of legislation establishes a maritime regime (about 274,000 km²) that is approximately 25 times the size of the landmass of mainland Jamaica. The Act confers on the Minister responsible (i.e., the Minister of Foreign Affairs and Foreign Trade) very broad powers to make regulations to give effect to the Act and regulate activities within the EEZ.

Under Section 6(1) of the EEZ Act, the exploration or exploitation of living resources within the EEZ is an offence except in accordance with a valid licence issued under the relevant scheduled

³ The potential area of the EEZ does not extend to 200 nm in any direction.

enactment. Licences authorizing the exploration for or the exploitation of living or non-living resources within the EEZ must be issued in accordance with the provisions of the relevant scheduled enactments and for this purpose, such scheduled enactments are extended to the EEZ as if the EEZ constituted part of the territorial sea of Jamaica. In addition, the penalties provided in the EEZ Act in relation to the exploration for and exploitation of living and nonliving resources without a licence shall have effect in lieu of any corresponding penalties in the relevant scheduled enactment (s.8(2)).

A total of fourteen Acts currently constitute scheduled enactments under the EEZ Act. Those relevant to fisheries are the Fishing Industry Act, the Wildlife Protection Act and the Beach Control Act. The application of their relevant provisions is modified as described above.

2.1.3 Maritime boundaries and Joint Regime Area with Colombia

In respect of the continental shelf, under the Maritime Areas Act 1997 and under the Exclusive Economic Zone Act 1991, maritime boundary delimitation between Jamaica and any opposite or adjacent State must be effected by agreement on the basis of international law in order to achieve an equitable solution⁴ (s.3(3)).

Jamaica has concluded delimitation agreements with Cuba in the north and Colombia in the south. Under the terms of the delimitation treaty with Colombia a Joint Regime Area (a joint management area) has been established. The Joint Regime Area is located to the southwest of Jamaica around the offshore banks of Bajo Nuevo, Seranilla and Alice Shoal (about 250 nautical miles from Kingston, Jamaica).

Jamaica was conducting maritime boundary delimitation talks with four other states, namely Honduras, Nicaragua, Haiti, and the United Kingdom in respect of the Cayman Islands.

2.2 THE LEGAL REGIME FOR FISHERIES

The main pieces of legislation presently governing fisheries activities in Jamaica are the Fishing Industry Act 1975, the Fishing Industry Regulations 1976 and the Morant and Pedro Cays Act 1907, administered by the Fisheries Division of the Ministry of Agriculture, and the Aquaculture, Inland, Marine Products and By Products (inspection, licensing and export) Act 1999 administered by the Veterinary Division.

Several other statutes contain provisions relevant to fisheries. These are the Exclusive Economic Zone Act 1991, Maritime Areas Act 1996, Natural Resources Conservation Authority Act 1991, Beach Control Act 1956, and the Wildlife Protection Act 1945.

2.2.1 The Fishing Industry Act 1975

The Fishing Industry Act 1975 is still the main piece of legislation that provides for the regulation of the fishing industry in Jamaica. Under s.3 of the Act, no person shall engage in

⁴ This is regarded as more advantageous to Jamaica than the principle of equidistance.

fishing in Jamaica or, if a citizen of Jamaica, in such areas outside Jamaica as may be prescribed, using any of the fishing methods described in the schedule, unless that person is the holder of a valid licence to fish. A Licensing Authority, in practice the Director of Fisheries, is empowered by the Act to issue licences, and is required to keep a register of all licences issued.

Under Section 23A of the Fishing Industry Act, any licence granted under s.5 or s.11 in relation to the EEZ is subject to the provisions of the EEZ Act or any order made under s.11 of that Act.

The Fishing Industry Act 1975, in addition to the system of registration and licensing, provides for the conservation and management of the fisheries resources.

The Fishing Industry Regulations 1976 contain further measures aimed at conservation. Regulation 14 prohibits the taking of berried female lobsters and any lobster of less than 76 mm carapace length; prohibits the use of any fry net or shove net of a length exceeding 12 feet (4 m); and prescribes minimum mesh sizes for beach seine nets.

2.2.2 The Aquaculture, Inland, Marine Products and By Products (Inspection, Licensing and Export) Act 1999

The Aquaculture, Inland, Marine Products and By Products (Inspection, Licensing and Export) Act 1999 is the law governing the production, storage and transport of fishery products and marine gastropods. With the signing of this Act, the old Animal Disease and Importation Law and Regulation 1948 has been re-enforced.

The Minister of Agriculture has made Regulations under the Aquaculture, Inland, Marine Products and By Products (inspection, licensing and export) Act 1999. This Act and the Regulations have become very important instruments in the regulation of the conch and lobster fisheries for export. The Veterinary Division of the Ministry of Agriculture administers this Act and its Regulations. The fees for inspections are considerably higher at the moment than the fines and fees charged under the Fisheries Act 1975.

2.2.3 Beach Control Act 1956

The Beach Control Act 1956 is administered by the National Environment and Planning Agency (NEPA) and regulates the use of the foreshore for specified purposes. Under the Act, all rights in and over the foreshore are vested in the Crown. However, under s.11 of the Act the Authority is empowered to grant licences for the use of the foreshore for any public purpose (such as recreational bathing) or in connection with business or trade including fishing.

Under Section 12 of the Act, NEPA is required to determine the needs and requirements of the public in relation to the use of the foreshore and land adjoining the foreshore for the purpose, *inter alia*, of fishing as a trade and, where necessary, may acquire land or rights of use over such lands.

2.2.4 Wildlife Protection Act 1945

Other statutes contain provisions relevant to fisheries conservation and management. The Wildlife Protection Act 1945 and the Natural Resources Conservation Authority Act 1991 are the most important examples.

Under Section 9 of the Wildlife Protection Act it is an offence to take, kill or attempt to kill or knowingly buy, sell, expose for sale or have in one's possession any immature fish. Immature fish is defined as a fish smaller than the size prescribed by any regulations made pursuant to the Act. This provision effectively functions to define legal minimum size limits of fish exploited.

The Act also prohibits the use of poisons or other noxious materials, dynamite and explosives to harvest fish. Such provisions, more commonly found (and perhaps more appropriately) in basic fishery law rather than in a statute aimed at conservation, do not exist in the Fisheries Industry Act 1975.

2.2.5 The Natural Resources Conservation Authority Act 1991

The Natural Resources Conservation Authority Act 1991 is another important piece of legislation with regard to fisheries conservation and management. Under the Act, broad powers are conferred upon the Minister to make regulations to enhance the implementation of the provisions of the Act.

The NRCA Act, empowers the NEPA, with approval of the Minister to make regulations to control the taking of fish or any specified species of fish, control the methods or traps which may be employed in taking any fish and make provision for the stocking of any water with fish and for the establishment and control of fish sanctuaries and hatcheries.

2.3 MANAGEMENT, DEVELOPMENT AND REGULATION OF FISHERIES

The primary agency with the responsibility for the management, development and regulation of fisheries and aquaculture is the Fisheries Division, Ministry of Agriculture. The main policy instrument guiding the development and management of the capture fishery is the Fishing Industry Act, 1975 and the Fishing Industry Regulations, 1976 and the Morant and Pedro Cays Act, 1907. There is no existing legal frame work for the management and development of aquaculture. However, the establishment of a new comprehensive Fisheries Act is in a very advanced state, and this should be enacted by early 2006. The new Fisheries Act provides for the employment of appropriate capture and culture fisheries management and development strategies.

The enforcement of Jamaican fisheries and related laws and regulations is effected by four principal agencies:

- Jamaica's Coast Guard, part of Jamaica's Defence Force (JDF);

- Marine Police, part of the Jamaica Constabulary Force (JCF);
- Fisheries Division; and
- Game Wardens attached to the National Environment and Protection Agency (NEPA).

The Coast Guard has primary responsibility for monitoring, control and surveillance activities in the offshore areas and EEZ. In 1996, the Coastguard established a station on the Pedro Bank (Middle Cay) that has facilitated more frequent and sustained enforcement patrol of the Bank.

The Marine Police is a separate branch of the Jamaica Constabulary Force (JCF) with special responsibility for the enforcement of laws relating to fisheries, harbours, shipping and drugs. With respect to the enforcement of fisheries laws, the Marine Police largely operates within the inshore areas (immediate environs of the ports and harbours).

The Fisheries Division's Fishery Inspectors and NEPA's Game Wardens are duly appointed under the relevant Acts administered by the specific agencies. As a matter of policy, these enforcement officers do not operate without the assistance of either Marine Police and/or Coast Guard personnel. Such cooperative enforcement activities are arranged on an *ad hoc* basis for specific purposes (e.g., during the closed season for lobsters or conch).

2.4 Administrative Arrangements for Planning, Development and Conservation of the Coastal Environment and the Protection of Aquatic Resources

The agency with the overall responsibility for the conservation of the coastal environment and aquatic resources and the planning and development in coastal regions is the National Environment and Planning Agency (NEPA). NEPA is a merger of the Natural Resources Conservation Authority (NRCA), the Town Planning Department (TPD) and the Land Development and Utilization Commission (LDCUC) which took effect on April 1, 2001. There is currently no comprehensive legislation incorporating the mandates of the abovementioned agencies. Consequently, though the "physical" merger is in effect, legally the NRCA with its board is still operational and administering the Natural Resources Conservation Authority Act. Similarly, the Town and Country Planning Authority (TCPA) still exist and administer the Town and Country Planning Act. The NRCA has overall responsibility for environmental management while the TCPA is responsible for physical planning and development.

2.4.1 Regional Planning and Development

All development must conform to the relevant Development Order that dictates the type and scale of development that can occur within a given geographical space. Both the NRCA and TCPA under NEPA consider all development plans and where appropriate collectively approve the plan ensuring a synthesis of proper physical planning and development and sound environmental management. The process also involves at the local level, the relevant Parish

Council and affiliate organizations (e.g., Fisheries Division, Ministry of Health, and National Water Commission) that have the responsibility to implement and monitor the process in conjunction with NEPA.

Depending on the scale of the development, the local Parish Council may authorize small scale development (such as a dwelling house) under the condition that the development must conform to the specific Development Order for the Parish and the regulatory requirements and standards set by the various affiliate Government agencies.

2.4.2 Conservation and Rehabilitation of Coastal Environment and Aquatic Resources

Three (3) branches of the Integrated Planning and Environment Division (IPED) and two (2) from the Legal, Standards and Enforcement Division (LSED) of NEPA have general oversight of the natural environment and resources of Jamaica. These are:

- (a) The Integrated Water and Coastal Zone Management Branch, (IPED) - Responsible for maintaining an understanding of the spatial distribution and status of the Natural (living and non-living) resources with the watersheds and coastal zone areas of Jamaica.
- (b) The Protected Areas Branch, (IPED) – Responsible for the preservation of the natural environment through a system of protected areas
- (c) Biodiversity Branch, (IPED) – Responsible for the maintenance of biodiversity and the protection of all species listed under the Wildlife Protection Act, The Endangered Species Act and also those on the various CITES Appendices.
- (d) Enforcement Branch, (LSED) – Responsible for the enforcement of all legislation relevant to coastal environment and aquatic resources.
- (e) Legal Services Branch, (LSED) – Responsible for the prosecution of persons contravening the relevant regulations, provide legal advice in environmental and natural resource issues.

NEPA works in very close co-operation with various affiliate agencies with specific jurisdiction and legal mandate such as the Fisheries Division and the Forestry Department in respect of matters related to fisheries and forestry respectively.

2.5 Co-management of Fisheries

Co-management is regarded as an approach to management whereby all stakeholders participate in the planning, execution and enforcement of the regulations and strategy for the proper management and development of a given natural resource. A critical element of co-management is the development of a formalized, legally binding partnership arrangement between government and resource user groups.

2.5.1 Some Examples of Fisheries Co-management Efforts

Jamaica's effort at achieving co-management of fisheries has been at best sluggish and limited, and, especially with respect to the integration of fisheries and coastal aquaculture into ocean and coastal area management and development, restricted to in most if not all cases to the so called "consultation with stakeholders" which in actuality is just providing information to stakeholders who are powerless to effect any significant changes to the given management or development plan.

There have been several attempts at achieving some level of co-management of fisheries, with the more important examples being:

- (a) The management and development of the Jamaica's conch industry,
- (b) The establishment of the Portland Bight Fisheries Management Council (PBFMC),
- (c) The Fisheries Division / CARICOM Fisheries Resource Assessment and Management Project (CFRAMP): Community Involvement and Education Sub-Project.
- (d) The FAO / Government of Jamaica: "Development of Policy Framework and Strategic Plan for Sustainable Fisheries Development in Jamaica."

2.5.2 The Management and Development of Jamaica's Conch Industry

One of the earliest attempts at the co-management of fisheries started in the early 1990s out of concern for the economic viability of the commercially important queen conch fishery. This took the form of progressively extensive consultation with all the primary stakeholders until the process culminated in a system which required unanimous agreement before any decision could be taken. However, the process stopped short at facilitating the integral incorporation of the primary stakeholders into the decision making process, but did not further empower the stakeholders to implement and administer the management strategies in partnership with the relevant Government agencies.

The process was very interesting as it followed a natural progression of development without any written policy directions, or legal framework. The critical ingredient was the political will, with the then Minister of State with responsibility for fisheries showing a very keen interest and being willing to accept and act upon the recommendations of the Fisheries Division.

The current level of co-management was developed from a series of discussions with all the primary stakeholders in order to:

1. Determine the status, structure and organization of the conch fishery;
2. Share other countries experiences in marine resource management;

3. Introduce relevant management options; and
4. Gain consensus on the management actions required to safeguard the conch resource and by extension the livelihood of all who depended on it.

This earlier consultative process was used to define the general overarching framework of the first management plan for the Jamaica conch fishery in 1993. The process was further strengthened such that every decision related to the management and development of the conch industry was meticulously discussed with all stakeholders, and moreover any and all final decisions had to be unanimously agreed upon. This approach achieved significant results whereby within the absence of a legal frame work and based only on a “gentleman’s agreement” conch industry members agreed to implement all the necessary strategies to ensure the sustainable exploitation of the conch resource. Some of these strategies included the establishment of a quota management system for conch, the voluntary reduction of fishing effort, the implementation of minimum size limits and an annual closed season for conch, the provision of catch and effort data and the funding of conch abundance surveys to determine the status of the Jamaica conch population.

The Jamaica conch fishery management plan and strategy has been widely recognized by all conch producing countries and the Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES) Secretariat as one of the most successful and comprehensive conch management and development initiatives. This endorsement was further enhanced when CITES after a thorough analysis of the status of the global queen conch resource, in effect endorsed and adopted the management approach of Jamaica and has mandated all other conch producing countries to implement similar management programmes.

Two very critical weaknesses can be identified in the conch fishery co-management process. Firstly, the protracted time period in enshrining the major elements of the conch management plan especially those related to the equitable distribution of the resource (i.e., how the conch quota was divided) into law in order to safeguard the process from political interference. Secondly, the seeming lack of interest and inability of the Government to control the poaching of conch by foreign nationals has caused further problems. The wide spread poaching has greatly undermined the management efforts and moreover the sacrifice of the conch industry players.

Though accepted by industry members as being difficult and very expensive, nevertheless the negative perception by industry members of the Government’s failure to stamp out poaching by foreigners and also the failure to enact legislation with penalties and fines that would act as a deterrent to the poachers greatly affected the original “gentleman’s agreement” and has resulted in the loss of confidence in the process.

The conch fishery co-management initiative clearly shows that:

- (a) It is essential to ensure adequate, acceptable compliance with the agreed-upon strategies.
- (b) One non-negotiable principle held sacred by stakeholders, that must be an integral unequivocal part of any resource management initiative is the guarantee of a “level

playing field.” All rules and regulations must be equally applied to all stakeholders without exception.

2.5.3 The Portland Bight Fisheries Management Council (PBFMC)

The environmental NGO “Caribbean Coastal Area Management (CCAM) Foundation” was delegated the management responsibility for the Portland Bight Protected Area (PBPA) by the Natural Resources Conservation Authority (NRCA) of the National Environment and Planning Agency (NEPA) in July 2003. The CCAM’s major thrust is the co-management of the natural resources of the PBPA through “resource management councils.” One such council is the PBFMC. This fisheries resource management council was established on June 29, 1995 (International Fisherman’s Day) and currently has 32 members representing the following 20 organizations:

- (i) Half-Moon Bay Fishermen’s Co-op Society, Hellshire
- (ii) Old Harbour Bay Fishermen’s Co-op Society
- (iii) Old Harbour Bay Fisher’s Association
- (iv) Rocky Point Fishermen’s Co-op Society
- (v) Rocky Point Fisher’s Association
- (vi) Barmouth Fisher’s Association
- (vii) Welcome Fisher’s Association
- (viii) Mitchell Town Fisher’s Association
- (ix) Jamaica Fishermen’s Co-op Ltd.
- (x) Monymusk Gun, Rod and Tiller Club
- (xi) PWD Gun Club
- (xii) National Environment and Protection Agency (NEPA)
- (xiii) Fisheries Division, Ministry of Agriculture
- (xiv) Port Authority of Jamaica
- (xv) Urban development Corporation
- (xvi) Jamaica Constabulary Force, St. Catherine (Old Harbour Bay)
- (xvii) Jamaica Constabulary Force, St. Catherine (Greater Portmore)
- (xviii) Jamaica Constabulary Force, Clarendon
- (xix) JDF, Coast Guard
- (xx) Caribbean Coastal Area Management Foundation (CCAM)

The PBFMC has the distinction of meeting every month since its establishment. The Council has through its regular meetings and participation in other fora informed itself of issues directly and indirectly related to fisheries management and development. They have considered and agreed upon the options and strategies for the management and development of the fisheries resources within the PBPA. One important output of this process has been the draft fishery regulations for the PBPA.

Although the CCAM co-management initiative is over 10 years old, and despite the delegation of management to it by the NEPA, the co-management process has not been able to mature and move beyond the stakeholder consultative process largely due the inability of CCAM to officially assume its legal mandate of managing the natural resources of the PBPA. None of the

PBPA regulations has been enacted so far, a fact that has also greatly affected the organization in its drive to secure funding for its activities.

2.5.4 The Fisheries Division / CARICOM Fisheries Resource Assessment and Management Project (CFRAMP): Community Involvement and Education Sub-Project.

The project began in April 1996 as part of a regional effort by CFRAMP to further enhance the participation of fishers and other stakeholders in fisheries co-management. The objective of the project was to organize and empower fisher groups to actively participate in co-management. Specific activities included a public education component that informed fishers of relevant fisheries legislation as well as good fisheries management practices. Other activities included the training of select fishers and staff of the Fisheries Division in group formation and extension principles. It was anticipated that the persons trained would train others and also facilitate the formation of fisher groups in their respective communities. The further empowerment of the fishers would rely on the passing of new enabling legislation and the ability of the fisher groups to seek and obtain funding.

The major constraints of the project were the inadequate capacity of the Fisheries Division to provide the necessary human and financial resources to support the project. All the field officers that participated in the project had other duties that detracted significantly from the time available to conduct activities under the co-management project. Without the support of the Fisheries Division most of the fisher groups seemed not to have the momentum to continue.

However, notwithstanding the problems, fishers within the Kingston Harbour rim (an area where focused attention was provided by the Fisheries Division) have shown an increased awareness of the need to organize and realized some self-empowerment in addressing the numerous issues that affect them. For example, issues such as the impact of the dredging of the Kingston Harbour on their ability to fish within the harbour.

Although project support from CFRAMP has ended, the Fisheries Division continues to support the activities as a long term programme. However progress will continue to be impeded if the Division does not develop the capacity to provide the necessary support to fishers and fisher groups. Also required are the necessary enabling policies and legislation that will empower fishers to truly participate in co-management.

2.5.5 The FAO / Government of Jamaica: “Development of Policy Framework and Strategic Plan for Sustainable Fisheries Development in Jamaica.”

Under this project the FAO provided technical assistance to the Fisheries Division of the Ministry of Agriculture, to develop for the very first time a national fisheries policy framework and strategic plan. The project was formally agreed on in October 2002 and was projected to end in December 2004. However, components of the project are still outstanding and will not be completed until July 2005. It is expected that the policy and plan will provide guidelines and

activities that will mitigate the decline in the capture fisheries, and improve the economic, social and environmental state of both the capture and culture sub-sectors.

The originally anticipated outputs also included the provision of new and revised drafting instructions to enhance the current draft Fisheries Bill. The new Fisheries Act will provide the enabling instruments to facilitate the formation of a National Fisheries Advisory Council and the formalizing of community-based fisheries management groups. The new legislation would also provide the legal framework to encourage fisheries co-management.

The model used by the Fisheries Division in developing the policy and strategic plan was one of stakeholder consultation and participation in the development process. To this end the Fisheries Division embarked on a series of consultative meetings with stakeholders throughout Jamaica that began on August 18th, 2003 and continued into November 2003. Stakeholders included capture fishers, the aquaculture industry and Government agencies which have complementary and or convergent mandates in Jamaica. These consultations were the most comprehensive and extensive ever completed for the fisheries sector. In all over 2,000 stakeholders participated in the meetings.

The results of the stakeholder consultations formed the basis for the drafting of the national fisheries policy document. This draft was then presented, discussed and further refined by the stakeholders at two regional meetings, the first in Montego Bay in March 2004 and the second in Kingston in April 2004. The meetings were very well attended and were exceptionally large with over 400 stakeholders attending both meetings. The draft policy and other specific consultations were used to guide the direction of the new fisheries legislation. Final reports on both the policy and strategic plan and on the legislation will be available by July 2005.

The reports from this project will provide a sound basis for the repositioning / or restructuring of fisheries co-management in Jamaica. Necessary next steps include the development, funding and implementation of projects and action oriented activities based on the policy and strategic plan.

2.6 Other NGO Activities in Fisheries Co-Management

A few other NGO's continue to work in fishing communities with fisheries co-management as an objective. These include the Montego Bay Marine Park, The Negril Coral Reef Preservation Society, The Negril Environment Protection Trust, and The Discovery Bay Marine Lab of the University of the West Indies. The success of the efforts of each of these organisations, although ongoing, does vary from poor to moderate and are not well documented.

3. Consideration of socio-economic and demographic concerns

3.1 Socio-economic and Demographic Information on Coastal Fishing Communities.

The availability of social, economic and demographic information on fishing communities is patchy and disjointed simply because no focus is actually placed on a "fishing community" per

se. Some social, economic and broad demographic information are captured during the Fisheries Division's fisher registration process. However, for the most part detail information has to be disaggregated from more general population data. The main agencies responsible for the collection, analysis, interpretation and publication of social, economic and demographic data are the Planning Institute of Jamaica (PIOJ) and the Statistical Institute of Jamaica (STATIN). Below is a summary list of the some studies and reports that are published or unpublished and the organization that produces them.

- Fisheries Division. 1998b. Census on the fishing industry 1998. Min. of Agriculture & STATIN: 42pp
- NATIONAL INCOME AND PRODUCT 2003: Statistical Institute of Jamaica (STATIN)
- DEMOGRAPHIC STATISTICS 2003: Statistical Institute of Jamaica (STATIN)
- EMPLOYMENT, EARNINGS AND HOURS WORKED IN LARGE ESTABLISHMENTS 2000– 2002: Statistical Institute of Jamaica (STATIN)
- CENSUS OF AGRICULTURE 1996: Statistical Institute of Jamaica (STATIN)
- Environment Statistics 2003 and Mineral Accounts: Statistical Institute of Jamaica (STATIN)
- Households and the Environment 2002: Statistical Institute of Jamaica (STATIN)
- STATISTICAL REVIEW – QUARTERLY: Statistical Institute of Jamaica (STATIN)
- Economic and Social Survey Jamaica 2004: Planning Institute of Jamaica (PIOJ)
- Jamaica Survey of Living Conditions 2002: Planning institute of Jamaica (PIOJ)
- The South Coast Sustainable Development Study (SCSDS): Sir William Halcrow and Partners Ltd.
- Licensing and Registration Data: Fisheries Division, Ministry of Agriculture.

3.2 Use of socio-economic and demographic indicators in the preparation of coastal area profiles and management/development plans

The Caribbean Coastal Area Management Foundation (C-CAM) was formally incorporated in 1998 and is dedicated to the management and sustainable use of the natural resources of the Portland Bight Protected Area. C-CAM is by far the most developed NGO and has been active in organizing local communities and resource users (for instance, the Portland Bight Fisheries Management Council) into stakeholder groups with a view of their incorporation into processes of co-management of forests and fisheries resources and development of sustainable economic activities throughout Portland Bight, including tourism and sustainable industrial development.

Portland Bight was selected as one of three demonstration sites for the GEF/UNEP/OAS project entitled *Inter-American Strategy for Public Participation in Decision-Making for Sustainable Development*. With GEF funds, C-CAM established a stakeholder process involving central and local government agencies, thirty local communities, and other NGOs. On July 18 of 2003, The Natural Resources Conservation Authority (NRCA) and C-CAM signed an *Instrument of Delegation* under which C-CAM will be responsible for the overall management of specified areas of the Portland Bight Protected Area, including such activities as: inventories and monitoring, development of trails and attractions, infrastructure development, entrance fees, wildlife and wildlands protection (coastal, marine and terrestrial), and patrol and enforcement.

In order to be awarded the Instrument of Delegation for the management of the Portland Bight Protected Area, CCAM was required to submit detailed comprehensive management and development plans for the PBPA. This process was greatly enhanced in early 1998 with grant funds from UNESCO which was used by CCAM to conduct a census to map some 15 communities in the Portland Bight Protected Area. The work involved a house to house census of the coastal communities where detail social and demographic data was collected. The data collected was utilized to fine tune existing data on the communities in PBPA, refine the profile on the protected area and assisted in the development of the comprehensive PBPA's management and development plan entitled: the Portland Bight Sustainable Development Area, Management Plan: 1998-2003.

The specific management plans include those for fisheries, wetlands, forestry, marine turtles, coral reefs, the near shore Cays in the bay, seagrass beds, the Jamaican iguana, Goat Island, crocodiles, avifauna, manatees, caves and even cultural aspects. Most significantly, it sets out a plan for the incorporation of the stakeholders of the area in its co-management. It sets out the way in which the Portland Bight Sustainable Development Area (PBSDA) will be organized and operated. It also expresses the need for the formation of a fisheries management council which would have representatives from the user community, as well as the public sector. Many useful maps are also provided in this publication.

3.3 Coastal Area Management and Conservation Project for Improving the Socio-economic well-being of coastal fishers and their families.

Since 2002 the Government of Jamaica, spear-headed by the Tourism Product Development Company (TPDco.) in conjunction with various stakeholders including other government agencies (e.g., Fisheries Division) and NGOs (e.g., Caribbean Coastal Area Management Foundation (CCAM)) have been preparing a project, the Jamaica South Coast Sustainable Development Project. This very broad project has a Sustainable Fisheries Management Component with activities geared towards fisheries and coastal area management and conservation programmes, and is aimed at improving the socio-economic well-being of coastal fishers and their families.

The Project will assist in addressing the problems of declining socio-economic viability of fisheries on the Jamaican south shelf by utilising mechanisms to facilitate sustainable fishing practices and production along the south coast. To achieve the goal of improving the management of the fisheries resources on the south coast for sustainable social and economic benefits, the project will strengthen the institutional capacity of the Fisheries Division while empowering fisher folk organizations on the South Coast to actively participate in fisheries resource management. This will be achieved by pursuing three component objectives, which are: the Development and implementation of fisheries co-management strategies; and Effective Monitoring Compliance and Regulatory Control and Fisheries Resource Monitoring.

The activities under this Project will include training of fisherfolk in organizational development and principles of fisheries management, while working with communities to develop resource

management maps/plans. The Project will also work along with other stakeholder groups and agencies in the project area.

Additionally, the Project will conduct a six month intensive compliance monitoring approach across several key fishing communities in the project spectrum. Compliance and monitoring operations will continue after the initial intense approach but less intensively, and will be extended to the entire south coast. This activity will by necessity follow from the fisher organizational work of the first component, resulting in the stakeholders themselves welcoming and participating in the enforcement activity (co-management process).

The major constraint to the execution of this Project is the unavailability of government counterpart funding to begin it. The Project if implemented will go a very far way in furthering the development of fisheries co-management

4. Conclusion and Recommendation

In Jamaica socio-economic and demographic data is traditionally used only as a measurement of the socio-economic status of the Jamaican population in general. Coastal fishers, their families and other segments of the coastal population, are not specifically targeted for socio-economic and demographic information unless there is a specific project or programme requiring such data.

Unfortunately, these important indicators are very rarely if at all used to monitor the impact of development and management regulations. However, the use of social, economic and demographic information in the development planning process is gaining widespread acceptance, but such critical information pertaining to fishers and their communities are often overlooked in furtherance of the development of the more powerful economic sectors (e.g., tourism).

There is a critical need to meaningfully incorporate into the planning and development process social, economic and demographic information of all the stakeholders that may potentially be impacted by a given development.

It is also extremely unfortunate that natural resources management interventions are not routinely monitored and assessed in a comprehensive manner. At times some cursory assessment may be effected which is usually a requirement of a specific externally funded project.

Notwithstanding the very best of intentions of our natural resource managers there are several significant constraints that impede the total “cycle” of data collection, data management, analysis, interpretation, dissemination and discussion of results; adjustment of the relevant development or management plan and implementation. Among the constraints are:

- (a) Lack of funding
- (b) Inadequate capacity within the relevant agencies
- (c) Lack of legal mandate
- (d) Little or no capacity among primary stakeholder groups.

The interventions necessary to ensure the routine collection and use of social, economic and demographic data into the management process of coastal and aquatic resources include inter alia:

- (a) The development of a legal framework mandating the relevant agencies to incorporate social, economic and demographic considerations into the planning and developmental process. This may be achieved by the amendment of existing legislation. Critical to this, must be the empowerment of the stakeholders through appropriate legislation, within clearly defined boundaries, to stall and/or totally stop certain developments or initiatives that will negatively impact them.
- (b) An important, if not the most important, intervention is the building of the capacity of the stakeholder groups especially those within the so called “politically weak” sectors such as the fisheries sector. It is only an empowered stakeholder group with the required capacity that will be able to take full advantage of their new legal power and to match ‘head on’ powerful interest in both the private and public sector.

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