



CRFM Secretariat



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

## **Dominica Case Study**

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**Case study on consideration of socio-economic and demographic concerns in fisheries and coastal area management and planning in Dominica**

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## ***1.0 General Country Information***

The Commonwealth of Dominica is an island located 15° 30' North Latitude and 61° 25' West Longitude in the Eastern Caribbean and is the most northerly and largest island comprising the sub-regional Windward Islands grouping.

It is situated between the two French speaking islands of Martinique and Guadeloupe. Located in the middle of the Lesser Antilles, the island has a landmass of 750.6 Km<sup>2</sup> (290 sq. miles).

The climate of Dominica is classified as humid tropical marine, with temperatures of about 27°C (80°F) almost year round, with a slight drop during the months of December to February. The island is mountainous and experiences very high rainfall with an average of 4,445 mm of rain annually. About 65% of the land area is covered by vegetation ranging from scrub woodland on the west coast to rainforest in the interior. Dominica has demarcated its maritime boundaries and has established 200 nm exclusive economic zone, 24 nm contiguous zone and 12 nm territorial sea.

Dominica lies in the path of tropical storms and hurricanes that are a regular climatic feature of the wider Caribbean region.

### ***1.1 Population***

The 2001 national census estimates the population of the island to be about 71,727 recording a decrease of 69 over 1991 (Demographic Statistics, 2002), with an annual growth rate of 0.01% over 1991 (Population and Housing Census, 2001) and a population density of about 95 persons per square kilometre making it the least densely populated of the Windward Islands. The people of Dominica are mainly of African origin with some mixed ethnic groups resulting from its colonial past from Britain and France. Dominica is also home to the indigenous Carib Indians, the only island in the Caribbean where they were able to survive the ravages of the colonial powers that shaped the history of this island.

The largest age grouping, 15-64 years, comprises 64% of the population with males and females being almost equal in numbers. The 0-14 years and 65 years and over age categories comprised 27.8% and 7.9% respectively with females exceeding males by about 1000 individuals.

The people of Dominica are bilingual, speaking a French Creole with the formal language being English. The literacy level is estimated at 94%, birth rate 16.8 in 2000, infant mortality rate is 13, unemployment exceeds 26% (ECCB estimate, 2003) and about 65% of the population lives in coastal communities. Urban and rural population are 30.2% and 69.8% respectively.

## ***1.2 Economy***

There has been severe decline in the performance of the economy in the last five years. From 1997 to 2000 the average economic growth was 0.37%. (IDP, 2003). In 2002 Dominica recorded EC\$685.18m GDP which represented a decline of 4.67% (ECCB Estimate, 2003). Agriculture that was the main generator of economic growth through the export of bananas and employed in excess of 8,000 farmers, has experienced decline in performance due to the effects or impacts of trade liberalization. Its contribution to Gross Domestic Product (GDP) decreased from 38% in 1997 to 1.79% in 2001. Total domestic exports registered a drop of 19.4% .

The fisheries sector contributed 1.87% to GDP in 2002. There were 1592 registered fishers and 796 fishing boats as at 27<sup>th</sup> July 2004. Of all registered fishers 40% (636) were full time and 60% (956) were part time operators.

Types of exports included bananas, citrus, coconuts, cocoa, soap, beverages, herbal oils and extracts. Exports were estimated at EC\$115.4m in 2002 (ECCB Estimate 2003). Major markets were the European Union (EU), CARICOM, U.S. (16%). Imports into Dominica was estimated at EC\$333.55m (ECCB Estimates, 2003) and included machinery and equipment, foodstuffs, canned and salted fish, manufactured articles, and cement. Major suppliers were OECS, CARICOM, U.S., Canada, the European Union and Japan.

### ***1.3 Political, legal and administrative Structure***

Dominica has a Westminster-style parliamentary democratic government. The island gained independence from England in 1978 and established a constitution. There are three political parties: The Dominica Labour Party (the majority party), the Dominica United Workers Party, and the Dominica Freedom Party. The President is nominated by the Prime Minister and elected for a 5-year term. The President appoints the leader of the majority party as Prime Minister and also appoints, on the Prime Minister's recommendation, members of the parliament from the ruling party as cabinet ministers. The Speaker of the House of Assembly is appointed by the Prime Minister.

The House of Assembly is composed of 21 regional Representatives and nine Senators. Elections for Representatives and Senators must be held at least every 5 years.

Dominica's legal system is based on English Common Law. There are three Magistrate's Courts, with appeals made to the Eastern Caribbean court of appeal and, ultimately, to the Privy Council in London.

The island is also divided into 10 parishes, whose governance is administered by local government or village councils. Urban and City Councils govern towns and urban communities. Supported largely by property taxation and matching funds from central government the councils are responsible for the administration and regulation of local village activities, sanitation and the maintenance of secondary roads and other public amenities.



## ***2.0 Institutional and legal arrangements for the management, development and conservation of fisheries, aquatic and other coastal resources***

There exists some degree of institutional arrangements for the management, development and conservation of fisheries and other coastal resources in Dominica. They include mainly government institutions, fishermen's organizations, community groups and non government organizations to a lesser extent. The table 2.0 below indicates areas of jurisdiction and the roles played by various government institutions in the management of fisheries and coastal resources on the island.

Based on the information given it was observed that areas of overlapping jurisdiction and conflict existed among government institutions and between those institutions and the fisheries sector. For example, the Bureau of Standards indicated that there was confusion, with problems and difficulties regarding three different government agencies setting standards for fish and fish products (same product) namely; The Fisheries Division, The Environmental Health Department and the Bureau of Standards.

Information from the Forestry and Wildlife Division indicated that areas of confusion, coupled with lack of collaboration and co-operation made its work more difficult and had a negative impact on the fisheries sector. For example, the Fisheries Division has jurisdiction over the conservation and management of the biological resources of beaches in Dominica including turtles but not over the substratum or the sand. Fisheries Legislation enacted by the Government of Dominica (1987) gives the Fisheries Division enforcement powers for the protection of undersized and nesting turtles and their eggs as well as protection of the animals at sea.

The Division of Forestry and Wildlife which is also a department within the Ministry of Agriculture has control over terrestrial matters up to the beach and they too are also responsible for enforcement for the protection of turtles on the beach but not in the sea. There has been some collaboration between those two institutions in recent times regarding the protection of nesting turtles.

The Ministry of Communication and Works (MCW) is responsible for permit letting for sand mining on the beaches of Dominica (Table 2.0). This agency grants permission to the public for the removal of sand and stones from the beach. The MCW has no interest in nesting turtles or beach erosion and such activities have detrimental consequences for fisheries and the coastal environment.

**Table 2.0** Government Institutions Responsible for Management, Development and Conservation of Fisheries and Coastal Resources

<b>Agency</b>	<b>Responsibility in Relation to Marine Resources</b>
Environmental Health Dept.	Pollution control and water quality monitoring
Office of the Prime Minister	Dominica Coast Guard - Enforcement of maritime and marine environmental law, search and rescue.
Ministry of Legal Affairs Immigration and Labour	Formulation of legislation for the protection of coastal and marine resources as well as provide legal advice.
Ministry of Finance Industry & Planning Division Maritime Administration	Planning for coastal developments and the execution of environmental impact assessments (EIA) Administration of maritime affairs and ship registry including foreign fishing vessels.
Ministry of Communications and Works	Responsible for sand mining and removal of stones from shoreline and permit letting, road construction and sea defence works etc.
Ministry of Agriculture (Fisheries Division)	Responsible for sustainable use of marine and coastal resources including turtles and marine mammals.
Forestry Division	Responsible for wild life including turtles, marine birds and river systems.
Environmental Coordinating Unit	Coordination of environmental activities and International Environmental Conventions and treaties.

**Source: Fisheries Division, Dominica, (2001)**

There is a lack of coordination between the department of fisheries and the Ministry of Communications and Works and this lends itself to disorganized development in the coastal zone with dire consequences for coastal and fisheries management.

The Division of Physical Planning is the agency responsible for granting permission for the erection and establishment of physical structures within the coastal zone. Definite linkages have been identified between this institution and other government institutions in the above table however; they are not used for fostering organized development and management of fisheries and coastal resources.

Water quality monitoring is done in the laboratories of the Environmental Health Department. Fish inspection and reef monitoring is done by the Fisheries Division.

The Maritime Administration is another institution responsible for registration of foreign fishing vessels and is totally independent of the Fisheries Division. The marine police are responsible for general marine law enforcement including rescue of fishers at sea.

The failure to make the necessary linkages at the government institutional level results in a disorganized management system which lends itself to poor management, habitat degradation and user conflicts in the coastal zone.

### **Fishers Organizations**

Fishers organizations play a small role in the management, development and conservation of the fisheries and coastal resources. There are eight registered fishermen's co-operatives within the industry, of which five are functional. The Co-operatives are mainly service oriented. These organizations are the medium by which the Fisheries Division disseminates information on fisheries development and conservation to fishers within the industry. Management measures have mainly been imposed on these institutions in the past with the hope of fostering compliance.

However, there is a need for greater participation and involvement of these organizations in actual planning, development and management of fisheries and coastal resources.

## **Legal Arrangements**

There exists an incomplete legal framework for the management of fisheries and coastal resources in Dominica. The Fisheries Act of 1987, the territorial sea, contiguous zone and Exclusive Economic Zone legislation has been enacted. The regulations for the establishment of the Soufriere / Scotts Head Marine Reserve in the south of the island have also been enacted. However, the fisheries regulations which gives effect to the act is not yet enacted and this poses a major impediment to fisheries and coastal management in Dominica.

The Forestry Division has a different set of legislation from that of the Fisheries Division. There are also differences in the length of the closed seasons for turtle under the two different Acts namely; the Forestry and Wildlife Act and the Fisheries Act. The closed or nesting season for turtles under the Forestry Act ends in the middle of the breeding season while that for fisheries regulations (not yet enacted), terminates at the end of the breeding season. In order to avoid changing the legislation that involves a lengthy process, cooperation on this matter could help provide better management of the turtle resources. Poachers have learnt of the loop hole in the system and take advantage of it.

A beach mining act is in place but it is not enforced nor is it tied to the biodiversity of the coastal area in terms of management and conservation. There is no legislation governing the function and role of the environmental coordinating unit in Dominica. The above scenario indicates that there is an inadequate legal framework for effective management of the marine and coastal resources of Dominica, and institutional strengthening is necessary to achieve this objective.

### ***2.1 Administrative arrangements for the management, development and regulation of fisheries and aquaculture***

The management, development and regulation of fisheries and aquaculture is administered by the Fisheries Division of the Ministry of Agriculture and the Environment. The Chief Fisheries Officer is the head of the Division who in collaboration with the rest of the staff and sub departments present development plans, give management advice and enforce fisheries

regulations. The administrative structure involves the Minister of Agriculture at the top followed by the Permanent Secretary, to whom the Chief Fisheries Officer is responsible. The final authority regarding fisheries management decisions is a political one taken at the Cabinet level.

Aquaculture is done on a very small scale and the Fisheries Division is also responsible for research and development. This includes identification of aquaculture sites, pond construction, development of water systems, pond management and hatchery operations etc. The Forestry Division has responsibility for the administration of fresh water aquatic resources but does not engage in aquaculture development on the island.

## ***2.2 Administrative arrangements for the conservation and rehabilitation of the coastal environment and aquatic resources***

Administrative arrangements currently in place for the conservation and rehabilitation of the coastal environment and aquatic resources involves the Fisheries Division, the Environmental Coordinating Unit, Forestry Division and the Lands and Surveys Department all of which are under the auspices of the Ministry of Agriculture and the Environment.

Other administrative bodies with great influence on the coastal environment are the Division of Physical Planning and the Ministry of Communication and Works. The MCW is particularly involved with rehabilitation works of the coastal environment including coastal infrastructure developments, sea defense walls and protection from coastal erosion.

## ***2.3 Administrative arrangements for regional planning and development in coastal regions***

Regional planning and development is administered by the Ministry of Foreign Affairs in terms of dealing with matters external to Dominica. All matters of regional concern has to be approved by the Ministry of Foreign Affairs for purposes of diplomacy and political correctness. However, once approval is granted the actual development works for coastal developments is done by the Ministry of Agriculture through its relevant Divisions, the National Development

Corporation, Tourism Division and the Ministry of Trade through the Committee on Trade and Economic Development (COTED).

***2.4 Efforts undertaken in the past and present in the field of co-management of fisheries and coastal aquatic resources. Constraints encountered, results achieved future outlook and next steps to be taken.***

For several years the Fisheries Division has made moderate strides in the field of co-management of fisheries. These include fostering the development of strong fisher groups and institutions which would be able to undertake fisheries management roles and to work alongside the Fisheries Division to achieve this objective. Most of the groups and fishermen's cooperatives which were formed have not yet developed to the point where they could be actively involved in management of fisheries resources.

The establishment of the Soufriere / Scotts Head Marine Reserve (SSMR) was legalized in 1998, and has since experienced varying degrees of success towards co-management of fisheries and marine resources in that area. The organizational structure of the SSMR involves the village council, scout troop, village improvement committee, hoteliers, the Dominica Water sports Association and fisher groups of the area. This arrangement represents some first steps towards co-management in the fisheries sector.

The beach seine fishery in Dominica is another example of co-management initiatives in the fisheries of the island. Fishers among themselves have developed rules by which the fishery was managed with little input by the Fisheries Division.

Constraints experienced through the fishers organizations include; lack of cooperation amongst fishers, limited administrative and financial management skills, difficulty in attracting younger fishers into the industry, reluctance of fishers to allow for integration into the wider society and lack of adequate representation of fishers at the decision making level.

In the case of the SSMR, there is some degree of intimidation to fishers by persons perceived as being more educated or who enjoy higher social status. There is a tendency to favour tourism activities over fisheries and the command and control system of management is still very prevalent in the area.

In terms of achievement, some degree of institutional capacity for co-management has been achieved. Education and awareness is ongoing and there is need for greater participation and involvement of the wider community for effective co-management.

***2.5. Efforts undertaken in past and present in the field of integration of fisheries and coastal aquaculture into coastal area management, planning and conservation: Constraints encountered, results achieved future outlook and next steps to be taken.***

There have been no planned programmes for integrating fisheries into coastal areas management in Dominica. However some initiatives such as the Cabrits and the Pottersville sea defense projects have incorporated fisheries to some extent into management of the coastal area. The Dominica Biodiversity Strategy and Action Plan and the Caribbean Planning for Adaptation to Climate Change (CPACC) projects, made some attempt at integration of fisheries into coastal area management, planning and conservation to some extent. The Integrated Development Plan (IDP) for Dominica identified the various components of the national economy and their relevant linkages as an effort for integration however; the plan did not integrate fisheries to any extent. This is mainly due to low priority given to this sector by other agencies of government.

Constraints encountered included; little understanding of the dynamics of the fisheries, failure to make the necessary linkages with fisheries and other coastal economic activities such as road construction, hotel developments, excavation for buildings, garbage disposal etc. There was also the issue of lack of preparedness of fisheries to play an active role in management of coastal resources and this was mainly due to the disorganized nature of fishers. There also existed a lack of cooperation and collaboration between the fisheries sector and other sectors, agencies and entities within the coastal area, lack of awareness of the impact of land based activities on fisheries and coastal areas and poor or no representation of fishers at the decision making level.

One of the greatest constraints was the social and economic forces at play in terms of who controlled the balance of power in the coastal area (Guiste, 2003)

Results have not been very encouraging, however, some moderate progress has been made in community awareness and involvement in planning of coastal developments and activities. The future requires greater concentration of effort towards identifying the relevant stake holders in the coastal area, to minimize user conflicts, move away from sectoral planning approach to a more integrated development planning approach.



## ***Country specific case studies on consideration of socio-economic and demographic concerns in fisheries and coastal area management and planning (Dominica)***

### ***3.0 Consideration of socio-economic and demographic concerns***

The consideration of demographic and socio-economic concerns in fisheries and coastal area management and planning is critical to addressing the issues of sustainable livelihoods of fishing communities in Dominica. Baker, 1997 indicates that based on a comparative analysis of socioeconomic conditions in the Caribbean region, that Dominica had the highest incidence of poverty in the Organization of the Eastern Caribbean States (OECS) Grouping.

Some fishing communities have been identified as being among the rural poor in Dominica (CDB, 2003). Fishers tend to have large numbers of children, unsatisfactory housing and living conditions, low income, inadequate sanitation facilities and extended family structures among other issues. The economic aspects in terms of returns on investment versus resource availability, cost benefit analyses, and fisher and community dependent indicators as was done for the flyingfish fishery (Guiste, 2001), are all very important considerations to improving the socio-economic condition of fishers and their communities in Dominica.

#### ***3.1 Availability of socio-economic and demographic information on coastal fishing communities; List study reports, agencies that conducted studies including fisheries censuses.***

There are no known dedicated fisheries censuses done for Dominica *per se*, however some socio-economic and demographic studies or reports done on the island have included fishing communities to some extent. Some of the studies which have been conducted include the following:

## **Caribbean Development Bank (CDB) Government of Dominica Country Poverty Assessment**

The CDB in collaboration with the Government of Dominica conducted a comprehensive poverty assessment study in 2001 / 2002. The assessment was done using seven sample communities. The sampled areas included the fishing communities of Dublanc, Scotts Head and the Carib Territory. The study methodology involved the use of questionnaires for the survey of living conditions, community surveys, statistical sampling techniques, transects, poverty indicators, head count ratios , data collection, validation and analysis. The methodology also involved the use of the Participatory Poverty Assessment Approach technique.

The results of the study showed that the incidence of poverty was not homogeneous but that it was spatial and geographic in nature. The vulnerable groups indicated in the study were the youth, displaced farmers, women who headed households and the elderly. All of the groups identified in the study apply to most fishing communities.

### **Dominica Rural Enterprise Project Appraisal Report**

This is a project funded by the Caribbean Development Bank (CDB) and the International Fund for Agricultural Development (IFAD) through a loan taken by the government of Dominica. The main objective was to identify means of increasing the income earning capacity of persons in rural communities in Dominica including fishing communities. The project was implemented by the Ministry of Agriculture and the Environment.

Areas of focus included feeder road construction for development agriculture purposes, marketing, small business and fisheries development sub projects

### **Social and Economic Study on the Flyingfish Fishery Sector of Dominica (2001)**

This study was in the form of a paper, sponsored by the Food and Agriculture Organization in 2001. The objective of the study was to determine the social and economic importance of the

flying fish fishery to the island and for comparison with other islands to further determine its importance to the Caribbean region.

The report highlighted the socio-economic aspects of that fishery and utilized demographic information such as housing, education, health facilities and access to credit for flying fish fishers. The issues of income and expenditure from the fishery, cost benefit analysis and the social interactions which influenced the nature of that fishery were also addressed. The study was conducted by the Fisheries Division of the Ministry of Agriculture and the Environment using primary and secondary data from within the fishing industry. Catch and effort data was obtained from the Fisheries Division and information on revenue and expenditure for the fishery was obtained directly from fishers using a questionnaire.

### **Dominica – European Community Country Strategy Paper and National Indicative Programme for the period 2002 - 2007**

This project is ongoing and has a broad social and economic scope. It seeks to provide 3.7m euros over the life of the project to cover macroeconomic support, sectoral policies, programmes and projects in support of focal and non-focal areas of community assistance. These include restructuring of the banana industry, agriculture diversification and support for the social sectors. It is also intended to cover unforeseen needs such as emergency assistance, debt relief initiatives and support to mitigate adverse effects of instability in export earnings.

### **National Opinion Poll on Socio-Economic Conditions in Dominica – 2001 / 2002**

This study was conducted by the Dominica Academy of Arts and Sciences Research and Development (DAAS) in 2002. The objective of this survey was to provide a base value for purposes of comparison for the measurement of economic growth, and to measure changes in the socio-economic conditions of Dominica as the people themselves perceive them. This was, therefore, an opinion survey and not a quantitative measure of the Dominican Economy. The method used was based on random sampling of residents from 21 constituencies around the country and the use of questionnaire. The results indicated that there were general low ratings for

Government services by comparison with private sector services with the media and banking services, receiving the highest ratings.

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

Socio- economic and demographic indicators have been used in the preparation of coastal fisheries development and management projects to some extent in Dominica. Some examples are given below.

#### **The Roseau Fisheries Complex**

Coastal Fisheries Development Project. This project involved the use of economic data from government estimates of economic performance regarding the fisheries sector and its contribution to the Gross Domestic Product (GDP). In addition primary data was collected by the Fisheries Division regarding the number of fishers which the project would serve, estimates and projections of increase in numbers of fishers, vendors and middle men who would be attracted to the industry as a result of the development project, fishing fleet, estimated income from fishing and the projected increase income after completion of the project. An estimate of the number of beneficiaries including both fishers and non fishers was considered in the planning stages.

The existing fish production capacity in terms of the size of the fishing fleet was compared to the presumed capacity after the implementation of the project. Information for the estimation of the income generating capacity for fishers, fish vendors and exporters was also utilized in the planning of the project.

Demographic information in terms of training needs, available skills, the capacity of persons to manage the facility and the involvement of women was also considered to ensure the maximum use of the facilities upon completion.

## **The Marigot Landing Site Improvement Project**

Consideration was given to the use of social, economic and demographic information in the planning stages. Information on the major income generating and economic activities in the Marigot area were obtained from primary sources since this information was not available prior to the commencement of the project. The Basic design study team from Japan conducted the study in order to verify and justify the size and magnitude of the project, and to plan effectively.

The population of the area was taken from the national census, the various skills available was also considered since the project would require certain skilled personnel from the area for marine mechanics, maintenance and repair of outboard engines, inboard diesel engines and refrigeration equipment. This information was obtained from primary sources.

Fishing fleet and catch and effort data was considered in the planning of the project. This was used to determine the capacity of the facility and for projection of future developments as well as for integration of the fisheries into the development of the coastal space. For example the port authority was involved in the project as well as the customs and exercise department. This was done in order to take account of the social dynamics of the area and the influence that the fisheries project was anticipated to have on the various sectors of the Marigot community and on the general population of the area. The demographic studies were used to determine the extent to which certain amenities should be incorporated into the project to serve the community as a whole rather than only the fisheries sector. The relative age distribution of the fishers were taken into account as it was observed that as much as 65% of fishers from the Marigot area were over 55 years old. This prompted the Fisheries Division to endeavour to create incentives to attract younger persons into the industry.

In addition to the above, demographic information in terms of flow of traffic in the proximity of the project site was considered in the planning stages. Flight information as it relates to movement of aircraft to and from the Melville Hall airport was also taken into consideration as it was anticipated that the project would present a good opportunity for the export of high quality fish from the Marigot fish landing facility.

**3.3 *Preparation and implementation of special projects in the context of fisheries and coastal area management and conservation programmes which aims at improving the socio-economic well being of coastal fishers and their families. Give specific examples of such projects and activities, elaborate on constraints encountered, achievements and future outlook***

**The Dominica Rural Enterprise Project (DREP)**

The Dominica Rural Enterprise Project (DREP) was a special project prepared by the CDB and implemented by the Ministry of Agriculture aimed at improving the socio-economic well being of specific disadvantaged coastal as well as inland communities. The project created a credit for fishers that was administered by local credit unions which existed in or closest to targeted fishing communities. An assessment of the needs of the most disadvantaged fishers was made and based recommendation by the Fisheries Division the individuals were given boats and engines on credit with no collateral.

During the implementation of the project, severe constraints were experienced. The project was managed by non fisheries persons although the Fisheries Division had some input in terms of helping to choose the candidates for the project but the advice of the fisheries officers was not heeded. The Division advised the project that fiberglass boats should be constructed instead of wooden boats. Wooden boats were built and they were stock piled in a shed for a few months before they could all be handed over the fishers in one big handing over ceremony. This waiting period caused the boats to crack and leak and some were attacked by wood termites and rendered damaged before they were used. Some of the boats had to be repaired before they were handed over and launched into the sea.

Secondly the project management unit did not study the habits, likes and styles of boats of the fishers. Fishers had specific boat builders. The Fisheries Division informed the project to allow fishers to choose their boat builders but the managers did not pay any attention. They decided to sign a contract for one boat builder to build all the boats required under the project. As a result fishers refused some of the boats.

Owing to the problems encountered with the boats some fishers were in arrears on their loan payments. The credit institutions had to write off three of the boats as bad debts.

The project also involved the construction of fisher's locker rooms and mooring facilities in the coastal area. There was very little involvement of the fishers. In Scotts Head the lockers took into account the construction of facilities for street vendors as well as facilities for fish handling. The street vendors had to be accommodated because they were displaced by the project site where the lockers were to be constructed. Secondly the area is a prime tourist site and the new development was integrated into the rest of the community.

However, the facility upon completion did not have any management plan and as a result it remained unoccupied for a very long time. No handing over ceremony took place, the fishers got impatient and locals started vandalizing the facility due to frustration.

This project also catered for the establishment of two gas stations for fishers. By then the project management unit had learnt from its previous experiences and fully involved the fishers in the negotiation and planning processes. The project is presently ongoing and the installation of the gas stations has also involved the local community as it is to serve both fishers and vehicle drivers as well.

The future looks very promising for this particular sub project however, the fishing vessel component of the project experienced partial success and the facilities can be salvaged if proper management systems were to be put in place. The fishers could have been responsible for the facilities and put their own management system in place, but the responsibility was left to the Fisheries Division which did not pay enough attention to management of such infrastructure.

### **Small project Layou**

The Fishers of Layou village embarked on a small 5 mile longline project which was sponsored by the OECS NRMU in 2001. The project entailed the purchase of a fibre glass boat, 75 HP

outboard engine, line hauler, longline material, hand held radio and GPS units, as well as life jackets, flares and other safety equipment.

The project was implemented successfully however, there arose problems with management of the boat and equipment and lack of unity and cooperation amongst the fishers. The community was not well integrated in the delivery of this project and this could have also been one of the reasons for the very limited success experienced. Lack of an appropriate management mechanism resulted in no one being particularly responsible for the maintenance, repair and upkeep of the fishing equipment. In addition the fishers in the area were mainly seine fishers and the equipment given was for deep sea fishing for migratory pelagics. The fishers complained that better use could have been made of the equipment if a Fish Aggregating Device (FAD) was also given with the project.

Future outlook requires that fishers be more involved in the planning of projects which are intended for them as well as ensuring that management becomes a key area of focus in the planning stages

### **World Food Programme, United Nations Project**

This project was aimed at the development of land based infrastructure for enhancement of the livelihood of fishers and their families. It consisted of jetties, slipways for ease of hauling boats up the beach, locker rooms for storage of gear and equipment and net and boats repair sheds which allowed fishers to work in a sheltered area.

The project was sponsored by the World Food Programme of the United Nations and implemented by the Ministry of Communications and works in collaboration with the Fisheries Division in 1993. The project benefited five fishing communities on the west coast of Dominica. The coastal area was enhanced as a result and it also realized synergies in terms of non fisheries benefits which accrued as a result of the new facilities. For example the jetties were used extensively by hawksters who dealt in trade in agricultural produce in the neighbouring



French islands. These traders used fishing boats as the means of transport for their produce but the fishers themselves hardly ever used the jetties for landing fish.

It was observed that in most cases the jetties were too high for the small boats for which they were built so they could not be used. The decking of the jetties which were made from wooden planks instead of solid concrete got washed away during heavy seas and there was no system in place for repair of same. They practically remained non functional for extended periods.

The lockers in some villages such as Capuchin and Viellecase went into a state of disrepair owing to the absence of any organized management system for the upkeep the facilities. There was also a certain degree of lack of capacity amongst the fishers to manage their own affairs due to lack of training and unity amongst themselves. Lack of community involvement and ability to integrate into the larger society also lead to this undesirable outcome.

However, in the community of Bioche the local village council got involved in the management of the facility since it was the only place where the community could conduct any activity. A fisheries group was organized and a payment system for the locker rooms was implemented. This has led to the facility being properly maintained and well kept. This injection of management skills from the council and other members of the community assisted the fishers immensely. The facilities became community owned rather than belonging to fishers only and the community properly integrated the facilities into the wider society. This project was very successful. The other areas met with varying degrees of success although for all of the projects management was a prime factor.

### **Marigot Landing Site Improvement Project**

The Marigot Landing Site Improvement Project is presently under construction.

It is and funded by the government of Japan and implemented in collaboration with the government of Dominica. This facility is aimed at providing fish landing, handling and processing facilities aimed at improving the socio-economic life of the fishers and that of the

entire community of Marigot and surrounding villages of Woodford Hill, Wesley and the Carib Territory.

One of the major achievements of the project is the cooperation from the Marigot community during its implementation. Some land owners who are not fishers willing cooperated in allowing access roads through their property to the project site as well as individuals who allowed piped water to the facility to be laid on their property. In addition there has been tremendous interest and integration of the rest of the community into the coastal area occupied by the project site.

There exists a very great opportunity for integrating fisheries into management of the coastal area. There is also a strong sense of ownership among the community regarding the project. Many view the facility as an opportunity for economic growth and social development and are therefore very much supportive of it.

The project is constrained by the challenge of the management system to be employed for smooth operation after completion. This is particularly so, based on the very large number of stake holders that have come forward with many ideas for operation and management of the facilities.

### ***3.4 Use of socio-economic and demographic indicators in monitoring the impact of management regulations on socio-economic well being of coastal fisheries their families and other segments***

There are no known documented studies done which indicate the use of socio-economic and demographic indicators in monitoring the impacts of management regulations on the socio economic well being of fishers and their families mainly because there are no legal fisheries regulations. However, there are communities that have reacted to certain management decisions taken by the Fisheries Division and other sectors. In such cases unplanned or disorganized monitoring is done to alleviate and pacify the situation.

For example, the turtle resources of the Rosalie and Laplaine areas of Dominica have been receiving some attention as far as management and conservation is concerned. A turtle watching programme has been implemented in these turtle nesting areas with mixed reaction from the public. Some persons who used to poach nesting turtles have suffered a change of behaviour while others see the programme as an invasion of local culture and a people's way of life. Enforcement of conservation laws (under the Forestry and Wild Life Act), have also been met with stiff resistance by some persons who have threatened wardens with violence in some instances.

In such cases management regulations have had some negative impact on the socio economic life of the people. This situation has become particularly serious in light of the present poor economic situation of the country where persons have been laid off work and salary reductions have been effected with the purchasing power of the public being consequently reduced as a result.

Another example involves closed seasons for lobster and conch. No studies have been done that uses socio-economic or demographic indicators to determine the impact of this and other such management measures on the social and economic lives of fishers and their communities neither in the long or short term. Although it is generally understood that fishers would strongly resist management measures which curtail their activities.

Such information or observations have not been captured and used as demographic indicators for monitoring purposes on the impact of management regulations in any formal way.

#### **4.0 Conclusion**

Socio economic and demographic concerns have been addressed to a limited extent in fisheries resources management, planning and conservation in Dominica. In recent times such information has been used in planning of fisheries infrastructure development to determine size and capacity of fisheries land based facilities. Demographic information in terms of size and average age of the fishing population in some fishing zones have been used for planning purposes and for projection of the size of the fishing fleet and potential fishing effort. In the 2004/2005 work plan of the Fisheries Division information on full and part time fishers has been addressed in determining levels of fishing effort and to inform strategies which could be undertaken to increase fish production. Such strategies include providing the necessary incentives to convert part time fishers into full time fishers.

Some socio economic studies have been conducted on the island which have included fishing communities. However, except for foreign funding agencies such as the Japan International Cooperation Agency and the European Union that demand such data for funding various projects, the consideration of socio-economic and demographic data has not been used extensively in fisheries management in Dominica.

Management of the beach seine fisheries of Dominica also involves tremendous social interactions and rules which have been recognized by the fisheries management authorities. The rules have been utilized in the actual management of the fisheries resources and this has brought about an almost self policing mechanism in terms of management of the coastal pelagic fishery. This issue has been taken to the point where management measures that have been suggested by the fishers and fishing communities have been incorporated into the draft fisheries conservation laws of Dominica.

Generally there has been some isolated areas where socio economic and demographic data have been addressed in planning, management and conservation of fisheries and to a much lesser extent the management of coastal resources but not as a common practice or as a generally

established principle. This has led to under utilization of scarce resources, limited planning capacity and ineffective fisheries management strategies and programmes.

## **Recommendations**

The following recommendations are hereby presented:

- That the concept of integration of fisheries into coastal area management be considered as the basis or overall framework within which relevant social, economic and demographic indicators are to be used for most effective results for planning, conservation and management.
- That fisheries and coastal resources be viewed as a dynamic system with various components which include fisheries, tourism, recreational activities, coastal developments, commercial activities, private and public ownership of coastal properties etc. and that socio economic and demographic indicators be applied in the wider context to include all the components of the system and their relevant interactions and interdependencies.
- Assistance be given to CARICOM member states to help identify and map the appropriate boundaries of the coastal system to include the relevant areas and the corresponding socio-economic and demographic indicators by which they are impacted.
- That the appropriate legal framework be formulated within which management and conservation of fisheries and coastal resources could be effected from information derived from socio-economic and demographic data, and to provide protection for minority groups and entities within the coastal system which are at risk of being marginalized by more powerful forces with stronger political affiliations or economic status.

- Greater awareness of the need for collection and use of socio-economic and demographic data in fisheries and coastal resources management be promoted through the establishment appropriate programmes and activities.
- That organized training programmes to include social sciences in fisheries and coastal area management be implemented for imparting new skills to the personnel of the various fisheries departments in the region, in order to strengthen or enhance capacity in that area.
- That a regional sub -project be developed within the above programmes for purposes of analysis of socio-economic and demographic data for use in planning, management and conservation of fisheries and coastal resources, considering that most fisheries personnel in the region are biologists and/or fisheries scientists.
- That regional institutions with the relevant capabilities and expertise be used as far as possible for building and strengthening the regions capacity for collection, analysis dissemination and use of such information in fisheries and coastal resources management.
- External institutions which could be involved should include inter alia, University of the West Indies (UWI), the Food and Agriculture Organization (FAO), International Development Research Center (IDRC), Organization of Eastern Caribbean States (OECS) and CARICOM, Canadian International Development Agency (CIDA), Japan International Cooperation Agency (JICA).
- Local institutions should include the Fisheries Division of the Ministry of Agriculture, Central Statistics Department, Community Groups and Organizations, Fishermen Cooperatives, Village Councils, Dominica Hotel and Tourism Association, The Dominica Port Authority, Ministry of Communications and Works and the Physical Planning department.

- That all foreign assistance geared towards capacity building and institutional enhancement of socio – economic and demographic indicators, as it relates to fisheries in the CARICOM region, be channelled through the CRFM. The CRFM already has a well established mechanism for networking, provision of training, identification of appropriate human and other resources, relevant expertise and a well organized system for dissemination of information in the entire region.

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